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THE

GARDENERS' CHRONICLE

A Weekly Illustrated Journal

OF

HORTICULTURE AND ALLIED SUBJECTS.

(*ESTABLISHED IN* 1841.)

VOL. VI.—THIRD SERIES.

JULY TO DECEMBER, 1889.

LONDON:
41, WELLINGTON STREET, COVENT GARDEN, W.C.
1889.

MASSACHUSETTS AGRICULTURAL COLLEGE

C
Per
G166
July-Dec
1889

LONDON:

BRADBURY, AGNEW, & CO., PRINTERS, WHITEFRIARS.

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The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2532.

No. 132.—Vol. VI. {Third Series.} SATURDAY, JULY 6, 1889. {Regt. as a Newspaper. WITH SUPPLEMENT.} {PRICE 3d. POST-FREE, 3½d.}

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Preliminary.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, E.C., on WEDNESDAY, JULY 31, in 1 LOT, the very VALUABLE FREEHOLD ESTATE, known as the Priory Nursery, Acton Lane, Acton, with the whole of the numerous and substantially-built Glasshouses, Trade Buildings, &c. The Estate possesses a considerable frontage to Acton Lane, and contains a total area of about 4½ Acres.

Particulars, with Plan, may be had on the Premises; at the Mart, E.C.; of Messrs. FORD, LLOYD, BARTLETT, & MICHELMORE, Solicitors, 4, Bloomsbury Square, W.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Horticultural Grounds, South Kensington, S.W.

By order of the Royal Commissioners of the Exhibition of 1851.

To Gentlemen building, Greenhouse and Conservatory Builders, Nurserymen, and others.

MESSRS. HORNE, SON, AND EVERSFIELD, are instructed to include in their SALE on the premises on TUESDAY, July 9, at 12 o'Clock, the grand CONSERVATORY adjoining the Albert Hall, the glazed Coverings and Enclosures over the Quadrants, the Zinc Verandah with iron ribs, arched supports, girders, and ornamental columns, 15,000 feet super. of Minton's Tesselated pavement, including three exceedingly ornamental squares, 26 by 21 feet, and 12 by 10 feet. Three "Weeks" Patent Vertical Tubular Boilers, eight "Weeks" upright and Heating Apparatus, 12,000 feet of 4 and 6 inch iron hot water Piping with bends, junctions, and ends; 800 feet of 16 inch wide ornamental Iron Gratings, Brass Hydrants, and Piping, Decorative Terra Cotta Columns, Capitals, Frieze, Shields, and Spandrils, specimen Greenhouse Plants and Shrubs in tubs, wire Trellis Work, Statuary, Stone Vases, Tazzas, &c.

May be viewed a week previous to the sale, and catalogues had on the premises, and of HORNE, SON AND EVERSFIELD, 17, Great George Street, S.W., and 84, Basinghall Street, E.C.

NOTE.—The Auctioneers beg to call attention to this favourable opportunity of acquiring first-rate Greenhouse Materials and Fittings, much of the glazing is in frames capable of being taken down and re-erected at very little cost, while many of the lots would form nearly complete buildings in themselves. The Grand Conservatory 240 feet long, 64 feet wide, and 75 feet high, is nearly entirely constructed of iron and glass, the former put together with bolts and screws, and presenting no difficulties in the way of re-erection; it will be first offered as a whole, and if not then sold, then in lots, the first lot including the whole of the upper part, which would in itself form a Conservatory of about 210 feet long, 44 feet 9 inches wide, and 38 feet high.

Re **Gibbs, deceased.—Piccadilly, on the Sutton Estate.**

VALUABLE LEASEHOLD PROPERTY, for occupation or investment.

MESSRS. EDWIN FOX AND BOUSFIELD will SELL, at The Mart, on WEDNESDAY, July 10, at 2 o'Clock, the valuable GROUND LEASES of the commanding modern Residential and Business PREMISES, Nos. 24, 25, and 26, Down Street, one door from Piccadilly, immediately opposite the entrance to Junior Athenæum Club, six storeys in height, with capital suites of Chambers on the upper floors, and Shop, Warehouse, and Counting-house on the ground floor. Held for 44 years unexpired, at a moderate ground-rent. Part of the Premises is let on lease to responsible tenants, and possession of the Business Premises and Manager's House can be had. The total annual value of the whole may fairly be taken at £700.

Particulars of Messrs. HURFORD AND TAYLOR, Solicitors, 5, Furnival's Inn, E.C.; J. J. FREEMAN, Esq., Solicitor, 2, Poet's Corner, Westminster, S.W.; at The Mart; and of Messrs. EDWIN FOX AND BOUSFIELD, No. 99, Gresham Street, Bank, E.C.

Good Chance for Florist and Jobbing Trade.

FOR SALE, a Small NURSERY, Main Road, close to a Station, consisting of three good Greenhouses (all Span-roof), Frames, Furnace, and Hot-water Piping, Stock inside and out, Tools, &c., as a Going Concern. Good London suburb. Must be Sold, or a PARTNERSHIP arranged, Owner has appointment. Address,

O. G., 41, Wellington Street, Strand, W.C.

THE OLD-ESTABLISHED SEED BUSINESS of THOMAS GIBBS AND CO., of Piccadilly, London, carried on successfully for over a century, is FOR DISPOSAL, with Goodwill of same, with or without Stock-in-Trade. Book Debts, &c., by private treaty.

Full particulars to be had of Mr. J. MELADY, 24, Down Street, Piccadilly, W.

Home Counties.

Adjacent to important Market Town.

MESSRS. PROTHEROE AND MORRIS are instructed to LET or SELL a capital FREEHOLD PROPERTY, comprising with Residence, Cottage, 11 large Greenhouses, and ample Outbuildings, particularly adapted for Fruit and Plant Growing. The Premises are well known, and have gained a great reputation.

Rent and full particulars furnished on application to the Auctioneers, 67 and 68, Cheapside, E.C.

Horticulture.

TO BE SOLD or LET by PRIVATE TREATY, one of the Oldest-established NURSERIES in the Kingdom, celebrated for Roses and Fruit Trees, delightfully situated in one of the best fruit-growing counties in England, and admirably adapted for fruit growing upon an extensive scale. The Nurseries and Grounds comprise 79 acres, 2 roods, 14 perches, stocked with the finest collections of Roses, Fruit Trees, and choice Hardy Trees, having also very extensive ranges of Glasshouses, commodious Buildings and Offices, HOUSES for Clerks and Foreman, Large DWELLING-HOUSE, replete with every convenience. Altogether, this is one of the most desirable Freehold Properties of the kind ever offered.

Full particulars and order to view on application to 309, *Midland Counties Herald* Office, Birmingham. (2884.)

TO BE LET, from Michaelmas, DYSON'S FARM, at Edmonton. Comprising a comfortable House, ample Stabling, Bunching Sheds, and other Buildings; and 38 acres of Market Garden Land, now occupied by Mr. Hollington.

Apply to Messrs. PHILIP D. TUCKETT AND CO., Land Agents, 10A, Old Broad Street, E.C.

To Florists, &c.

TO LET, a HOUSE and SHOP, N.W. Excellent opening. Close to large cemetery. Main thoroughfare. Fast rising neighbourhood. No other near. Apply by letter to OWNER, A. D., 9, Hasker St., Chelsea, S.W.

To Nurserymen, Florists, and Others.

TO BE LET, at Brentwood, in the midst of a high-class residential neighbourhood, a LARGE PIECE of LAND, upon which are a small House and Shop, and several Greenhouses. The rent is moderate, and to a practical man with a knowledge of the Cut-flower Trade a first-rate opportunity offers itself for establishing a lucrative business. An allowance would be made by the landlord towards necessary repairs.

For particulars apply to ALFRED RICHARDS, Auctioneer and Land Agent, 8, New Broad Street, London, E.C.

Crown Lands, Eltham, Kent.

To NURSERYMEN and MARKET GARDENERS.

TO BE LET, from Michaelmas next, about 35 acres of valuable LAND, in the town of Eltham, as a Nursery or Market Garden. For particulars apply to Mr. JOHN CLUTTON, 9, Whitehall Place, Westminster, S.W.

Ponder's End, Middlesex (8 miles from London).

To NURSERYMEN and FLORISTS.

TO BE LET, on Lease, one to twenty acres of rich MEADOW LAND for 21, 60, or 80 years at £10 to £12 per acre, with option of Purchasing the Freehold during the first 9 years.

Apply to A. AND G. GUIVER, Land Agents, Ponder's End, Middlesex.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

ORCHIDS.—Clean, well-grown plants, at low prices. Specimen Orchids a specialty. Price List free, JAMES CYPHER, Exotic Nurseries, Cheltenham.

LUTON HORTICULTURAL SOCIETY. ANNUAL SHOW, JULY 24 and 25. Open Division, First Prize £10. For particulars, apply to

J. GARDENER, Hon. Sec.

30, Langley Street, Luton, Beds.

TRENTHAM and HANFORD HORTICULTURAL SOCIETY.

The SECOND ANNUAL EXHIBITION will be held in Trentham Gardens, on JULY 25, by kind permission of the Duke of Sutherland. PRIZES to the amount of ONE HUNDRED and FIFTY POUNDS will be given. First Prize Collection, Fruit, 8 dishes, distinct, £7. 36 Roses, distinct, £8. Entries close, July 17. For Schedules, apply,

JOHN TAYLER, Trentham, Stoke-on-Trent.

STAMFORD and DISTRICT HORTICULTURAL SOCIETY'S SHOW, FRIDAY and SATURDAY, August 9 and 10. Special Prizes (open to all) for Roses. For schedules, &c., apply, ARTHUR WM. EDWARDS, Sec.

SHREWSBURY GREAT FLORAL FÊTE, WEDNESDAY and THURSDAY, August 21 and 22.—For Twenty Plants, £25, £20, £15. For Grapes, £60. Collection of Fruit, £10, £6, £3. Collection of Vegetables, £5, £3, £2. Messrs. Webb's Prizes for a Collection of Vegetables, £5, £3, £2, £1. Valuable Prizes offered by Messrs. Sutton & Sons. Schedules may be had from

Messrs. ADNITT AND NAUNTON, Hon. Secs., Shrewsbury.

INTERNATIONAL CHRYSANTHEMUM CENTENARY EXHIBITION, to be held in Edinburgh, on NOVEMBER 21, 22, and 23, 1889. Prizes offered in Money and Silver Cups, to value over TWO HUNDRED and FIFTY POUNDS, including the "City of Edinburgh" Cup, value £20.

Prize Schedules and Rules to be had on application, to Messrs. MUNRO and FERGUSON (Joint Hon. Secretaries), 6, South Saint Andrew Street, Edinburgh.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Make SPECIALTIES of the following:—

ORCHIDS, of which they have an immense stock, and they are constantly receiving fresh importations from various parts of the world.

ORCHID BASKETS, made of the best Teak and Copper Wire.

COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.

ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.

TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.

FERNS, a large and fine stock of the leading kinds.

GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.

STOVE and GREENHOUSE PLANTS, suitable for table and other purposes, in great variety.

The Company offer all the above at the lowest possible prices. Descriptive PRICE LISTS, post-free, on application to

THE VINEYARD AND NURSERIES,

GARSTON, LIVERPOOL.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to

Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

LILIES OF THE VALLEY!

English-grown!

The best for early forcing, finest large flowers, and superior in every respect to German crowns. Price per 1000, 10,000, to 100,000 on application.

T. JANNOCH, Lily of the Valley Grower by Special Appointment to H.R.H. The Prince of Wales, Dersingham, King's Lynn, Norfolk.

Trade only.

DAFFODILS.—HARTLAND'S famous Bulbs, grown within 10 miles of the sea, soil limestone, 3 feet in depth, resting on gravel. Prices very moderate. Bulbs magnificent, and being lifted now. Delivery, July and early August, a good month in advance of the Dutch deliveries. Write for 4 page List of Illustrations by Gertrude Hartland.

WM. BAYLOR HARTLAND, Old Established Seed Warehouse, 24, Patrick Street, Cork.

ROSES—CLEMATIS—ROSES—**all in pots,** can be sent and planted any time; the finest named sorts. See Catalogue, with colours, descriptions, prices of these, and all you want for a Garden, free for 3 stamps. 12 fine TEA and NOISETTE ROSES, 15*s.*; 12 Hybrid Perpetual ROSES, 12*s.*; 12 Extra-sized Tea and Noisettes to force now, 30*s.*; for Arbours, Pillars, Walls, &c.

3 CLEMATIS, in 3 distinct colours, 3*s.* 6*d.*; 6 CLEMATIS, in 3 distinct colours, 6*s.*; 12 CLEMATIS, in 3 distinct colours, 10*s.* 6*d.*

WM. CLIBRAN and SON, Oldfield Nurseries, Altrincham; 10 and 12, Market Street, Manchester.

PALMS AND FOLIAGE.

SPECIALTIES.

An immense Stock always on hand of the leading varieties, in finest possible condition. ARECAS, CHAMÆROPS, CORYPHAS, COCOS, KENTIAS, LATANIAS, SEAFORTHIAS, PHŒNIX, FICUS ELASTICA, ARALIAS. A very large Stock of extra-sized plants of the above varieties, from 6 to 12 feet.

WILLIAM ICETON, Putney Park Lane, Putney; and 129 & 130, Covent Garden Flower Market.

THE

GARDENERS' ORPHAN FUND.

NOTICE.

THE ANNUAL GENERAL MEETING of the SUBSCRIBERS to this FUND will be held at the "CANNON STREET HOTEL," on FRIDAY, July 19th next, for the purpose of receiving the Report of the Committee and the Accounts of the Fund for 1888-9, Electing Officers for the ensuing year, Amending Rule XII, and for the Election of Five Children to the benefits of the Fund.

The Chair will be taken at 2 o'Clock precisely, and the Ballot will close at 4 o'Clock.

The Dinner will be held the same evening at 5 o'Clock. Tickets, 5*s.* each.

A. F. BARRON, *Honorary Secretary.*
Royal Horticultural Society's Gardens,
Chiswick, London, W.
July, 1889.

P.S.—The Voting Papers have all been issued; any Subscriber not having received one, is requested to communicate with the Secretary.

PRIMULAS (Double White).—Well established, strong plants in 60's, 20*s.* per 100, £8 per 1000. Cash with order.
SMITH AND LARKE, Ashford, Middlesex.

King's Acre Nurseries, near Hereford.

JOHN CRANSTON AND CO. beg to announce that their superb Collection of ROSES is *now in full bloom.* Inspection invited.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. £1 per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.



PRIZE MEDAL

LAWN GRASS SEED.

SPECIAL MIXTURES

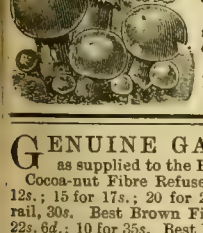
For Lawns, Croquet and Tennis Greens, Cricket Grounds, Ornamental Parks, Cemeteries, &c.

We have pleasure in stating that we were awarded, at the Newcastle Exhibition, 1887, **THE ONLY SILVER MEDAL,** for the superior and genuine qualities of our Lawn Grass.

Our Special Mixture... ... ... per lb., **1s.**; per bush., **20s.**
Extra fine, suitable for Tennis Courts and Bowling Greens ,, **1s. 4d.** ,, **25s.**

WILLIAM FELL & CO.,

ROYAL SEED and NURSERY ESTABLISHMENT,
HEXHAM, NORTHUMBERLAND.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens. All Sacks free.

Cocoa-nut Fibre Refuse, fresh, 1 sack, 1*s.* 3*d.*; 10 sacks for 12*s.*; 15 for 17*s.*; 20 for 20*s.*; 30 for 28*s.*; 2 ton truck free on rail, 30*s.* Best Brown Fibrous Kent Peat, 5*s.* per sack; 5 for 22*s.* 6*d.*; 10 for 35*s.* Best Black Peat, 4*s.* 6*d.* per sack; 5 for 20*s.* Coarse Bedfords' Sand, 1*s.* 6*d.* per bushel; 14*s.* half ton; 25*s.* per ton. Potting Composts, 5*s.* per sack. Genuine Peruvian Guano, Crushed Bones, Fertilisers, &c. Fresh Sphagnum Moss, 2*s.* 6*d.* per bushel; 6*s.* per sack. Charcoal, 2*s.* 6*d.* per bushel; 8*s.* per sack. Flower Sticks, painted and unpainted; Labels, and Bamboos. Best Raffia, 1*s.* per lb.; 7 lb. for 5*s.* 6*d.* Pure Leaf Mould, Peat Mould, and Yellow Fibrous Loam, each 1*s.* per bushel; 3*s.* per sack. Spécialité Tobacco Paper, and Cloth, 1*s.* per lb.; 28 lb. for 26*s.* Mushroom Spawn, best quality, 4*s.* per bushel. Russia Mats, 10*s.* to 18*s.* per dozen. Virgin Cork, 28 lb., 5*s.* 6*d.*; 56 lb., 10*s.*; 1 cwt., 17*s.* Write for free Price List.—W. HERBERT AND CO., Hop Exchange, Southwark Street, London, S.E. (near London Bridge).

BONES!—BONES!!—BONES!!!

Crushed Bones in all sizes for Vine Borders, Lawns, Potting, Grass Lands, &c. Also BONE MEAL for Poultry Feeding, GARDEN GUANO, DISSOLVED BONES, Special MANURES and FERTILIZERS for all purposes.

For Prices, apply to
HARRISON, BARBER & CO. (Limited),
GARRETT LANE, WANDSWORTH, SURREY, S.W.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.* each, or 1 cwt. Bags, sealed, 13*s.* By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

"PICRENA," THE UNIVERSAL INSECTICIDE.

SAFE—ECONOMICAL—EFFECTUAL.

15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95° I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

Sold by Chemists, Nurserymen, and Florists,
in Bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.*; in Tins (1 and 2 gallons), 10*s.* 6*d.* and 20*s.* each; in quantities of 5 gallons and upwards, 9*s.* per gallon.

Prepared only by
DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.



GARDEN REQUISITES.



TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each
GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Cloth or Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c. Write for Price List.

Terms strictly Cash with order.

CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Union Bank of London.*

BENTLEY'S WEED DESTROYER.

Mr. ELWORTHY, *Nettlecombe Court, writes:*—"I have tried two factors, but I find yours much the most destructive."

For full particulars apply to
J. BENTLEY,
CHEMICAL WORKS, BARROW-ON-HUMBER, HULL.

SAVE HALF THE COST.

GARSIDE'S

BEDFORDSHIRE

SILVER SAND,

Coarse and Fine,

Is admitted by the leading Nurserymen to be **the Best Quality** obtainable in the Trade.

Consumers should **Buy Direct** from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS.

Apply direct to the Proprietor for Samples and Price.

Free on Rail or Canal. *All Orders executed with the utmost promptness and under personal supervision.* Special Railway Rates in force to all parts.

GEO. GARSIDE, Jun., F.R.H.S., Leighton Buzzard, Beds.

TOBACCO PAPER, best quality, 1*s.* per lb.; 14 lb., 13*s.* Do. CLOTH, 1*s.* per lb.; 14 lb., 13*s.* Do. FIBRE, much stronger, and better than Cloth or Paper, 1*s.* per lb.; 14 lb., 13*s.* 28 lb. carriage paid to any station. The Trade supplied.—PEIRCE AND CO., Belvoir Rd., St. Andrews, Bristol.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

SULPHIDE of POTASSIUM (Harris).—A certain cure for Mildew on Plants, Red Spider, Aphis, &c. Enough to make 32 gallons of solution, free for 1*s.* 3*d.* The only kind to use is "Harris's specially prepared Sulphide of Potassium." Sole Manufacturers:—
PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

LEMON OIL INSECTICIDE.—The best of all preparations for easily, cheaply, and effectually cleaning Plants from Green-fly, Thrip Scale, Bug, &c. Follow the directions, and you will always use it.

Pint, 1*s.* 6*d.*; quart, 2*s.* 9*d.*; ½ gallon, 5*s.*; 1 gallon, 9*s.*; 4 gallons, 34*s.* Ask your seedsman for it, or apply to
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

SAFE, SURE, CHEAP, and RELIABLE.

No Mealy Bug
No Mildew
No Scale
No Blight
No Green Fly
No Red Spider
No Slugs
No Insect Pests *of any description.*

THE

"DEMON" INSECTICIDE.

The surest, safest, most effective, and economical Insecticide ever invented for use alike in the Greenhouse, Flower and Kitchen Gardens.

1 gallon makes 160 gallons of Insecticide.

On Receipt of Sixpence in Stamps we will post free, to any address, a sample ½-pint tin—a practical trial will speak louder than words.

Testimonials constantly received.

Prices, delivered free to any address:—1 pint, 1*s.* 6*d.*; 1 quart, 2*s.*; ½-gallon, 3*s.* 1 gallon, 4*s.* 6*d.*—tins free. 4 gallons for 8*s.*—Tin to be returned. Larger quantities at reduced rates. Sole proprietors—
DEIGHTON & CO.,
Manufacturing Chemists, **Bridgnorth.**



For Destroying Weeds on Garden Walks, Carriage Drives, Stable Yards, &c., also for Killing Plantain on Lawns. Saves more than twice its cost in Labour. No Smell.

One application will keep the Walks clear of Weeds for at least Twelve Months.

Used in the CRYSTAL PALACE GARDENS, the ALEXANDRA PALACE GROUNDS, the CAMBRIDGE BOTANIC GARDENS, and many other Public and Private Gardens.

Mr. W. G. HEAD, Superintendent of the Crystal Palace Gardens, says:—"We were so satisfied with your Weed Killer and its price, that we have used it absolutely. I have every confidence in recommending it."

Price:—1 *Gallon*, 2*s.* (*tin included*); 5 *Gallons*, 1*s.* 6*d.* *per Gallon*; 10 to 20 *Gallons*, 1*s.* 4*d.* *per Gallon.*

Carriage paid on 10 Gallons and upwards.

Used in the proportion of 1 gallon to 25 gallons of water, and applied with an ordinary watering can.

SOLE PROPRIETORS AND MANUFACTURERS—**The AGRI-HORTICULTURAL CHEMICAL COMPANY, Tunbridge, Kent, and Carlton Street, Bolton, Lancashire.**

SOLD IN LONDON BY—**HURST & SONS, 152, Houndsditch, E.; BARR & SON, 12, King Street, Covent Garden, W.C.; A. ROBINSON, 8, Leadenhall Street, E.C.**; and other Nurserymen and Seedsmen.

Complete Satisfaction Guaranteed

To all using preparations bearing our Trade Mark in accordance with our directions. *Refuse Imitations.*

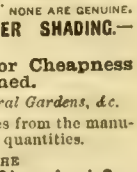
THE "SWIFT & SURE" INSECTICIDE. Bottles, 1/6 & 3/6; gall., 10/6; 4 galls., 30/

"PERFECT" WEED KILLER.—Gallon, 2/; 5 gal., 1/9, 10 gal., 1/6, 40 gal., 1/4 p. gal.

"PERFECT" WORM DESTROYER.—Bottles, 1/6 & 3/6; gal., 7/6; 5 gal., 5/ p. gal.

"PERFECT" MILDEW DESTROYER.—Bottles, 1/ & 2/; gal., 8/; 5 gal., 5/ p. gal.

"PERFECT" HORTICULTURAL SUMMER SHADING.—Tins—1 lb., 1/; 2 lbs., 2/; 6 lbs., 5/.



WITHOUT WHICH NONE ARE GENUINE.

Are absolutely Unsurpassed for Cheapness and Efficiency Combined.

Used at Kew Gardens, Royal Horticultural Gardens, &c.

Single bottles post free at published prices from the manufacturers. Special quotations for quantities.

SOLE MANUFACTURERS: THE
Horticultural & Agricultural Chemical Co.
Principal Agents: BLACKLEY, YOUNG & CO.,
103 HOLM STREET, GLASGOW.

SOLD BY SEEDSMEN AND FLORISTS.

CLIBRAN'S EUCHARIS MITE KILLER.

A CURE AT LAST FOR THIS DREADFUL PEST.

Eucharis, treated according to the directions, and grown with ordinary cultural care, become healthy in a short time, as a trial will convince. *Numerous Testimonials.*

Prices:—¼ pint, 1*s.* 6*d.*; 1 pint, 2*s.* 6*d.*; 1 quart, 4*s.* 6*d.*; ½ gallon, 7*s.* 6*d.*; 1 gallon, 12*s.* 6*d.*

Ask your seedsman for it, or apply to
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THE
Gardeners' Chronicle.

SATURDAY, JULY 6, 1889.

"THE NINE WELLS."

SUCH is the name of Professor M. Foster's residence, situated some 3 miles south of Cambridge, and about a mile from Shelford Station (G.E.R.). It is built on the brow of a hill, and commands a view of the plain of Cambridge and adjoining country. Dr. Foster is best known in Cambridge University as Professor of Physiology, and in the horticultural world he is well known as a collector and cultivator of the Irideæ. The gardens surround the house, and slope from it in almost every possible direction. There are perhaps few who would have cared to attempt the formation of a garden under such circumstances as exist at The Nine Wells, where the depth of the soil ranges from 3 inches, and in some favoured parts it boasts of a 1 foot. "So you see," says the Professor, "I have a fair start and every advantage." This soil lies on a bed of chalk, so that beds have had to be made, and for this purpose the parings and scrapings of roads have been collected and brought into use, until, at last, he has clothed the hill with rare and beautiful flowers.

So well acquainted is he with the Iris family as regards their history, cultivation, &c., that he scarcely refers to a label for a name, unless the plants are out of flower. At the time of my visit (June 22), many of the best specimens were out of flower, and undergoing their roasting, or ripening off process, by lights placed above them, so as to ensure a current of air passing beneath them; but they are so constructed that the sides of these can be fixed on, so as to form a complete small box-light. To this process Professor Foster attributes no small share of his success in growing and flowering many of the more difficult kinds of Irises.

Though my visit was a little late, I was pleased to see many good things in flower. The Iris genus does not all flower during one or two months, but, as Professor Foster says, "I commence in January, and have Irises in flower nearly the whole year through."

Firs, Elms, Oaks, and other trees have been

planted in the most exposed parts of the garden; these are growing up, so that in time the gardens will be more sheltered and protected than they are at present. Professor Foster is no advocate for planting Irises in the grass, as the grass prevents their ripening; and in wet seasons this is particularly obvious by the loss of many plants. The wet summer of last year was a very trying one for the Iris.

Some large clumps of Iris ochroleuca gigantea were magnificent. This is said to be a sport of I. spuria, requiring a stiff soil to grow in. I. Barnumæ, a lovely yellow, is said to be one of the most fragrant of Irises. A new species was in flower, which is said to be in the way of I. Cashmeriana; it is sweetly scented, and comes from Central Asia Minor. The plant, when fully grown, is about 1 foot high, with flowers nearly white. It is a handsome plant, and will be named and figured by Professor Foster at a later date. The finest of all Irises is, he says, one that had finished flowering at the time of my visit—I. Gatesi, said to even surpass I. Susiana, and belongs to the section Onocyalus. Iris spuria, with many collected wild forms of that species, were just coming into full beauty. I. xiphioides and I. juncea, with its pale yellow flowers, and many other striking Irises were in flower. Seeds of some species of Iris take longer to germinate than others, and pots in which they are sown should not be discarded as failures until after being kept four or five years. A pot of I. Duthii, sown in 1884, was pointed out to me, the seedlings of which were just coming up. The Iris fungus (Uredo iridis), I was glad to learn, confines itself to certain species, and it is moreover not very much distributed. When the fungus attacks the leaves of Irises it is very disfiguring to them, and is doubtless injurious to growth. The garden contains many beautiful things besides Irises, consisting of uncommon herbaceous plants well chosen for the situation, the names of a few of which I jotted down at the time. Eremurus Bungei, a beautiful species, from 2 to 3 feet high, with yellow flowers, was in bloom; E. robustus, with old flower-stalks from 7 to 8 feet in height must have been very handsome. Codonopsis clematidea, a campanulaceous plant, with white flowers tinged with blue, growing from 2 to 3 feet high, is a charming border plant. Calochortus splendens, of a clear lilac colour, was, as its specific name indicates, really very fine; the flowers last a long time. Allium narcissiflorum, A. Rosembachianum, and A. Bessarum, are all beautiful plants. This genus should be more commonly found in gardens than it is, if we consider how many beautiful species there are in it. Delphinium grandiplenum, from 2 to 3 feet high, with double flowers, is a very handsome variety. On a rockwork near the front door were many showy Dianthuses, and other plants suitable for the situation.

That gardeners are greatly indebted to the Professor for what he has done amongst the genus Iris as a collector and cultivator will be acknowledged by every one, and I cannot close my notes without thanking him for the kind manner in which he showed me the various points of interest at the time of my visit to his garden. *W. H.*

AGRICULTURAL EDUCATION IN NORTH WALES.—*Nature* states that it has recently been decided by the Council of the University College of North Wales to open an agricultural department at the college, and to appoint a lecturer on agriculture. A proposal for the formation of dairy schools in connection with the same institution has been favourably received.

FLORISTS' FLOWERS.

THE CHINESE PRIMULA.

WHEN these plants are in flower we are apt to think a good deal of them, but those who grow them know that no good specimens will be obtained unless they are carefully watched and tended at the present season. The parching weather is very trying to them, and a few hours' neglect of watering, shading, or ventilating, may mar the prospects of a whole season. Those who keep up a succession of flowering plants from October to April have to deal with them in various stages of their growth, at midsummer and onwards. There are first the old plants of last season, which grow into handsome specimens for flowering in the late autumn and winter. For this purpose the best are the latest plants of last year, which may have been flowered in 5-inch pots in the spring. These plants may be repotted into 7-inch pots during the summer, and stood in a frame with its back towards the south, so as to avoid the sun's direct rays, and even with the frames in this position, the plants may require shading with tiffany during the warmest part of the day. The pots should be well drained, and the potting soil of light materials, viz., one-third part good fibrous loam, one part leaf-mould, one part decayed manure, and some powdered charcoal and coarse white sand. It is well to remember these last two ingredients, as the old plants are liable to damp off at the collar unless the water can pass away freely. Large plants of the double-flowered varieties may be treated in the same manner.

With young seedling Primulas, or those struck from cuttings, (these latter including the double varieties, which are sterile, and of which cuttings are struck in the summer month), some growers are apt to blunder in their methods of procedure, and verify one of Pope's lines—

"A little learning is a dangerous thing."

The cuttings may be taken off by two cultivators, planted in the same way, and placed under hand-glasses, in expectation of their forming roots, with the result that one lot will fail and the other succeed. This is chiefly due to the operator losing sight of the fact that Chinese Primulas are very liable to damp-off unless certain conditions are observed. In order to ensure success, a piece of the more woody stem should be attached to each cutting, and before taking the cuttings the plants should be allowed to become rather dry at the root, and the cuttings should lay exposed to the air in the shade for half-an-hour or an hour after they are prepared, so that the cut end may be dried up somewhat. Insert the cuttings singly in thumb-pots, employing soil in a moderately moist state. The object in having the soil moist is to keep the cuttings fresh, as no water ought to be applied to them until some roots or rudimentary portions of roots are formed. They must be placed in a close hand-glass in a shady place, and the cover should be taken off daily and the condensed moisture wiped from the glass. If the cuttings should in a few days become loosened, they may be made firm by pressing the sand round them. As a rule, the roots soon form, and when it is seen that this has taken place, air must be admitted gradually to the handlight, and in a week or two they may be placed in a cold frame, and be repotted in a short time into the compost recommended for the old plants. A safer way to obtain young plants from old stools is to take a plant with several crowns. Let it become rather dry at the roots, clear off a portion of the old leaves, and when the wounded parts have healed, place some sandy soil such as is used for cuttings around the stems, when roots will quickly form, and the plants can be detached and potted.

Seeds may be sown during the months of April, May, June, and July, and it may be observed that those sown the latest require the least attention. The plants raised before the warm weather sets in, are apt to suffer if not carefully watched, pricking them off, and potting them as soon as these operations are required. Indeed the whole secret of success consists in growing on these plants from the first without any check to their growth. The single and semi-double flowered varieties are raised from seeds; and one year old plants need not be grown in pots larger than 48's, and throughout the summer and autumn the plants may stand in frames with the lights entirely removed during fine weather, but if there be too much sun shining directly upon them, a little light shade is needful. *J. Douglas.*

NEW OR NOTEWORTHY PLANTS.

CYPRIPEDIUM DE WITT SMITH, *n. hyb.*

THIS is a new hybrid, raised in the establishment of Messrs. Hugh Low & Co., of Clapton, from C. Spicerianum as the seed parent and C. Lowii. It was exhibied by them at the show of the Royal Botanic Society on June 19 last, when it was awarded a Botanical Certificate. The leaves are wholly green, narrow, and much resembling those of C. Lowii, while the scape, some 15 inches high, bears two flowers which are tolerably intermediate between those of the two parents. The upper sepal is orbicular ovate, the margins a little reflexed near the base, and conduplicate near the subacute apex; colour, centre and base pale green, spotted and veined with purple-brown, the broad margin cream-white, with a few traces of light purple, while a narrow purple-brown band extends from base to apex. Lower sepal elliptical ovate, pale green. Petals 2¾ inches long, a little narrowed below, and the upper margin undulate, bright green on lower half, with numerous purple-brown spots, passing into light rosy-purple above. Lip dark olive-green in front, lighter behind. Staminode obcordate, light purple, with a few green markings in the centre, margin not undulate. The vegetative organs show a considerable approach to those of C. Lowii, while the elongation of the petals and the shape of the staminode are also derived from the same source. The shape and colour of the upper sepal, with its median purple band, the undulate upper margin of the petals, the numerous small spots, and the colour of the staminode, show an approximation to C. Spicerianum. Altogether it is a bright and attractive little plant, and bears the name, by request of Messrs. Hugh Low & Co., of De Witt S. Smith, Esq., of Lee, Mass., U.S.A., who is an ardent admirer of Orchids generally, and especially of the genus Cypripedium. *R. A. Rolfe.*

ODONTOGLOSSUM WENDLANDIANUM×, *hyb. nat.*

This is a beautiful, but very puzzling plant, introduced by Messrs. F. Sander & Co., of St. Albans, from the Popayan ranges, New Granada. It appeared with O. crispum Lehmanni, and is believed to be a natural hybrid derived from it, with some other species which grows there—possibly O. cirrhosum, though the column-wings and crest show little affinity with our present plant. O. Hallii also grows there, but I do not think it can have been one of the parents. A pseudobulb with leaves, and a branch of the panicle, have been sent to Kew. The former differs but little from O. crispum, while the flowers approach O. cirrhosum more nearly in shape. The segments are narrow, less attenuate upwards, and beautifully crispo-undulate on the margins, cream-white in colour, with numerous cinnamon-brown blotches on the lower half, those of the petals inclining a little towards purple. Lip ovate-triangular, with broad base and narrow acuminate point, cream-white, with cinnamon-brown spots, one in front of the disc being much larger than the others; margin fimbriate, crest consisting of several radiating teeth; column-wings small, and nearly evenly fimbriate. A flower from a second plant has the ground colour inclining towards light yellow, the spots more purple-brown, and generally smaller, base of lip light yellow, and margins more reflexed. It is a chaste and elegant little plant, and is named after Herr Wendland, who was much struck with its appearance when he saw it the other day. *R. A. Rolfe.*

LIQUID MANURE FOR THE GARDEN.

As liquid manure may truthfully be termed the greatest boon to horticulture, the saving and application of this auxiliary should be worthy the attention of all practical gardeners, as there are few subjects more important to efficient and profitable culture than its economical distribution.

Many years ago Boussingault proved that, weight for weight, the urine of the horse, in its natural state, contained three times as much nitrogen as the solid excrements; and the urine of the cow twice as much nitrogen as the solid manure. Yet we frequently find great care is taken to preserve the solid excretions of animals, while the liquid portion is allowed to run to waste.

Liquid manure may be produced in a variety of ways. It may consist of the fermented urine of horses, cows, sheep, or pigs, or a mixture of them all with the washings of the stable-floors and sewerage; or it may be produced by converting the solid and liquid excrements of our domestic animals into a muddy liquid; and in this process of liquifying the solid excrements and preparing them for plant-food, much or little water may be used. These and several other circumstances, such as the nature of the food upon which the animals have been fed, must of course affect the composition of liquid manure, and with its strength, the fertilising value.

Although water is not the actual food of plants, yet it certainly contributes very largely to their support; and as it was aptly remarked by Davy in his work on *Rural Economy*, "no manure can be taken up by the roots of plants unless water is present; and water or its elements exist in all the products of vegetation." Further, it has been shown by Professor Johnston, in numerous experiments, that the quantity of nourishment or solid matter absorbed by the roots of plants is always in proportion to the impurity of the water with which they are supplied; thus, Beans were made to vegetate under three different circumstances:—The first were grown in distilled water; the second were placed in sand, and watered with rain-water; the third were sown in garden mould. The plants thus produced, when accurately analysed, were found to yield the following proportions of ashes:—

1. Those fed by distilled water	3·9
2. Those fed by rain-water	7·5
3. Those grown in garden mould	12·0

Professor W. O. Attwater, of the Connecticut Agricultural Station, U.S., has also investigated the subject by sowing an equal number of seeds of Buckwheat and Oats in boxes filled with pure sand, and watering them either with rain-water or with various liquid manures chemically prepared. The following table gives the result of four of those experiments: Nos. 1 and 2 were watered with rain-water; whilst Nos. 3 and 4 received a liquid manure containing known quantities of potash, phosphoric acid, and nitrogen. When the plants were ripe, they were harvested, the roots being freed from sand by careful washing, and the dissected parts air-dried and weighed.

Dissected Parts of the Plants.	Supplied with			
	Rain-water.		Liquid Manure.	
	Buck-Wheat.	Oats.	Buck-Wheat.	Oats.
Weight of stem and leaf	4·9	1·8	25·4	34·5
Weight of seeds	1·2	0·3	20·4	4·2
Weight of roots	4·6	2·3	5·4	17·3
Total weight of plants	10·7	4·4	51·2	56·0

It will be admitted by every horticulturist that, under the name of liquid manure, fertilisers of widely different characters are applied to plants, and that probably the differences in the observed effects of liquid manure may be due, at least to some extent, to its variable composition.

We propose to discuss the composition and fertilising value of different descriptions of liquid manure, and to show how far differences in composition influence the effects capable of being produced in the garden; also to examine the circumstances in which liquid manure may be employed with decided advantage, and to attempt an explanation of the causes of success; and lastly, to discuss the characters of soil upon which liquid manure produces no beneficial effect, and state the reasons of failure.

The intrinsic value of all manurial substances is mainly dependent upon the amount of nitrogen, phosphoric acid, and potash, which they contain. Some idea, therefore, of the relative merits of various liquid manures, may be formed, by a comparison of six samples taken and analysed by the late Dr. A. Voelcker from the manure-tanks of five different farms, and comparing the proportion of fertilising ingredients which each contained.

The following is the description of the samples selected:—

1. Drainings from horse stables.
2. Drainings from cattle-sheds and yards.
3. Drainings from stables, a manure-pit containing animal refuse, and dwelling-house sewerage.
4. Drainings from cattle-sheds and yards.
5. Animal excrements and rain-water:—(*a.*) The clear liquid; (*b.*) The muddy liquid.

Table showing the Proportion of various Chemical Constituents containing in one gallon of each, six samples of Liquid Manure. Quantities in grains.

	Total dry Organic Matter.	Mineral Matter (ash).	Nitrogen.	Phosphoric Acid.	Potash.
1	418·3	262·8	94·0	2·70	175·2
2	601·1	361·9	18·4	9·51	189·6
3	121·1	73·9	21·9	2·30	21·1
4	111·9	91·3	30·3	4·83	13·7
5 (*a*)	29·2	21·5	3·3	2·36	2·4
5 (*b*)	95·8	45·6	4·5	3·72	2·3
Mean ...	229·6	142·8	28·8	3·90	67·4

Even a superficial reader will be struck with the great variations which are exhibited in the foregoing results, of the relative amount of the more important fertilising substances contained in a gallon of liquid manure. It is evident that the practical effects capable of being produced in the garden must also vary according to the nature and amount of the constituents in each. And as the composition of different samples is found to differ so widely, we cannot feel surprised to hear that in one instance liquid manure has done marvels, while in others little or no benefit has accrued from its use.

Many persons, deceived by the bad smell and dark colour of liquid manure, entertain very extravagant notions respecting the amount and intrinsic value of the fertilising matters which it contains. It is well, therefore, to remember that 50,000 gallons of liquid manure of the mean composition of the six samples analysed by Dr. Voelcker will not contain more plant food than 2 cwt. of good Peruvian guano.

We must leave to a future occasion the consideration of the application of liquid manure, and the character of the soils upon which it may, or may not, be applied with advantage. *John J. Willis, Harpenden.*

FRUIT REGISTER.

LAXTON'S NOBLE STRAWBERRY.

I send you a few fruits of this fine new Strawberry from out-of-doors, as grown in Mr. Bubb's nurseries, at Solihull, near Birmingham. This and Laxton's other new varieties, King of the Earlies and Jubilee, were purchased when first sent out, and Noble was so promising last summer that Mr. Bubb saved every runner and planted a large breadth of this variety. Close by are plantations of President, James Veitch, Garibaldi, and Vicomtesse Hericart de Thury, Garibaldi hitherto having been relied upon for the first crop. The old plants of Noble are loaded with fruit, and the yearling plants have a large crop, many of them 2 lb. each, and it is a week earlier than King of the Earlies or Garibaldi. It is a very fine early variety, in fact, in my opinion, the best early, as it produces fruit of uniform size, good in colour, flesh solid and pinkish throughout, agreeable flavour, is a good traveller, and very prolific. Jubilee will prove to be a valuable late Strawberry. King of the Earlies is not so early by a week as Noble in this locality, and the King and Garibaldi ripen at the same time. At least, that is the experience at Solihull. *A Strawberry Grower.*

[The twelve fruits sent weigh 14 oz.]

The Wellington Apple.

The only English Apple, says the President of the Ontario Fruit Growers' Association, that struck him on a visit to this country, was the Wellington. That impressed him as much as the Canadian Apples themselves. Mr. Allan, he tells us, endeavoured to procure some grafts. These were promised him on condition that they should not be sent to Canada. The President asked, "Why?" and received the answer, "Well, it is the only Apple we can make anything out of here now, and if those Canadians get any, we are done." No grafts could be obtained on that occasion, but some were obtained elsewhere. Why did the President not apply to the Royal Horticultural Society at Chiswick? There is no fear of being done in that way.

THE MANCHESTER BOTANICAL GARDENS.

These gardens were seen to the best advantage on the occasion of the great Whitsun show, for though a few days previously Manchester had been visited by a very heavy hailstorm, which had left its mark upon vegetation and destroyed the beauty of many flowers, it had yet freshened up tree, shrub, and grass-plat, and under the almost tropical heat of the opening day the gardens were delightful to the eye—so cool, refreshing, and inviting. Since last year avenues of trees have been planted to the broad walks: the broad, central walk is now an avenue of Thorns; there is one of Limes, and another of Chestnuts, and another of Lime and Beech. These avenues when they grow into size will furnish shady promenades of a pleasant character.

The flowering-house was exceedingly gay with a number of very fine specimens of Schizanthus pinnatus. It would be difficult to imagine better grown and bloomed examples and finer varieties of this old-fashioned, Chilian, half-hardy annual than could be seen here. They were growing in large pots, were 4 to 5 feet in height, and from 2 to 3 feet in diameter. As a matter of course, such specimens can be grown only from seeds sown in the autumn. Mr. Paul, Mr. Findlay's able lieutenant, informed me that the seeds were sown the first week in September, and in about six weeks the plants are large enough to prick off into 6 or 7-inch pots. Here they remain all the winter, and are kept almost stationary until February, then they are shifted into pots somewhat larger, and in a few weeks when the roots reach the sides of the pots, and before the plants become pot-bound, they are shifted into 10-inch pots, and in these they flower. The effectiveness of the specimens is increased by keeping the plants tied up to stakes, or else the branches fall abroad. I find it is the practice at Old Trafford to put from one to three plants into a pot to bloom, according to their size. Other flowering plants included some fine specimens of Gladiolus Colvillei alba, Calceolarias, Sparaxis, and Phyllocactus splendida, large and brilliant in colour.

In one of the stove houses, the maple-leaved Pterospermum acerifolium is seen represented by a fine specimen; it is grown for its handsome foliage rather than for its white flowers, and it requires plenty of heat.

A large circular tank has been constructed in the spacious Palm-house, and is planted with Nymphæas,

such as dentata, white; Devoniensis, deep rosy-crimson; Eugenia, and others. In the Palm-house are some very fine specimens, which are a source of great interest to visitors. On the inside of the roof a planted-out specimen of Clerodendron Balfourianum is seen blooming with great freedom, and forming dense wreaths of blossom. There is in the Camellia-house a very fine specimen of the Aralia-like Oreopanax dactylifolium, which made a vigorous growth of nearly 5 feet last year; it is planted out in a side border. Metrosideros speciosa has bloomed with remarkable freedom. A lofty specimen of the Swan River Acacia grandis blooms so freely in spring as to resemble a fountain of gold overflowing its pendent branches. There is here also a very fine and tall specimen of Acacia grandis. The Guava trained overhead is seen to be fruiting as freely as a Plum; it is planted out. There are two species here—one is Psidium pomiferum, with yellow fruit; the other P. Cattleyanum, with dark purple fruit. The latter appears to be the best for general culture.

In the Orchid-house could be seen some fine pieces of Cattleya Mossiæ, C. Mendelii, and C. lobata, all of good quality. In the small annexe leading to the Orchid-house, could be seen an admirable strain of Gloxinias.

The fernery always repays a visit. It is now becoming densely furnished with vigorous foliage; and the carrying out of a few details of re-arrangement has added greatly to its general effectiveness. Too much cannot be said in praise of Mr. Clapham's admirable work here, and also in the open. The piece of rockwork in the garden near the exhibition-house is becoming covered with foliage, and it is a feature in the gardens that appears to be highly appreciated by the Fellows of the Society and visitors generally. *R. D.*

ROSA BERBERIDIFOLIA.

(Figs. 1 and 2).

This curious Rose has been variously denominated but the earliest name is that applied by Pallas, when he presented his paper on the plants of Sievers to the Imperial Academy of Sciences in St. Petersburgh in 1795. That paper was published in the *Nova Acta* of that learned body in 1797.

The plant had, indeed, been noted previously by A. L. de Jussieu in 1789, but he applied no name to it. Since that time it has been the object of numerous memoirs and discussions, and such is the singularity of its structure that some botanists have placed it in different genera even. Our own observations, made on specimens kindly placed at our disposal by the authorities of the Royal Gardens, Kew, and by the Rev. H. Ewbank, lead us to concur in opinion with those who consider the plant to be a true, though somewhat eccentric, Rose. It is a native of the desert regions of Persia, Chinese Tartary, Soongaria, and Afghanistan, and has been cultivated at various times in this country, although few, if any, growers have been able to keep it for more than a few years. It is a straggling shrub of moderate proportions, with long, slender, wiry, puberulous branches, more or less thickly and irregularly beset with small whitish curved prickles, some of which are, in botanical phrase, "decurrent" at the base, and form white lines on the branch, first on one side then on the other. Of course, there is no decurrence really, the appearance is really due to the opposite cause, "upraising.' It sometimes happens that a pair of these prickles' occupy a position at the base of the petiole corresponding to that of the stipules of an ordinary leaf, but there is no regularity in this matter, and structural reasons forbid us from considering them as true stipules. The leaves are more or less glaucous, and consist of one leaflet only, corresponding to the terminal leaflet of an ordinary Rose leaf. The flowers are solitary, about 1 inch in diameter, and have the flower-tube somewhat globular, densely covered with spreading prickles outside, and with a few strigose hairs inside. The sepals are spreading, broad at the base, linear, simple or slightly lobed. The petals are roundish, about the same length as the sepals, clear yellow, with a purple spot at the base, which is a peculiarity this Rose enjoys all to itself. The numerous stamens have also each a reddish-purple spot at the base, thus forming collectively a continuous coloured ring. The styles are free, protruding from the orifice of the flower-tube, densely shaggy, dilated upwards into a flat, kidney-shaped stigma, at the base of which is a narrow band rim of purplish colour, collectively forming a coloured circle within the similar band belonging to the stamens. The ovaries themselves are glabrous. Such are some of the prominent characteristics as observed in the living plant.

It would occupy too much space to go into further detail, which would, moreover, be more suitable for a purely botanical periodical; suffice it here to say,



Fig. 1.—Rosa berberidifolia.

that a careful examination of the anatomy and mode of development of the plant, suffices to solve some of the problems connected with it, and to dispose of the speculations of some botanists who had not in their time the requisite means or opportunity for study.

The conclusions at which we have arrived are (1), that the simple leaves represent the terminal leaflet of an ordinary Rose leaf (and not a fusion of two stipules); this is proved by a study of the development, and of the minute anatomy; (2) that the stipules are undeveloped, though potentially present, as shown by the arrangement of the fibrous cords in the leaf-stalk; (3) that the prickles are, as usual, epidermal developments, and not of a stipulary character; (4) that the reasons founded on these vegetative characters do not suffice to disqualify the plant as a true Rose.

The peculiar distribution of colour not only at the base of the petals, but also at the base of the filaments, and the top of the style, has not been previously noted, and is very significant as to the method of fertilisation by insects.

Of more consequence to cultivators are the facts that they have not, hitherto, succeeded in enabling the plant to adapt itself to cultural conditions for any length of time. May Mr. Watson be more successful than his predecessors! Mr. Ewbank tells us he has not been able to keep it for more than a year or two, and long ago Lindley wrote that it submits permanently neither to budding, nor grafting, nor laying, and does not strike from cuttings. "Drought," continues Lindley, "does not suit it, it does not thrive in wet, heat has no beneficial effect, cold no prejudical influence, care does not improve it, neglect does not injure it."

Rosa Hardii ×.—This is supposed to be of hybrid origin, and to be the issue from Rosa clinophylla crossed with R. berberidifolia. It has the flower of the latter and the leaves of clinophylla. It was raised by M. Hardy, in 1836, and is, according to Gay, mentioned by MM. Cels frères, in *Ann. de Flore et de Pomone*, 1835-1836 (with a good coloured figure), and in the *Bon Jardinier* for 1842. *M. T. M.*

NURSERY NOTES.

THE KNAP HILL AZALEAS.

After seeing the group of beautiful new hardy Azaleas at the Temple Show, and hearing from Mr. Anthony Waterer that it represented only a few, and those not the best, of the many new seedling varieties he has lately raised, I made up my mind to go to the Knap Hill nurseries and see the Azaleas, old and new, in full bloom in the open air, where one can better judge of their merits than under canvas and in pots.

As every one knows, these famous Knap Hill tree nurseries are throughout May and June a scene of indescribable beauty, for there you may see every variety of tree and shrub that flowers at this season that is worth growing, but none that have the character of being tender. So strong is Mr. Waterer's antipathy to a tree or shrub that is liable to be winter-killed in his nursery, that you may seek in vain for things that may be safely planted in warm southern or sea-coast gardens. But as soon as he has confidence in the hardiness of novelties, he starts to grow them on a large scale. With the Azaleas even, which I went specially to see, there was for some time a doubt as to whether the lovely little Chinese Azalea mollis should be admitted into the category of thoroughly hardy shrubs; but after its satisfactory behaviour for several years in the fully exposed parts of the nursery, there is now no doubt about it; the only fault it has is that of being a little too precocious, which in some seasons tells against it when bud and leaf are damaged by treacherous late frosts. However, one can see that it is in demand, as it is grown by the acre, and as I saw them just in perfection, the glow of abundant bloom upon every bush was beautiful in the extreme, and on seeing such a bright field of colour one overlooks the monotony of flower tints in this Azalea, compared with the endless hues so striking in the North American kinds. Some think that this paucity of distinct and varied colour of A. mollis detracts from its value, but there is something very charming in the subtle tones of its bloom that range between the clear yellows and glowing flame tints, with which the bright greens of the new foliage blends so harmoniously. It is indeed remarkable that this Chinese shrub, introduced so many years ago has produced so few really distinct varieties, and has responded so feebly to the efforts of the hybridist, whereas the other hardy Azaleas have an opposite tendency. I saw but one hybrid from it at Knap Hill, which was raised between A. mollis and the old A. altaclerensis or A. sinensis, as it is also called, although A. mollis is, strictly speaking, the true A. sinensis, but it may be some time before it supersedes the now well-estab-

lished name. Even if nothing were done to extend the varieties of this charming Azalea, it will always be popular, since it flowers earlier than the rest, and is invaluable for forcing into bloom in early spring.

It is with the group commonly known as Ghent Azaleas that Mr. Waterer has chiefly devoted his attention, and he has certainly made wonderful strides in the improvement of the race by hybridising and by careful selection. The chief point he has attained is the enlargement of the flower, and in his latest seedlings the blossom is twice and thrice as large as that of the old sorts, and with the size the form has been improved, for instead of being starry and tubular, and the flowers of the majority of old sorts, they are as open and flat as those of the best Rhododendrons. Those who know only the Azaleas of the old types will perhaps think that an extension of the great range of colour to be found in these would be impossible, but in the new varieties will be seen not only the purest whites and the most fiery scarlets and crimsons, but in many instances a combination of striking colours, such as scarlet and orange. I admired most the self tints, as they give the best effect in mass, and one form I noticed was a rich plum-purple, quite different from any I had seen. Mr. Waterer is very particular too about habit of growth, in short, he has set up for himself a high standard with which every new seedling must comply before it be considered worthy of a name. The consequence of this is, that out of the thousands of seedlings one sees, the selection of sorts worthy of names is not great, though a very large proportion of them are improvements upon old named sorts. Another point in these new seedlings must not be overlooked, and that is their leafiness at the time of flowering. The fault of most of the old sorts is, that their profusion of bloom is unaccompanied by foliage, but in the new the colour, relieved by foliage, is more pleasing. This desirable quality has been brought about by selection of the best habited seedlings, and breeding only from those that carry foliage with flower, and this is more apparent in the seedlings that have been raised from the late flowering A. occidentalis, which has brighter green and denser foliage than others at the time of flowering, which is always after the other kinds are on the wane. In fact a distinct race of late-flowering Azaleas is being developed in this nursery, the value of which cannot be over estimated.

The group of double-flowered varieties, of which the well-known yellow narcissiflora may be taken as the type, is still small, but the majority of them are very beautiful, and they possess the great advantage over the single-flowered sorts of lasting a much longer time in perfection. I saw a white sort which was as pure as a Gardenia, and almost as strongly perfumed. It will, do doubt, be taken in hand by florists, as each flower is just the size for coat bouquets. Altogether Mr. Waterer has good reason to be satisfied with the results of his work in improving Azaleas, and he still hopes to effect further improvements. True, he had ample and splendid material to work upon, and fortunately for him the group he has taken in hand responds readily to his efforts. We see these new seedlings now in a pigmy stage of growth, but what will they be when they have grown full size, specimens 10 feet high, with wide spreading tabulated branches, such as one sees the Azaleas raised fifty years ago in this and many other old gardens. They must obviously supplant the multitude of old sorts, the Hybridæ belgicæ and Hybridæ altaclerenses of catalogues of bygone days which, splendid as they undoubtedly are, must give way to the coming race. It would be a useless task to try to unravel the parentage of hardy Azaleas. They are now so interbred that we cannot find the typical species. We know that they have come from the North American wild species, such as the bright scarlet A. calendulacea, A. nudiflora, and others which have given the richest and most delicate colours, while the yellows have been derived from the South European A. pontica, added to these are the more recent A. mollis of China and Japan, and the Californian A. occidentalis. The American botanists tell us that in a wild state some of their wild Azaleas or Swamp Honeysuckles sport with numberless varieties, and taking advantage of this tendency the earlier raisers were able to produce a multitude of sorts in a short time. What I should like to see tried is the intercrossing of the deciduous Azalea with the evergreen Rhododendron. If we could combine persistent foliage (for winter effect) with the wonderful range of striking tints, what a glorious race of hardy shrubs we should have. If only the Azalea had the noble foliage of the Rhododendron, it would run it very hard for popularity. This, indeed, is not impossible, seeing that Azaleas and Rhododendrons belong really to one and the same genus; and many years ago a hybrid was raised between R. ponticum and one of the deciduous Azaleas. This hybrid was named R. azaleoides, and A. odoratum, and magnificent masses of it were to be seen recently at Kew in front of the Palm-house.

Azaleas always have been, and always will be, popular flowers, but I am tempted to quote the oft-repeated phrase, that "this class of plants is not planted nearly to the extent its merits deserve." The peaty soil they most delight in may be had so cheaply in these days, that there is no reason why every garden on the clay should not have its patch of Heath soil, where the so-called American plants can be grown to perfection. The deciduous Azaleas make capital town plants, as they throw off their dirty foliage in autumn; and this year I have seen almost in the heart of London some beautiful displays of these flowers. *W. Goldring, Kew.*



Fig. 2.—Rosa berberidifolia. Flowers yellow, with a crimson eye. (see p. 8.)

Trees and Shrubs.

PINUS LARICIO KARAMANA.

The history of this tree, with illustrations, was given in a former number, 1884, Vol. xxi., p.p. 480 and 481. Since that notice was published, the tree at Kew has died, so that we were pleased recently to see another specimen at Syon, and we are indebted to Mr. Wythes for specimens of both male and female flowers. Although nearly related to Laricio, and especially to the var. Pallasiana, it is so different

in the bud and in the size of the cone which is much larger than in any other form of Laricio, that many would be disposed to consider it a distinct species, but there are too many intermediate forms to render this desirable on botanical grounds, however much it may be so for forestal purposes. The same form, if we are not mistaken, occurs in a fine specimen at Dropmore, but we cannot be sure of it, as it has not produced cones.

Abies Mertensiana Albertiana.

Those who have not yet added the subject of this note to their collection of Conifers should certainly do so, as its rapid growth and tall graceful habit make it worth a prominent spot in the most select collection of these plants. On the occasion of a recent visit to Glenstal Castle, the residence of Sir Croker Barrington, Bart., I was shown by the head-gardener, Mr. R. Weller, by far the finest specimen that has as yet come under my notice, growing in a wood about a mile from the Castle. It seemed to me a great pity that it was so far away from the pleasure-grounds; but doubtless the shelter afforded by the surrounding trees has proved beneficial to it. Mr. Weller measured the tree about a year since, and it was then found to be 68 feet high, and its diameter, which I paced, was fully 40 feet. Not only is its size worthy of note, but it is perfect in every way, and more dense in foliage than it is usually met with. I see by Veitch's *Manual of the Coniferæ* that A. Albertiana was only introduced into Great Britain in 1851, so that the age of the tree referred to cannot be great. I may add that its congener, A. canadensis, is finely represented in other parts of the same grounds. *E. Dumper.*

PROTECTION OF ROSES IN WINTER.

As I may be said to have lived and grown at various heights and distances about the earth from 0 to 20 or more feet, I have of course formed some rather definite opinion on this practically important and theoretically interesting subject. Had I lived in the Dark Ages, when horticultural secrets were hawked about from bothy to bothy, and not divulged until the demand of five or ten shillings was forthcoming, a handsome sum might have been pocketed before my horticultural safety lines were divulged; but now the *Gardeners' Chronicle* is the honoured revealer of all horticultural secrets in general, and many special Rose secrets to boot. Hence I hasten to say that in all probability the space between 3 feet and 4½ feet above the ground line includes the line of greatest safety to Tea Roses and other semi-hardy plants.

How a horticulturist of the wide experience of Mr. Douglas should seem to say just the contrary on p. 753 of the last volume passes my comprehension. Few know better than Mr. Douglas how chillingly cold the grass line always was and is, and I fail to see how the self-same line, identical in low level, can become warmer, even should it be clothed with Tea Roses.

I appeal to the health and safety of Mr. Cant's Teas as further proof of the practical security of my safety line. These are by no means all annual or leafy plants, though if they were I fail to see how that should weaken the force of the proof they furnish. Were Mr. Douglas to hie away from Ilford to Colchester, he would hardly be more favourably impressed with the cosy, safe look of those specimens of standard Teas, than with the hearty welcome and goodly hospitality of this prince of East Anglian Rosarians.

There is no possible objection to Mr. Douglas growing his on the ground line, or a foot above it, if he prefers it, for they are so exquisitely sweet and beautiful, that the more of these grown anyhow, everywhere, the better. But I contend the mounted plants are the safest from damp, whence also from frost. Even Mr. Douglas seems to have found this out, for he raises his bed bodily a foot above the general surface. So far good and safe, but why not further? and if he mount at all, why stop at a foot, or even a yard? Ah! thereby hangs a tale something like this:—The exact line of safety may not yet be known; I only profess to know that it is not found on the flat, nor a foot above it, but somewhere above and beyond a yard.

I wish the Editor would tell us what he knows about waves of cold and frost lines within the very moderate distances of, from the surface to 6 feet above it. This might result in the elucidation of something like hard-and-fast safety lines at specific heights and distances. Meanwhile there is no danger in plants, beds, and borders of Teas as standards, a yard or more high. The stems are large, and it is almost as easy—some say it is easier—I know it is somehow done, to thrust a handful of Pea-straw, or feather bracken, into the head of a standard as to protect a bed of dwarfs on the ground line. I beg pardon, a foot above it. *Rosa.* [Mr. Mawley, who is an enthusiastic Rosarian, as well as a meteorologist of high standing, will, we trust, give our readers the benefit of his experience. Ed.]

ORCHID NOTES AND GLEANINGS.

DENDROBIUM CRYSTALLINUM, *Rchb. f.*

An interesting series of flowers of this beautiful Dendrobium has recently been sent to Kew by Major-General E. S. Berkeley, which go to show that the species is one of considerable variability. The series comprises four forms, the finest of which is fully 2¾ inches in expanse, with broad, acute petals; the tips of the sepals are washed with mauve-purple on both sides, but the colour is deepest on the back; the petals and acute lip have the apical part for about one-fourth of the way down, of a rich, bright, mauve-purple; the disk of the lip is clear yellow, and the rest white; this form appears to be the typical plant, as described by Reichenbach in these columns in the volume for 1868, p. 572, and figured in his *Xenia Orchidacea*, vol. ii., p. 210, t. 193, f. 1 to 4. The second form has flowers of the same size, but with the petals rather broader, and not so acute; the sepals are entirely white, without purple tips, and the purple on the tips of the petals and lip occupies a much smaller area, and is much less intense in colour; this variety is very similar to that figured in the *Botanical Magazine* at t. 6319, except that there is no purple on the lip of that plant. The third form has flowers of about the same size as the preceding, but with very broad and very obtuse petals, and neither sepals, petals, or lip, have any purple at their tips. The fourth of the series is a small-flowered form, the flowers measuring rather less than 2 inches in expanse, with narrow sepals and petals, the petals in this form being only 4—5 lines in breadth, whilst in the other three forms they are 7—9 lines broad, the petals and the acute lip are tipped with mauve-purple, as in the second form above mentioned. The small flowered form, which Major-General Berkeley speaks of as "the common D. crystallinum," has more slender stems than the larger flowered forms. But if this small form is really the more common one in cultivation, then the typical form must be rare, for as Reichenbach describes the stems as stout, and figures it with large-sized flowers, having the sepals, petals and lip all tipped with purple, I certainly think that the first form I have mentioned above, which agrees with the typical description and figure, must be looked upon as the typical form of D. crystallinum, and it certainly is far and away the handsomest form of the series. The others may be looked upon as colour varieties, but I hesitate to give them varietal names, as in all probability there are other intermediate forms, and variations of this kind cannot be satisfactorily dealt with, without having a large series of forms to judge from. So think it better to wait awhile. *N. E. Brown.*

Orchis latifolia-maculata.

Natural hybrids among Orchids are now known to be exceedingly numerous, and one need not feel surprised to find them wherever closely allied species grow together. In the *Flora of Hampshire* a supposed natural hybrid between Orchis latifolia and O. maculata is described by Mr. Townsend under the above name. And now Mr. T. R. Archer Briggs sends to Kew specimens, gathered in a rough pasture field, near Plymouth, of what he believes to be a natural hybrid between the same two species. It appears that the specimens were found growing among numerous examples of the parent species, and were observed to be intermediate in character. They have the habit and long bracts of C. latifolia, but the large side-lobes of the lip, the numerous spots on the same, and the slender spur closely approximating to those characters in C. maculata. Specimens of the parent species were inclosed for comparison, and there is every reason to believe they are of hybrid origin as supposed. As the two species grow together and flower simultaneously, it is pretty certain that pollen could readily be carried from one to the other. *R. A. Rolfe.*

Allerton Beeches.

On seeing the Orchids recently at H. Tate, Esq., jun., garden at Allerton, Liverpool, a number of plants in flower were found. Amongst Cattleyas was the true C. Mossiæ var. Reineckiana (true), a healthy plant with five flowers, This is doubtless one of the gems of the genus. The largest flower on the plant was 7 inches in diameter. [A flower sent by our correspondent was quite this size. Ed.]. A plant of C. gigas var. Sanderiana had a five-flowered scape, whose flowers measured 10 inches across. Some excellent forms of Cattleya Mendelii were noticed, as well as several C. labiata var. Warnerii; Lælia purpurata alba, a very highly coloured form of L. grandis, and a well-flowered piece of L. elegans. C. Hardyana, a natural hybrid, were in fine condition, sheathing well, as were several plants of C. Dowiana var. aurea. Plants of Miltonia vexillaria of divers shades of colour were very fine. Cypripedium grande, C. Lowianum, C. superbiens, C. Lawrencianum, and others were well flowered. Dendrobium Dearii, a species difficult to manage, grows and flowers to perfection, indeed a few plants will produce flowers the year round. Flowering for the second time this season was noticed a good specimen of Dendrobium heterocarpum, which filled the house with its delightful scent. Masdevallia chimera, M. radiosa, M. Harryana var. splendens, M. cœrulescens, M. Veitchiana superba were in bloom, whilst a huge mass of Oncidium macranthum in the cool house will shortly unfold its gorgeous blossoms. Mr. Edwards, the gardener, is certainly a successful grower of Orchids. *F. A.*

SPRING FLOWERING MAGNOLIAS.

Among trees which bloom during the last days of April and in early May, none compare in the magnificence and profusion of flowers with those species and varieties of Magnolia which produce them in advance of the appearance of the leaves. They are all natives of China and of Japan, and all belong to or are derived from three species. Most of these plants have been known in this country for many years, and their perfect hardiness and adaptability have been abundantly demonstrated. They grow rapidly under proper conditions, and begin to produce their marvellous flowers when only a few feet high.

As no one ever sees a good plant of Magnolia conspicua in full bloom without being filled with admiration, and with the desire to possess such a wonderful object, their comparative rarity in gardens can only be explained by the facts that all these plants are rather difficult to transplant, unless it is done at the right time, and that they are fastidious about soil, and require clean and constant cultivation until they are fully established. The secret of transplanting Magnolias successfully consists in doing it as the leaves are opening; that is

in the case of these Asiatic species, just after the flowers have fallen. Magnolias have large, fleshy roots, which decay rapidly when they are cut or bruised, and do not, therefore, recover easily from transplanting unless the plants are moved at a time when they are in active growth, and so in a condition to make new root-growth rapidly. Magnolias moved early, while the roots are dormant, often suffer seriously, or do not start to grow again, so that by many people they are considered difficult trees to transplant, while in reality they are not, if the peculiar character of their roots is considered, more difficult to manage than other trees. They all dread drought, and do best in peaty soil. Drainage does not appear essential, and fine plants are developed in positions where the ground is saturated with water during several months of the year, and where it is never completely dry during periods of protracted drought. Such constant moisture is not, however, necessary to them, and very fine specimens may be seen growing in good, ordinary garden-soil. They love the same treatment as the Rhododendrons—a soil of peat, leaf-mould, sand and turfy loam deep enough to prevent dryness at the roots, and an open situation in the full sun, that the flowering wood may be thoroughly ripened. The ground about them should be kept clean and well cultivated for a few years after planting, and abundant space be allowed for the free lateral development of the lower branches.

It is now known—thanks to the intelligence of an American horticulturist—that all of the Chinese Magnolias grow more rapidly and make larger and more shapely plants if they are grafted on some one of the strong-growing American species. Magnolia acuminata and M. tripetala are used for this purpose in American nurseries, and each is preferred by different cultivators. Only plants grafted upon one of these species should be bought or planted, as they are unquestionably better than any others.

These Magnolias are naturally shapely plants, and they suffer from crowding. Indeed, their proper use is as single specimen plants, isolated upon the lawn or rising from the midst of broad masses of Rhododendrons, whose dark-green foliage makes a proper setting for the blooming but leafless Magnolias. The foliage, when it does appear, is rather heavy; the outline of the plants is bushy and compact, and they do not compose well with other trees, if brought into immediate connection with them.

The earliest to flower is the little shrubby Magnolia stellata (the M. Halleana of some American gardens), the last introduced into our gardens, and still very rare here. It has been so often described in these columns that further mention of it is unnecessary beyond the bare facts that it is perfectly hardy, that it flowers here soon after the middle of April, and that it is one of the most beautiful and desirable shrubs of recent introduction.

Magnolia conspicua follows M. stellata in time of blooming, its flowers opening here in ordinary seasons about May 1. This is the handsomest of the whole series in flower, and the most desirable, except that here in New England the flowering period is sometimes cut short by the north-east rain-storms, which often arrive simultaneously with the flowers; and that in climates where spring frosts prevail these early flowers are destroyed. M. conspicua is a shapely, round-headed tree, capable of reaching a height of 50 feet or more under favourable conditions. It is low-branched, the main branches dividing in many tortuous, branching divisions. The bark of the stem and of the main branches is smooth and ashy gray; that of the young branches is chestnut-brown. The flower-buds which are formed during the summer, are large, and protected during winter by thick, woolly, stipular sheaths. The flowers, with petaloid sepals, are pure creamy-white and pleasantly fragrant; they are cup-shaped, 4 or 5 inches deep, with obovate, mucronate sepals and petals 2 inches broad, and red stamens. They are produced in the greatest profusion, and quite cover the trees as with a white sheet. They are quickly followed by the leaves, which are obovate, contracted into a short, stout point, 3 or 4 inches long, downy when young on the lower surface, ultimately thick and deep dark green. The fruit is slender, often contorted, and 2 or 3 inches long. It is produced here abundantly.

Magnolia conspicua is a native of China, where it seems to be widely distributed from the neighbourhood of Pekin to Shanghai, and probably also of Japan, where it is very generally cultivated. It is the Yulan of the Chinese and of European gardens, and the M. Yulan of Desfontaines and some other botanists. An interesting account of this tree may be found in the *Mémoires concernant l'Histoire des Sciences des Chinois*, written by the early French missionaries at Pekin (iii., 441), from which it appears that the Yulan was cultivated under the dynasty of Tang in 627, and has since been always a favourite in the gardens of the imperial palaces and of the temples, and that young plants are used for the decorations of the imperial apartments in winter. It is the symbol of candour and of beauty; and a powder prepared from the green fruit is used to alleviate bronchial affections.

Magnolia conspicua was introduced into Europe as early as 1779, but it was much later before its beauty was appreciated and it became common in cultivation there. There seems to be no record of its earliest introduction into the gardens of the United States, and if there are any very large plants in the country they will be found, probably, near some of the large cities of the Middle or South Atlantic States. The best in the north are in the city of Newburg, where very fine symmetrical specimens may be seen, planted, no doubt, by Downing, or propagated in the nurseries which he early established there, and from which many good plants were sent into the gardens of this country.

Thunberg, who was in Japan from 1773—79, discovered there a small shrubby Magnolia, with slightly obovate or acuminate leaves, precocious fragrant flowers, with very small yellow or yellow-green, narrowly acuminate sepals and large acuminate petals, deep purple on the exterior, and creamy-white on the interior face. This is the M. obovata, variously known also as M. purpurea, M. discolor, and M. denudata. It was introduced into Europe a few years after its discovery. It is a hardy shrub, once a great favourite in gardens, although now much less commonly seen than formerly, having given way to that race of hybrids of which it is one of the parents.

The first of these hybrids dates from 1826. It sprang from a seed of a Magnolia conspicua in the garden of M. Soulange-Bodin, of Fremont, in France, of which the flowers had been fertilised with the pollen of M. obovata. Whether this hybrid was the result of chance or of intention is doubtful. Loudon (*Arboretum*, i., 278) speaks confidently of "accidental fecundation," but in the elaborate account of this hybrid, to which is joined the earliest figure, published in the *Annales de la Société d'Horticulture de Paris* (i., 90), it is expressly stated that M. Soulange intentionally hybridised the flowers of M. conspicua with pollen of M. obovata. It is now known as M. Soulangeana, and is almost intermediate between the two parents, except in habit, which is arborescent, and not different from that of M. conspicua. The leaves are intermediate in size and narrowly obovate, with the point of those of M. conspicua. The flowers are also intermediate in size, with smaller sepals than occur on those of M. conspicua, although still petaloid, and the sepals and petals are streaked, especially towards the base with purple. This plant, although far less beautiful in the colour of its flowers than M. conspicua, has the advantage of blooming a week or ten days later, and therefore at a time when storms and frosts are less liable to injure the flowers. It is as hardy as either of its parents, and produces fertile seeds.

A number of other hybrids between these species appeared in Europe about the same time as Magnolia Soulangeana, differing in the amount and in the shade of purple of the flowers, and especially in the size and shape of the sepals. M. Alexandrina and M. speciosa, according to Karl Koch, originated in the garden of M. Cels, a famous French patron of botany and horticulture, and M. Nortbertiana, another hybrid in that of Soulange-Bodin. The plant which grows here under the last name is remarkable for its small greenish-white acute sepals, hardly larger than those of M. obovata. The flowers are only faintly marked with purple, are small, 3 to 3½ inches deep, and are the last to appear, being fully a week later than those of M. Soulangeana, and between two or three weeks later than those of M. conspicua. The trees are as free-growing as the others, and equally hardy. Whether this is the variety originally distributed as M. Nortbertiana it is impossible to say, or to satisfactorily distinguish any of the various forms of these hybrids except the original M. Soulangeana. They vary little among themselves; descriptions when they can be found, are not reliable, and there are no coloured figures which can be depended on to refer to. Certain forms are known traditionally in certain nurseries or gardens under certain names, but such traditions are always misleading, and it seems hopeless, at least with the information available in this country, to do otherwise than call all forms with purple and white flowers varieties of M. Soulangeana, and drop the other names.

A hybrid of more recent appearance, and of doubtful origin, is, in some respects, the most interesting of the whole series. This is the plant known in gardens as Magnolia Lenné. Van Houtte, who published a coloured plate of the flowers twenty years ago, took it for granted that it was a hybrid between M. conspicua and M. obovata. He states, without further explanation, that it originated accidentally in Lombardy, where it was discovered by the nursery gardener, Turf, of Erfurt, who introduced it into Germany, naming it in honour of Lenné, the Royal Garden inspector at Berlin. The origin of this plant is not as apparent as that of M. Soulangeana, however—that is, it is not as clearly intermediate in characters between its two supposed parents. It is shrubby rather than arborescent in habit, with wide-spreading stems branching from the ground. The branchlets are much smaller than those of the other Magnolias of this class; the leaves are larger than those of the other species, they are broadly ovate or sometimes slightly obovate, and pointed at the summit, but quite destitute of the short contracted point found in those of M. conspicua and of M. Soulangeana. The flowers are the largest of the series, 3½ to 4 inches deep, with coloured petaloid obovate sepals, about one-half the size of the petals, which are broadly obovate, rounded at the extremities, fully 4 inches across, deep dark purple over the whole of the exterior surface, and pure snowy white in the interior. The flowers are deliciously fragrant, and the fruit and seeds, which are produced in profusion, are larger than those of either of the supposed parents. M. Lenné might very well pass for a very robust, large-flowered variety of M. obovata were it not for the petaloid sepals and the broadly obovate petals, which point to the blood of M. conspicua, and a probable hybrid—a solution which, however, is not altogether satisfactory.

Magnolia gracilis of gardens I have never seen, but, judged by the figure in Hooker's *Paradisus Londinensis*, t. lxxxvii., it is nothing more than a slender form of M. obovata.

The handsomest of the Magnolias with precocious flowers, and the finest of the genus, with the exception, perhaps, of the evergreen, M. grandiflora, of our southern forests, is M. Campbellii, a large forest tree, peculiar to the mountain valleys of Sikkim and Bhotan, at elevations of 8000 to 10,000 feet. The flowers are white or rose-coloured, and 8 or 10 inches across.

This species is apparently difficult to manage, although it has been cultivated for many years in different parts of Europe. It has flowered in a garden near Cork, in Ireland, where this tree is fairly hardy, but in northern Italy it has so far, I believe, failed to produce flowers, and I have not

heard of it blooming elsewhere. It is hardly probable that it has been introduced into the United States, although, owing to the more humid summer climate, it might be expected to flourish in some parts of the Gulf States, perhaps better than in southern Europe. *C. S. S., in "Garden and Forest."*

ROSA GIGANTEA.

We have already mentioned the discovery by General Collett, in Upper Burmah, of this magnificent Rose. Thanks to Dr. King, the Superintendent of the Royal Botanic Garden, Calcutta, we have been enabled to distribute some seeds of this Rose. To Dr. King also we are indebted for the opportunity of figuring the plant (see fig. 4, p. 13). The branches are provided with scattered stout hooked prickles. The nearly glabrous leaves bear two pairs, and a solitary terminal leaflet, all elliptic, acute, finely serrate.

The flowers are solitary, white, 5 to 6 inches across, with linear, nearly entire sepals, reflexed during flowering over the smooth ovoid receptacle.

M. Crépin, who has given a description of this Rose, and alludes to it in his paper read before the Rose Conference, suggests that it should be placed in the section Indicæ; but, if so, the characters of the section must be altered slightly to enable the species to fit into its proper place. M. Crépin also suggests that Fortune's Double Yellow may be a garden form of this species.

A HISTORY OF ENGLISH GARDENING.

(Continued from vol. v., p. 798.)

The Walnut was very common, and before being eaten was generally "piked clene," ground up with good herbes," and mixed "with verjuice and with water" (*Form of Cury*, No. 157). Quinces were generally "pared" and cooked, and made into a kind of marmalade (see *Form of Cury*, No. 18). Medlars were often stored up in straw, and allowed to get rotten before they were served up at table. Chaucer mentions this old custom in the Prologue of the Reeves Tale:—

> "But yet I fare as doth an open-ers;*
> That ilke fruit is ever lenger the wers,
> Til it be rot in mullock† or in straw.
> l. 17—19.

The same old author also describes the Medlar tree in full bloom:—

> "And as I stood and cast aside mine eye,
> I was ware of the fairest Medlar tree,
> That ever yet in all my life I see
> As full of blossoms as it might be;
> Therein a goldfinch leaping prettily
> From bough to bough; and as him list gan eat
> Of buddes here and there and flowres sweet."
> *The Flower and the Leaf*, l. 86

The kitchen gardens of the fourteenth century were also well stocked with vegetables. The chief vegetables cultivated by the agricultural classes were Onions, Garlic, and Leeks. Chaucer, describing the sompnour, in the Prologue to his *Canterbury Tales*, tells us that—

> "Well loved he Garleck, Onions and eek Leeks."
> l. 634.

Parsley and Colewort were also very commonly grown. The ploughman in Langland's *Vision*, says—

> "I have Percile and Porettes,‡
> And many Cole plauntes." l. 4373.

Peas, Chibolles (a variety of Onion), and Chervil are also mentioned as having been grown by the poorer classes:—

> "All the poor people then
> Pescoddes fetten and brought in their lappes
> Chibolles and Chervils."
> Langland, *Prs. Pl.*, l. 4389.

* The old name of the Medlar fruit.
† Rubbish. ‡ Leeks.

In the gardens of the wealthy, however, many more kinds were cultivated. The old cookery receipts of the fourteenth century, which are preserved in the *Form of Cury*, throw much light on this subject, indeed, nearly all our information of the kitchen gardens of this period is derived from this old collection. Among the "Salad herbs" that are mentioned (Receipt No. 58), as having been used Onions, Leeks, Parsley, Sage, Savory, Hyssop, Borage, Rue, Rosemary, and Purselain. Parsley and Sage were also used, as now, for stuffing chickens (Receipt No. 34). Chaucer tells us that "Persley" was eaten with the "stubbil goos" (*Cooke's Prologe*, l. 26), and in the *Form of Cury*, No. 68), it is directed to be mixed together with "Sauge, Hyssop, and Savory, Quinces, and Pears, Garlick and Grapes" as a "filling for gees." Beside these salad



Fig. 3.—Amorphophallus titanum at Kew.
(As it appeared on June 10. Height nearly 4 feet.)

herbs, Cabbages, Beans, Peas, Parsnips,* Turnips,† Radishes,‡ Cress,§ Fennel, and Mint were cultivated. The former of these vegetables, it is generally supposed, was not introduced into this country until the commencement of the seventeenth century. In the *Form of Cury*, however, the plant is mentioned,‖ and there is no reason to doubt that it was cultivated, and cultivated extensively, in England in the fourteenth century. From a passage in Chaucer's *Nonne prest his Tale*,¶ it would even appear that at this period it formed one of the favourite vegetables of the cottage gardener.

* *Form of Cury*, No. 10). † *Ibid.* No. 5.
‡ *Ibid.* No. 32.
§ See Rogers' *Agric. Prices*, vol. iii., p. 579.
‖ It is called "caboche" (No. 6), and is directed to be "cut into four quarters."
¶ Line 401—454. It is here called the wort. The mention of the butterfly settling on the Wort-leaf (probably the common Cabbage-white) is interesting.

Beans were commonly grown in fields, when the seeds were generally dibbled by women (see Rogers' *Agric. Prices*), but they were sometimes planted in gardens. The agricultural labourers ground them into flour, and made loaves of them—

> And two lovës of benes and bran
> Y-baked for my children.
> Langland, *Prs. Pl.*, l. 4368.

The wealthy "drew" (shelled), boiled, or fryed them, and ate them with bacon (*Form of Cury*, No. 1). Peas were also shelled, and were generally eaten as now, boiled with Parsley and Mint. The following is a fourteenth century receipt for cooking them: "Take Green Peson, clean washen, and let them boyle awhile over the fire, and then pour away all the broth, and bray (mash) a few of them with Mint and Parcel." (Arundel M.S., No. 344, f. 433). Sometimes, however, they were boiled with Onions, and made into a kind of peasoup (*Form of Cury*, No. 70). Mint and Fennel are both mentioned by Chaucer. Describing a garden, he writes—

> Then wente I forth on my right hand
> Down by a little path I found
> Of Mentes full and Fennel green.
> *Romaunt of the Rose*, l. 729-31.

The seed of the latter plant was very largely used for culinary purposes in the middle ages, and many entries referring to it are to be found in old accounts. In the *Wardrobe Accounts* of Edward I. (1281), for instance, "eight and a half pounds of Fennel seed" is stated to have been consumed by the King's household in less than a month. By the lower classes it was chiefly used to relieve the pangs of hunger on "fasting days." Langland records the following dialogue between a priest and a poor woman—

> "Hast thou ought in thy purse?" quod he,
> "Any hot Spices?"
> "I have Pepper and Pions," quod she,
> "And a pound of Garleek,
> And a farthing-worth of Fennel-seed
> For fasting days."
> *Prs. Pl.*, l. 3102-7.

The green leaves of the Fennel were also eaten. In an early English medical MS. it is said—

> Fennel in potage and in meat
> Is good to donne when thou shalt eat.
> All green look it may corvyn small
> In what meat thou eaten shall.
> l. 1354-7.

Mint was also very frequently used in medical cookery. In the *Form of Curry* it is specified, among other ingredients, for "Makerel sawse" (No. 106); for "Conger sawse" (No. 104); and for "Grene sawse" (No. 140). *P. E. N.*

(To be continued.)

COLONIAL NOTES.

JAMAICA.

The prize for the best sample of Tobacco, 400 lb. in weight, has been divided equally between Jamaica and North Borneo. The last number of the Botanical Department, Jamaica, contains a full account of the method of culture and preparation, from the pen of the late Mr. J. C. Espin, a Cuban, who was engaged in the culture in Jamaica.

SINGAPORE.

The annual Report of the Botanic Gardens, Singapore, has reached us. It is mainly occupied with details of the routine work of the garden, which show that the newly-appointed Director, Mr. H. N. Ridley, is alive to the duties of his office.

CAPE COLONY.

Professor MacOwan contributes to the Departmental Agricultural Journal an interesting article on Apple-scab and other diseases caused by fungi in Apples and Pears.



Fig. 4.—Rosa gigantea: natural size: flowers white. (see p. 12.)

Trinidad.

Mr. J. H. Hart, in the *Bulletin* of the Botanic Gardens, urges the planters to plant the Gros Michel Banana, as well as Oranges and other fruits. The Coffee grown on the Island is also highly spoken of, and is likely to form an important article of commerce.

Madras.

The *Proceedings of the Agri-Horticultural Society of Madras* reveal great activity in the development and improvement of the Botanical Gardens. The conservatory has been repaired, and greatly enlarged, the Fernery remodelled, a new Palm-house added, the water supply extended, and various other improvements effected by the munificence of some of the native aristocracy.

Humea elegans, &c.

A recent number of the *Victorian Naturalist* contains an interesting narrative of an expedition made at the suggestion of Baron Ferd. von Mueller to Croajingolong, a mountainous district south of the boundary dividing New South Wales from Victoria. In these ranges Mount Ellery reaches the height of 4300 feet. Over 300 plants were collected, the most interesting being the Cabbage Palm, Livistona australis, the Waratah, Telopea oreades peculiar to Victoria. Large quantities of Humea elegans were found, not stunted plants 4 to 5 feet in height, the maximum they attain here, but growing to a height of 20 feet and upwards; the delicate cream-coloured heads, tinged with a shade of salmon-pink and darker streaks of umber, are beautiful objects when seen standing out in front of a dense back-ground of Ferns, &c.

Foreign Correspondence.

RAMONDIAS.

In a recent issue "D." asks if R. serbica is equal in beauty to R. pyrenaica. On a rocky part of my alpine garden there are about 150 plants of R. pyrenaica, R. p. alba, R. serbica, and R. Nataliae, growing together, R. pyrenaica of many shades of purple, even R. p. alba sometimes with a reddish tint. R. serbica is less vivid in colour, but robust growing, and very floriferous. R. Nataliae is of slower growth, but not less good in colour. On the whole, if I could only cultivate two Ramondias, I would prefer R. pyrenaica and R. p. alba to the two last named species. There is still a fourth Ramondia known to botanists, R. Heldreichii, from Mount Olympus, in Thessaly, discovered many years ago by Professor v. Heldreich, of Athens, but not yet cultivated. *O. F., Lehenhof.*

Cultural Memoranda.

GLADIOLUS THE BRIDE.

No one having a greenhouse, conservatory, or rooms to furnish in the months of May, June, and the first fortnight in July, should be without this beautiful and useful plant. I have now, and have had for several weeks past, a fine display of the plant. The bulbs are in 48's and 32's, each pot containing from ten to fifteen spikes of nicely developed flowers, which are pure white. The spikes, when arranged with Fern and coloured flowers, in large vases, prove very effective. By a little forcing the plants may be had in flower in April; those grown on in a cold pit, and in a sheltered position out-of-doors continuing the supply during the periods indicated. From ten to fifteen bulbs should be potted in November, in 32's. They should be efficiently drained, and filled to within 2 inches of the top with a mixture of four parts good sandy loam and one of old hotbed manure, made moderately firm before placing the bulbs thereon, covering them with a little more than 1 inch thick of soil. The pots should then be stood on coal-ashes in a dry situation, and covered with a few inches of the same material. The pots should be examined early in spring, and as soon as the bulbs have made 1 inch of growth they should be removed to a cool-pit, and shaded for a few days until the plants get inured to light. As the plants increase in growth, more frequent supplies of water should be given them at the roots, giving liberal waterings with weak liquid manure from the time the flower-spikes appear until the flowers are opened, and afford support to the flower-spikes.

Spiræa (Astilbe) japonica.

This plant is so well appreciated by all who have to maintain a supply of cut flowers and decorative plants during the early spring months, that I need not refer to its merits as such; but as a subject for supplying a profusion of shining green Fern-like foliage, surmounted by large spikes of white feathery flowers in a border out-of-doors during the months of June and July it is not so well known, and consequently not so much grown as it deserves to be. After the forced plants have flowered, and been gradually hardened off, the plants should be turned out of the pots while quite moist at the roots, the drainage removed, and the plants transplanted in a deeply dug soil, enriched with short manure. They are best when put out in rows from about 18 inches apart, and an equal distance from one plant to the other. A portion of the stock of plants should be put in a border having a south-west aspect, and the remainder in a north border, so as to have a succession of flowers during the month of July. The plants, in the absence of rain, should be kept kept well supplied with water, they being moisture-at-the-roots-loving plants. The second year, after being planted out, they will flower, and a very chaste and telling effect is then produced by a hundred or two large plants thus grown. Where there are any plants which have been put out under a "south wall" to harden off while being starved at the roots for want of moisture and scope for root action, it is not yet too late to treat them in the manner above stated. *H. W. W.*

EUCALYPTUS AMYGDALINA.

[See Supplementary Sheet.]

Our supplementary illustration represents the base of a tree stem, standing as it grew, turned into a dwelling by a Colonial squatter. The photograph, from which the figure was prepared, was kindly furnished by Baron Ferdinand von Mueller, Melbourne, and was taken by Mr. N. T. Caire of the same city. The size of many trees of this species of Eucalypt, which stand singly at long distances apart, from Dandenong to West Gippsland, is oftentimes immense.

In a letter of Mr. J. Rollo's, of Balnarring, forwarded by Baron von Mueller, it is stated by the writer that in the Yarragon district he has measured trees which were from 330 to 340 feet in height, and in a valley of the southern range of mountains where the trees acquire even greater size, one was measured which reached the enormous height of 410 feet. Blue Gums (Eucalyptus globulus), grow to 300 feet in height in the same neighbourhood. Some of these giants of the Australian forests must have passed away unnoticed; and in the case of E. amygdalina, whose wood is not very durable, this would more readily occur; and the foliage being of a very oily nature, forest fires would be particularly destructive of standing timber.

We should suppose that the settler who made this particular tree stump into a hut, selected it by reason of the decayed condition of its inner parts; for we can scarcely suppose that he would dig out the space required if the wood was solid.

TRADE MEMORANDUM.

The Erfurt firm of Haage & Schmidt, nurserymen and seedsmen of world-wide repute, has passed into the possession of Herr Carl Schmidt, formerly one of the acting partners, by whom it will in future be carried on.

Plants and Their Culture.

Warm-house Plants.—Most of these will benefit greatly if stood wide apart, so that full development of leaves and shoots may go on unchecked; and in the case of Palms, Dracænas, Pandanus Veitchii, and others, they may be removed to the greenhouses, where, with due attention to watering, they will continue to grow freely, besides being found useful for decoration. Abundance of moisture must be distributed about the houses during warm days, shading the plants must be attended to early in the day, and red-spider kept in check by heavy syringing, which entails much less labour than sponging the foliage during hot weather. The temperatures given last month will be applicable to the present time, but giving a larger amount of ventilation. During the hot weather the heating apparatus should be allowed to cool as early in the day as possible; but it is not advisable to do without fires entirely, as during cloudy weather the temperature will fall, and growth is then checked, especially if the water used is cold as well. By the use of a small amount of heat in the pipes, air may be admitted at all times. Any Palms, Dracænas, or other plants which have filled their pots with roots should be shifted as soon as possible, but over-potting the plants ought to be avoided, more especially the Palms; it it is better to afford occasionally manure-water to these, than to over-pot.

Crotons need especial attention to keep down red-spider, and to this end syringing should be performed often, and on the undersides of the leaves. These plants delight in much heat and moisture. Anthuriums should have their foliage sponged, if red-spider be present, or the young foliage will be disfigured. These plants grow best in a warm moist atmosphere.

Tuberous Plants.—Achimenes, which were potted at an early date, will take liberal supplies of water, and should have the tops of their shoots stopped. These points may be propagated in a hotbed if more stock is required. Train out all slender growers so as to allow the plants in the centre of the pots and pans light and air. Gesneras and Tydeas should be kept near to the light, and should not be syringed, as this would soon disfigure them. Dipladenias should now be in flower, and will require to be liberally supplied with weak liquid manure, and syringed frequently, or red-spider will become troublesome. In case any plant should become infested with spider, employ at once an insecticide.

Climbers.—Succession plants of Stephanotis making growth should have every assistance. Clerodendrons, which have flowered, may have their old flower-trusses removed; and if large specimens are wanted, the plants should be shifted into larger pots, the compost used being turfy-loam, a small amount of fibrous peat and decayed manure, and some quarter-inch bones, and sufficient coarse silver sand to make it porous. The plants do best in a place near the light, and where the young growths can be tied up to the roof. They make rapid growth after being removed from the cool house where they flowered. No training is needed, only so far as to regulate the shoots and avoid entanglement. Gloxinias requiring a shift into larger pots should receive attention, and be kept in a light house. Seedlings of these plants should be pricked off into pans or pots, and any named or good varieties, which it is desirable to increase, may now have some of their well-developed leaves, placed in a pan or pot of peat with a thick surfacing of silver sand. If the stock be limited, the leaves should be placed flat on the surface, underside downwards, and be pegged down, breaking the ribs of the leaf first. *G. Wythes, Sion House, Brentford.*

The Orchid Houses.

Keeping down the temperature and rendering the atmosphere fairly humid and comfortable are the important matters to be attended to during the hot weather we are getting, and are likely to get. Careful and evenly balanced top and bottom ventilation, careful shading whilst the sun is on the house, and a liberal and frequent damping down several times a day, are the best methods of securing the desired end. The grower should learn to regulate each house in these matters, as different houses require different handling. In no case in hot bright weather is it desirable to put on too much air, or excessive evaporation will ensue, and shrivelling in the

tissues of the plants sets in. There is a class of Orchids which may specially be mentioned as being readily damaged by excessive ventilation in hot weather, and in some kinds of houses. I refer to the whole of the Huntleya group, comprising Bollea, Pescatorea, &c., all Phalænopis, Miltonia vexillaria, M. Roezlii, and M. Warscewiczii; the Paphinias, Coryanthes, and others usually associated with these; these pass the summer best in a position cool, shady, and tolerably moist, and free from currents of air. The Oncidiums generally, and Lælias, Cattleyas, and intermediate-house Epidendrums, are not so easily affected by sunlight and a liberal admission of air in summer, but in all cases it is better to restrict the opening of the ventilators to that extent which is necessary to secure what gardeners call a "comfortable air" in the houses. In excessively hot weather a damping down outside the houses lays the dust, and at least does no harm, and syringing the outside of the blinds occasionally helps to keep down the temperature; but in all work requiring the use of water, the rain-water should be saved for watering the plants; and for cleansing and other uses, water from other sources obtained. Above all things, the shading and watering of the plants should be attended to.

Fire-heat now is only wanted in the house where are Phalænopsis, growing Dendrobes, and other plants known to make their growths in summer, and on these and all the other houses a little ventilation top and bottom should be left on all night. The temperature for July, as nearly as it can be attained, should be:—Warmest-house, 75° to 85° by day, 70° at night; intermediate-house, 70° to 80° by day, 65° at night; cool-house, 60° to 70° by day, 55° at night. *James O'Brien.*

The Flower Garden.

Bedding Plants and Watering.—I always strive to put off watering the flower beds as long as it is possible to do so without risk, knowing that so long as there is moisture below the roots these will go in search of it, whereas slight waterings cause the roots to ramble just under the surface of the soil, and injury to the plant is then certain to occur should there be in dry weather any break in the regularity of the supply. The prevalence of drying winds and bright sunshine has now rendered watering a necessity, and a thorough watering twice a week, so long as the present drought continues, must be afforded to bedding plants; I say "twice a week," but this does not mean that the application of water to the plants oftener is not desirable; it is, but only in the form of overhead syringings in the cool of the evening. Given this spray over, and two thorough root waterings in a week, and bedding plants are sure to make satisfactory growth. The same remarks apply to the watering of shrubs, except that it is not necessary to do it so frequently, because the thick mulching of manure that is—or should be—afforded to the roots of these, if lately transplanted, will keep the soil more evenly moist than the slight mulching of cocoa-fibre that is sometimes put around bedding plants. The drought is beginning to tell on most of the recently moved shrubs, and a good watering and a renewal of the mulching, with an occasional overhead syringing in the evening, will be needed.

Subtropical Bedders.—These for the most part consist of seedling plants, and of rapid growers, and therefore need not only deep and rich soil, but much moisture. The dwarf ground-work plants serve to some extent as mulchings to the taller subjects. Water should, therefore, be afforded them without stint, so long as the dry weather continues; and all tall-growing plants which are likely to suffer from wind should be kept carefully tied to stout stakes; and if a compact rather than an excessively tall development of the plants be desired, pinch out the points of the leading shoots. This will apply to Abutilons, Acacia lophantha, Hemp, Eucalyptus, Tobacco—in fact, to all kinds which bear to be pinched. The shoots of Ricinus are seldom stopped, and yet if this be performed, the plants in some positions are benefited thereby.

Herbaceous Plants.—These also must have water, but generally they are left to take their chance; but there is a growing disposition amongst gardeners to give them treatment equal to that afforded the summer bedders. Phloxes, Asters, and many other plants that have yet to flower will do so very indifferently if not watered during the present drought. Keep all kinds of plants free of decaying flower and seed vessels. *W. Wildsmith, Heckfield House, Winchfield.*

Fruits Under Glass.

The Permanent Fig House.—The fruits here will now have been gathered, and the fruits of the second crop should be thinned, and the shoots tied out. Syringe the trees twice daily, and especially when standing in dry parts of the house, and if, in spite of this the red-spider should begin to infest the foliage, a remedy should at once be applied. One ounce of carbolic soap dissolved in 1 gallon of warm soft water makes a capital wash for this purpose, care being taken to wet all parts of the foliage. Water the borders thoroughly, employing manure-water at intervals of ten days, and clean water at other times. Maintain a moist atmosphere, and a little fire-heat will be necessary at nights to keep up the required temperature, affording plentifully, air by day, and closing for a short time only in the afternoon. During the night a moderate amount of ventilation should be allowed, to be increased at an early hour in the morning. Where fruit is ripening, the trees should have a good watering, and afterwards a mulching of dry stuff to retain the moisture in the soil, and more water must be applied after this mulching is laid down; and the first thing in the morning of bright days is the best time for the doing it; but first gather all the fruit that is ripe.

Muscat and other Late Grapes.—The bunches should be examined for small berries, cutting these away carefully; the laterals should be stopped once or twice a week; air should be admitted to the houses freely during the day, and at night a little, and increased a small amount also at 6 A.M., if the day is bright; and this morning ventilation will be found very beneficial to the colouring and development of that useful Grape, Lady Downe's. The air in the houses should be kept moist by damping the paths and beds several times daily; and very little, if any, artificial heat will be required, except in very dull or rainy weather.

Grapes in process of ripening should be well ventilated, the paths and borders sprinkled morning and afternoon; but care should be taken that this surface wetting does not lead to the neglect of a thorough soaking of the soil whenever this becomes necessary.

Pot-vines, and those newly planted, should have abundance of ventilation, so that short-jointed canes may be made, and the wood matured in due season. Stop the laterals at the first or second leaf, according to the strength of the vines. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Watering and Mulching Trees.—These important aids to success in fruit growing should be attended to now that the weather has become dry and warm. Those trees which may be fruiting heavily are the first to require attention, and then any which may not be making satisfactory growth. Prick up the surface soil about the roots of stone fruit trees on walls, these being usually the first to suffer from want of water at the roots. Over the soil of the border spread a good coating of rich manure, and follow this with a thorough watering; and should manure not be obtainable, water-in a small quantity of guano, or dress with soot occasionally, and after each watering cover the watered part with a little dry earth. Trees lightly cropped, or those making very strong growth, will be all the better if left unwatered and unmulched, but repeatedly syringing the foliage to keep it clean.

Fig Trees on Walls, &c.—These should be examined, and all superfluous shoots cut away, reserving only those which may be required to fill up blank spaces, and for next year's fruit. These latter should be short-jointed and compact-looking shoots, that have reached the limits of their growth. Gross growing shoots may have the points pinched out, but pinching is not needed when the wood is short jointed, and it is required to extend the tree. Remove suckers from the roots, but do not lay them in on the wall, as better fruiting wood is obtained from that which springs from the stems. When the roots are limited to a narrow border (as they should be in rich soils), a mulch, followed by a drenching of manure-water, will give the needful assistance to the trees when the fruit is swelling, but where growth is strong, use clean water. *H. Markham, Mereworth Castle, Kent.*

The Kitchen Garden.

Watering Crops.—This is a necessary evil in continued dry weather, and it is not unattended with ill consequences, for it resembles the operation of dipping a man in a bath and setting him before a strong fire directly afterwards. To mitigate these effects before giving water to the vegetables, the surface should be loosened with a fork or hoe, and the water applied from the spout of the water-pot, and giving sufficient to soak the soil about the roots; and if mulching materials are at hand, a few inches in thickness may be spread over the soil to prevent evaporation and the baking of the surface. Where mulching is not used the Dutch hoe should be brought into use before the surface hardens.

Late Crops.—Remove the remains of crops which are past, digging the ground in readiness for Turnips, Cabbage, Lettuce, Endive, &c. Savoys, Brussel Sprouts, Broccoli, and Kale may be set out on ground previously under crops of Peas and Potatos. To keep Peas long in bearing, it is requisite to pay strict attention to picking the pods, which should all be picked of about one size, and not allowed to remain after the seeds have become half grown, or the flavour is lessened and the plants weakened. To keep the plants in full bearing, applications of weak manure-water, with a few handfuls of soot added may be afforded at short intervals of time.

A mulching of short manure, or, failing that, grass may be laid out along the rows. In warm gardens a sowing of early varieties of Peas may be made, which in the event of a fine autumn will prove of value.

French Beans.—The pods must not be allowed to grow to a very large size before picking them, else the plant will soon fail. Make a sowing on a border facing the south, or at the foot of warm walls, where frames and sashes may be employed for the protection of the crops; and where this cannot be done, pits or frames may be sown after we have reached the middle of the present month. Water these varieties, and also Scarlet Runner Beans, with weak dung-water, and mulch when possible.

Turnips.—A good breadth of these should now be got in for winter consumption. A moderately light soil meets their requirements, and shallow drills at a foot apart will suit strap-leaf varieties, but a distance of 15 to 18 inches will be found to be better for Tennis-ball, Mouse-tail, Veitch's Red Globe, and White Stone. Chirk Castle variety is excellent, and keeps well. Thin Turnips before they get large, so as to keep the plants sturdy.

Leeks.—The main crop should now be planted, remembering that manuring for this crop cannot be overdone.

Cabbages.—Seeds of Stuart & Mein's No. 1 and Ellam's Early Dwarf Spring may be sown, but the main crop should be deferred for the present.

Lettuce and Endive.—If sowings of these have not been made, seeds should now be sown in drills—Cos Lettuce at about 10 inches. Cabbage varieties about 12 to 14 inches apart. The larger growing Endives should be sown in drills 18 inches apart; and when large enough, the plants should be thinned out to like distances in the rows, the thinnings being planted for successional crops.

Cauliflowers.—A few more plants may be put out in rich soil where growth will be rapid, and where, in the event of a mild autumn, they will come in particularly useful.

Onions.—In cold soils, and late districts, it is advisable to sow these after the middle of July, otherwise the second week in August is soon enough; but to make sure, it is better to sow twice.

Asparagus.—The last cutting for the season should now be made, the plants being encouraged to make a strong growth, and to this end frequent and light sprinklings of salt may be made on light land, and during dry weather copious waterings with dung-water. Where the soil is of a heavy character, salt or strong manure should not be given, frequent dressings of artificial manure being preferable. To prevent cracking of the soil, place a slight mulch of leaf-mould over the beds. Attend to the tying of the stronger shoots to stakes, and when seeds appear pick them off. *Wm. Baillie.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, JULY 9 { Royal Horticultural Society: Fruit and Floral Committees at Chiswick.

SHOWS.

TUESDAY, JULY 9 { Chiswick (in conjunction with the Royal Horticultural Society.) Diss. Hereford. Portsmouth.

WEDNESDAY, JULY 10 { Royal Caledonian. Ipswich. Tunbridge Wells. Ealing. York Florists. Brighton and Sussex. Dursley.

THURSDAY, JULY 11 { Gloucester. Bury St. Edmunds. Stamford.

FRIDAY, JULY 12—Alexandra Palace.

SATURDAY, JULY 13 { Eltham. New Brighton.

SALES.

WEDNESDAY, JULY 10 { Leasehold Florist's Business, Nos. 1 and 2, Ladbrook Grove, and 10, The Mall, High Street, Notting Hill, at The Mart, by Protheroe & Morris.

FRIDAY, JULY 12 { Imported and Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—63°.3.

The Rose Conference at Chiswick.

In spite of various hindrances, such as the novelty of the undertaking, the season, and the visit of the Shah, the Exhibition and Conference were successful; certainly not as to the number of visitors, nor as to the enthusiasm at the practical and scientific meetings, but at least they were so as regards the quality and variety of the exhibits, and the importance of the papers read. In fact, it could not well have been otherwise, when the two Pauls, a Prince, one or more Cants, a Turner, a Bunyard, and sundry others were among the exhibitors. Hybrid perpetuals, Teas, Hybrids of all sorts, climbing Roses, and old fashioned Roses were largely shown, while never before has so interesting a series of species and curiosities been got together. In reference to the latter, every visitor with the merest smattering of botanical knowledge, or the faintest conception of the marvellous undeveloped power in these species for further and more perfect evolution, must have been deeply impressed with the immense capabilities that Nature has provided for the profitable use of the cultivator.

Looking back for a quarter or half a century on the improvement and multiplication of Rose varieties, and the development of size, improvement of form, substance, and colour, and reflecting that all these advances over the original types of Rose have been achieved by the aid, principally, of two, and certainly of not more than half-a-dozen species, how much may we not expect in the future, when our great rosarians and our botanical establishments turn their attention to the number of untried species?

There are about sixty species of Roses at the disposal of hybridists. These species do not merely exist on paper, nor within the seclusion of herbaria, for a large number of them were to be seen, smelt, and studied at Chiswick. Had the Rose Conference, at which the Royal Horticultural Society and the National Rose Society loyally co-operated, done nothing more nor better than bring together so many Rose species, and almost extinct varieties, they would yet have given a more powerful impetus to Rose culture and progressive improvement than has been effected by any Rose show of the ordinary character that has yet been held. But it is not only that we have more species to work upon, but we have a more numerous and enthusiastic band of rosarians than ever before. A better proof of this cannot be given than the circumstance that two or three leading rosarians contributed to this Conference over 600 distinct exhibits, while many others with lesser opportunities also sent liberally Roses both new and old.

The two PAULS, whose botanical knowledge of the Rose almost equals their practical success as growers, largely contributed to the show. Mr. GEORGE PAUL exhibited 150 Perpetuals, 50 Teas, 12 hybrid Teas, 12 climbing Roses, 18 garden Roses, 6 Polyanthas, to say nothing of the admirable series of wild species, from Kew and elsewhere, noted in another column. Mr. WILLIAM PAUL'S collection was hardly less numerous.

Another most hopeful augury for the future of English Rose growing is the number of good Roses from seeds and sports now raised in England, to say nothing of the number of good pedigree Roses raised by Mr. BENNETT and others. Mr. WILLIAM PAUL made a most interesting exhibit of his own seedlings at the Conference, among which we may notice specially —Masterpiece, May Quennell, Peach Blossom, Pride of Waltham, Princess Beatrice, Queen of Queens, Queen of Waltham, and Silver Queen. Here, too, may be mentioned Duchess of Albany, a deep coloured sport from La France; Beauty of Waltham, a bright cherry-coloured Rose; and Star of Waltham, a deep crimson of great size and excellent constitution, and both with fine foliage.

With such masses of material in hand, and the enterprise and intelligence already in operation, what may this conference not be the means of effecting in stimulating progress and extending knowledge? Adverting, for instance, to the Rosa mundi and the York and Lancaster, both of which were shown by various growers: it seems possible to have the perpetuals, Teas, Noisettes, and other Roses of the future flaked, barred, mottled, laced or edged, like Carnations and Picotees, or fringed like a Chinese Primrose. Some recent breaks, such as Pride of Reigate, show that flaked or blotched perpetuals are quite within the grasp of modern cultivators.

Another great advantage which will accrue from the Conference will consist in the saving from extinction of many of the old garden favourites. No modern Roses can hope to fill the place in the hearts of the older Rose growers that the old-fashioned sorts do, and which for fragrance, longevity, and power of bearing up under neglect, surpass most of their more tender, short-lived successors. Lord PENZANCE in his paper at the conference alluded to this point, and all unconsciously seized on the very points and aims which the promoters of the Exhibition had in view.

Sir TREVOR LAWRENCE, at the dinner, alluded to some of the chief defects of modern Roses, and turned the laugh against the Dean, familiarly known as REYNOLDS HOLE, who, in an unguarded moment attempted to uphold the staying power of Rose flowers in comparison with those of Orchids. But the Rose bushes themselves die all too soon as well. We have heard of private gardens in which five or more hundreds are yearly planted to keep up the stock. Such wholesale and sudden deaths should be unknown, and possibly the remedy may be found in reverting to older—or, perhaps newer species and varieties.

There is, moreover, great room for improvement in the foliage as well as in the flower. By availing ourselves of fine-foliaged species, such as rugosa, as M. BRUANT has already done, great advances may be made; while Lord PENZANCE'S experiments show what may be done by infusing the odour of the Sweet Brier into the foliage of garden Roses.

The constitution of many of our Roses—La France and Maréchal Niel, for instance —needs strengthening. What so likely to give it as the infusion of the blood of stronger and more vigorous species. And by the employment of such open cup-like flowers as rugosa, it may be possible to furnish exquisitely-formed Tea and other Roses with guard-petals of similar or contrasting colour, and not a few admirers of La France or Madame Cusin might gloat over their favourites the more fondly were each set, as it were, in a saucer of Rosa rugosa alba.

We have neither space nor time to do more than advert to some of the exquisite combinations of colour secured in the arrangements of some of the boxes; suffice it to mention a box in which the flowers of Niphetos were exquisitely blended with those of Madame de Watteville, and which formed one of the loveliest combinations we have ever seen.

A most interesting and a most hopeful sign in connection with this function was the co-operation with the old Society of the National Rose Society, and especially of its indefatigable Secretary, Mr. E. MAWLEY. At the dinner, at which Sir TREVOR LAWRENCE presided, supported by Dean HOLE, M. DE LA DEVANSAYE, and about sixty others, although not too much was said for the National, who were the guests, decidedly too little was said for the hosts—the Royal—in whose garden the show was held; but this was, probably, a mere slip, and we trust that this illustration of good fellowship may lead to a closer federation of all the kindred societies under the headship of the parent society.

A few suggestions may be added for the organisation of future conferences. First, whatever the cost, they must be much more widely advertised. How many of the vast population residing within a mile of the garden? how many of those dwelling on all sides within ten minutes railway ride, ever heard that such a thing was even proposed? Ealing, Richmond, and Chiswick alone might have filled the tents with visitors.

Then as to the Conference, the papers were for the most part admirable, and some of them epoch-making in the history of the Rose, but it would be difficult for proceedings to have been more dreary. All this might have been avoided, if, instead of reading prosy sermons, the writers had been invited to pick out the substance of their papers, and explain it by word of mouth. Abstracts, too, of the papers should have been circulated beforehand amongst those competent and likely to take part in the discussion. On the second day when the auditory was exceedingly small, the discussion was perhaps more important and more lively than on the first day. Sir DIETRICH BRANDIS, Sir ALEXANDER ARBUTH-



GIANT GUM TREE (EUCALYPTUS AMYGDALINA)

USED AS A DWELLING IN GIPPSLAND VICTORIA.

not, Mr. Fish, Mr. Bunyard, and others contributing some valuable information to the meeting.

Lastly, we sympathise with the Society in its financial difficulties, and few know better how it is crippled in its desires to do more, but none the less we feel that the delay in publishing the really admirable papers it has had read before it this season, and the withholding them from the horticultural papers, is a fatal hindrance to the development of that general interest in the welfare of the Society and its proceedings, which all of us are so earnest in our desire to cultivate.

Dublin University.—On the 27th ult. a meeting of the Senate was held in the Examination Hall, Trinity College, for the purpose of conferring degrees. The following was the oration of Professor Palmer in presenting Mr. Burbidge for the degree of M.A. (Hon.):—"Honoratissime Vice-Cancellarie, totaque Universitas—Duco ad vos Fredericum Guilelmum Burbidge, cui primo, ut par est, apricos flores laudis meae nectere jubeor. Nam, ut scitis, in arte et scientia herbaria hic vir plane egregius est. Huic "suaves daedala tellus summittit flores" docta benignaque manu colenti. Narcissus, ille sui mirator, huius cura ac manibus se formosiorem factum aspiciens obstupescit. Quid de Iaponiae gloria, floribus auri colorem aemulantibus loquor, quos nutricare et educare hic ut nemo, callet? Litterarum quoque flosculos feliciter coluit. De hortis Solis jucundissimum librum scripsit quo situs, caelum, fructus ultimarum orientis insularum belle depinguntur. Hortos Kevianos olim, nunc nostros servat. Et mehercule consentaneum videtur, cui solis Hortos adire contigerit, Hesperidum custodire. Custodit vero fide serpentis illius fabulosi, et si formidine minor; quippe cuius bonitatem saepe expertae sint matronae puellaeque quotiens, quod minime necessarium, floridum decus nativae formae addere expetunt." The original would be spoiled by translation, even if busy editors, with their heads full of Rose Conferences and Exhibitions, could find leisure to devote to it; suffice it to say, that it very wittily and elegantly calls attention to the services of Mr. Burbidge, whose labours have been such that Narcissus admiring himself, as is his wont in the mirror, would be astonished at what has been done for him by the art and skill of Mr. Burbidge. Reference to Mr. Burbidge's cultivation of the flowers of literature is made in the allusion to his *Gardens of the Sun*, the title of his most delightful book of Bornean travel. The orator deems it fit that he who has had the good fortune to visit the Gardens of the Sun should preside over those of the Hesperides. Allusion is made to Mr. Burbidge's training at Kew, and we should have been pleased had reference been also made to his longer sojourn at Chiswick; but that word Chiswick would not be easy to Latinise successfully! By the way, should not the Professor of Poetry be commissioned to turn into English verse the elegant locutions of his colleague? It might be a comfort to English readers.

"Annals of Botany."—The last issued part, dated February, but not received till the end of June, is devoted to a botanical "necrology" for 1888, comprising brief biographical details, together with lists of the principal works and memoirs of the deceased botanists. The list of De Bary's publications extends over four pages, that of Asa Gray over thirteen. The latter portion of the part comprises a very full list of the publications of the year, both separate books, periodicals, and transactions of learned societies. The *Annals* is thus justifying its title in a very satisfactory way. It is edited by Professors Balfour, Vines, and Farlow, and published by H. Frowde, Amen Corner.

Hooker's "Icones."—The last issued part contains numerous illustrations of Indian Orchids, described for the *Flora of British India* by Sir Joseph Hooker. Most of them are of purely botanical interest, but some, such as the Chinese Tainia macrantha and T. cordifolia, should be looked after by nurserymen.

Royal Horticultural Society.—Meetings of the Floral and Fruit Committees will be held at Chiswick on Tuesday next, the 9th inst., in connection with the annual show of the Chiswick Horticultural Society (which promises to be a good one), when it is hoped that exhibitors of novelties will come forward.

Royal Botanic Society.—At the Evening Fête which passed off satisfactorily on Wednesday last, there was a very large attendance of visitors. Table decorations were shown as usual, but, with only one or two exceptions, they were not of much merit.

Prof. Reichenbach's Will.—Now that the first feeling of annoyance has passed off, and that Orchidists are beginning to find out that, thanks to the resources of Kew, the inconvenience will, by no means be so great as at first feared, we can afford to laugh at the ludicrous aspects of the case. Our German friends are far more irate than we; they speak of their compatriot as an old nightcap, "*mütze*," and see in his testamentary dispositions the hand of Bismarck! How droll we should think such a remark if Lord Salisbury were accused of inspiring the will of a learned professor; but under a paternal government we suppose such an incongruity would not be felt.

"Bulletin of the Belgian Federation of Horticultural Societies."—The volume published in 1888 (but nominally belonging to 1886) contains the continuation of M. Devos' list of garden plants, with an Index. This is so valuable, that now that the whole is complete, we trust it will be issued separately. As a list of cultivated plants and their introducers, it is invaluable.

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee took place at the Caledonian Hotel, Adelphi, on the 28th ult., Mr. George Deal presiding. The minutes of the last meeting having been read, the Hon. Sec. reported that the last two investments of £500 had been effected, the total sum in the fund being £2500. The Hon. Sec. reported that the income of the fund from all sources during the last financial year, which has just closed, amounted in round numbers to nearly £2000. Of this sum nearly £350 was in the form of annual subscriptions, £900 or so as donations, £260 from local secretaries, £45 as interest, and £400 from miscellaneous sources, including the Covent Garden *Fête*. It may be again mentioned that the annual election and dinner takes place on Friday, July 19, at the Cannon Street Hotel, the election at 2 p.m., and the dinner at 5 p.m., at which Sir Julian Goldsmid, M.P., the President, takes the chair, and the committee are desirous he should be largely supported on this occasion.

Eucharis Lehmanni.—This is a new species, described by Dr. Regel in the *Garten Flora* (t. 1300, June 15). It is like E. candida, but has a much broader leaf, more numerous flowers on shorter stalks, staminal cup deep filaments three-lobed, two lateral lobes lanceolate, central one filiform, anther-bearing. It is a native of Popayan, whence it was sent by the collector, whose name it bears.

Tomato "Ham Green Favourite."—This may be called a rival to the well-known Perfection type. As noted recently, growing in pots at Chiswick, it was remarkable for its fine red, smooth, solid fruits; it is withal of good flavour, and a free bearer. The variety is now in commerce, being distributed, we believe, by Messrs. James Veitch & Sons.

Flowers in Season.—From Mr. T. Ware's garden at Tottenham come some lovely Lilies, viz., L. pardalinum angustifolium, a flower of crimson and gold, brown spots being scattered thickly over the latter colour. It differs from the type only in its narrower leaves. A still more showy kind is L. p. carminatum, in which the flower segments are much less reflexed, making a flower 5 inches in diameter. The yellow colour is lighter than in the first-named, and crimson approaches to scarlet. L. p. luteum has flowers of an orange colour, spotted as in the others on the lower half of the segment of the flower. L. elegans Van Houttii is like the commoner L. umbellatum, but with smaller flowers, which are of a darker-tinted crimson colour. Messrs. H. Cannell & Sons, Swanley, send some fine blooms of Canterbury Bells, in which the calyx is so much increased in depth as to make a double flower. They are massive and handsome flowers, and the plants strong growers. Fine plants for bold masses in beds and borders. A number of Violas in a variety of shades of blue, violet, purple and yellow, and white, come from Messrs. Dobbie & Co., Rothesay, N.B. Accompanying these were flowers of Sweet William, with novel and pleasing colours and markings.

Fungi.—We learn from *Nature* that "the large herbarium of fungi, transferred by Dr. M. C. Cooke to the Herbarium of the Royal Gardens, Kew, is now for the most part incorporated with the previous collection. The total number of specimens reaches to 46,000, being nearly double that of the Berkeley Herbarium. The number of species has not been calculated. A large number of these are types, and others as important as types; such, for instance, are the individual specimens used in the illustration of *Mycographia*. The entire collection is a most valuable addition to the national collection at Kew, containing as it does contributions from most of the mycologists of the past forty years."

Dinner given in Honour of Professor Francis Darwin.—We learn from *Nature* that Professor Francis Darwin has recently dined with the Scientia, a group of French scientists, who each month invite some distinguished man of science to dine with them. Professor Marey spoke in the highest terms of the work and theories of the late Charles Darwin. In replying, Mr. Darwin expressed his appreciation of the honour and kindness shown to him by the many distinguished scientific men then present, to some of whom his *Life and Correspondence of Charles Darwin* has made him known.

Egyptian Wreaths.—At the recent *soirée* of the Royal Society, Mr. P. E. Newberry exhibited, by permission of the Director of the Royal Gardens, Kew, a series of ancient funeral wreaths and plant remains, discovered last year by Mr. W. M. Flinders Petrie, in the cemetery of Hawara, Egypt. The wreaths, which are of Egyptian and Greek manufacture, were all made in the first century B.C., and were found in wooden coffins, either resting on the heads or surrounding the bodies of the mummies. Among them the following are of special interest:—(1) A very perfect wreath composed of the flowerheads of a species of Immortelle (Gnaphalium luteo-album, L.), called by the ancients "helichrysos," and much used by them in making garlands. Helichrysos wreaths are mentioned by Pliny (*Hist. Nat.*, xxi., 96) as having been used in Egypt in Ptolemaic times; also by Theophrastus, Athenæus, Cratinus, &c. (2) Portion of a curious garland made of cones of Papyrus pith, Lychnis, and Rose flowers, Rose petals, and scarlet berries of the woody Nightshade. These latter are mentioned by Pliny as having been employed in garland-making by the Egyptians. (3) Portion of a wreath (of Greek manufacture) made of flowers of the Polyanthus Narcissus (N. Tazetta, L.). Wreaths made of this flower, the "clustered Narcissus" of the ancients, are often mentioned by early Greek poets. (4) Portion of a wreath made of the flowers of a species of Rose (Rosa sancta, R.). (5) A perfect wreath composed of Rose petals

threaded by a needle on to strips of twine. "Recently," writes Pliny, in his *History of Garlands*, "the Rose chaplet has been adopted, and luxury has now arisen to such a pitch that Rose garlands are held in no esteem at all if they do not consist entirely of petals sewn together with the needle" (*Hist. Nat.*, bk. xxi., 8). There are also exhibited (6) a portion of a wreath composed of twigs of Sweet Marjoram (Origanum Majorana, L.), Lychnis flowers, coils of Papyrus pith, and pieces of copper tinsil; (7) a portion of a wreath composed of Chrysanthemum flowers and leaves, purple Cornflowers, and petals of the flower of a species of Hibiscus; (8) a portion of a wreath made of flowers of Matthiola Librator, L., flowers of the Polyanthus Narcissus and Hibiscus petals; (9) portions of two necklaces made of flowers of the Date Palm threaded on strips of twine; and (10) a fragment of a necklace made of fruits of the Date Palm. Among the plant remains were found Peach-stones, Dates, and Date-stones, Walnut-shells, Currants, Pomegranates, Plums, Figs, Chick Peas, common garden Beans and Peas, Lentils, Wheat, Barley, and Oats. These were probably the remains of the ancient funeral feasts which were held in the Hawara cemetery by the relatives of the deceased people who were buried there.

Tree Struck by Lightning.—A correspondent of *Nature* says, that "During the recent thunderstorms a large Elm tree was struck by lightning in a private park at Dulwich, but the only visible effects were linear interrupted grooves about three-quarters of an inch deep, extending down one side of the tree to the ground, where two or three depressions, some 3 inches deep were found. The bark is scooped out as clearly as if done with a gouge, and the intervals are from 1 to 2 feet in length, while the grooves themselves are from 1 to 3 feet in length. The grooves are now filled with mildew, which, I take it, indicates the death of the adjacent bark."

Rose Exhibition at Torquay.—The second annual Rose Exhibition, on behalf of the Gardeners' Relief Fund (Torquay), was held in the grounds of the Devon Rosery (Messrs. Curtis, Sandford, & Co.), on June 26 and 27. The prizes which were all given by the above firm last year, were repeated, and will be augmented by a list to the value of £25 from the Torquay Horticultural Society, the Rose exhibition of that Society having been abandoned. Upwards of £50 was placed to the credit of the Gardeners' Relief Fund, the result of collections, admission being free. Mr. John French, gardener to Moreton Sparks, Esq., was a successful exhibitor, other prize-winners being Messrs. Damerell, Satterly, and Soloman. Messrs. Hawkins, Crook, Damerell, and S. H. Pearce showed fruit.

The Alexandra Palace Company.—We observe in a schedule issued by the above undertaking, that there is to be a show of Roses combined with a so-called "Rose Queen Festival" on Friday, July 12. On this occasion Mr. R. Beale will hold a stall, at which horticultural literature, books, papers, &c., will be sold. The proceeds of the sale to be given to the Gardeners' Orphan Fund, as will also the profits on all Roses—surplus specimen blooms of the exhibitors. Kind promises of help have been given.

Paris.—Messrs. Kelway & Son, of Langport, Somerset, inform us that the 1st prize for bank of herbaceous Pæonies, Delphiniums, Pyrethrums, and Gaillardias has been awarded to them at the Paris Exhibition.

Messrs. Williams' Nursery, Holloway.—Visitors in search of good species and varieties of Orchids to bloom at this season could not do better than pay a visit to this nursery. Not, as in some other Orchid-growing nurseries, do we here find a special display brought together at one point, but the visitor has to go into each house in turn to find what is in flower. If this is somewhat of an inconvenience, still it obliges one to take notice that the stock of plants generally is in good health and clean. Suffice it to mention a few amongst many Orchids that were in flower on Monday last:—Two Angræcums, Sanderianum and Scottianum, both small-flowered, and both white; Thunia Marshalli, a white flower with yellow lip covered with hair-like protuberances; T. Bensoniæ, a pretty purple flower, and free, like all Thunias. Of Cattleyas were noted several pretty forms of Mendelii of varying degrees of beauty; C. M. versicolor has usually on the same flower-stalk flowers with a dark lip and one of a much lighter colour. C. labiata pallida is a notable species, with large light purple blooms; here and there were found plants of C. Gaskelliana, bearing fine flowers. The very pretty and very pleasing light-coloured Dendrobium transparens was blooming abundantly—a useful plant at this season. A plant of Cattleya Schilleriana in a suspended basket carried four flowers. A great number of plants of Miltonia vexillaria were in flower in variety. The rare Odontoglossum Schleiperianum will soon open its flowers. In Vandas we found Denisoniana versicolor—sweet as a Violet; suavis and tricolor in bloom. Of Cymbidiums, mention may be made of ensifolium estratum, which also was in flower here two years ago; C. Lowianum was just going over, had been very fine. Cypripediums still number a great many in flower, and these some of the newest and rarest. Plants of Calanthe masuca in flower were numerous; Cœlogyne Massangeana was noted in good condition in baskets, some of its lovely flower spikes measuring 1½ feet in length.

Strawberries.—I trust, writes Mr. R. D. Blackmore, of Teddington, that present prices of fruit will please those who talk of making £250 per acre of Strawberries. Good Napier and Paxton Strawberries are now fetching in Covent Garden, 2*d*. per punnet, containing 1 lb. nett of fruit. To gather this quantity costs, if done carefully, 1*d*.; the punnet costs ½*d*. at 6*s*. per gross, and the carriage costs the remaining ½*d*. The 2*d*. moreover, is gross, not nett amount. Red Currants, the first in the market, have fetched the smallest fraction (less than a mite) over 2*d*. per pound. Tomatos, grown with fire-heat since February, are at 9*d*. per pound. The salesmen who make these returns are inferior to none in the market; neither are such prices without plenty of precedent. These figures are reached almost every year, and I never have known much recovery from them. I say, and can show from my books for thirty years, that there is only one week of the season during which outdoor Strawberries fetch a fair price, and that is before they can be gathered in large quantities.

Book Notice.

The English Flower Garden.

A second edition of Mr. Robinson's useful volume has been published by Murray. It is beautifully illustrated with many new woodcuts of garden scenes, and many representations of plants which are familiar in the seedsmen's catalogues. With most of Mr. Robinson's views as to the proper ordering of gardens there will be a general concurrence, and he has been so persistent and so consistent an advocate of more tasteful and rational methods of garden decoration that his occasional dogmatism may be condoned. In gardening, however, there is room for widely different treatment, according to circumstances and the taste of the owner. Beauty of appropriateness is, after all, the primary consideration, and an exclusive addition to one particular style, or one particular class of plants, under different conditions and environment, is as bad as the old ribbon borders. The illustrations still require a scale to show their proportionate size. For aught that appears to the contrary, Festuca appears as big, and the flower of Ficaria bigger, than the whole plant of Ferula. In one instance, however, an idea of proportion is given in a very amusing, though still truncated, manner. It is always difficult to know what ought to be included and what omitted from such a book as this; but all will agree that the line devoted to Parietaria is needless, while the Shirley Poppies find no place. Mr. Robinson uses the word "family" in a manner likely to perplex the reader. The fact that his book is not intended for botanical readers, should render the author specially careful in his descriptions and choice of terms; a loose statement would be at once detected by a botanist, but the less experienced would be misled. The greatest charm of a garden, to some folk at any rate, is the opportunity it affords for constantly learning something fresh and delightful, and there is so much to be learned in one way or another that time and energy are sadly wasted when unlearning has to be done. Mr. Goldring has contributed a useful supplement dealing with flowering trees and shrubs, but one that demands considerable expansion, though it is true that some genera and species that we naturally looked for under this heading, *e.g.*, Rosa, find a place in the body of the work. A cross-reference would have put this straight. The amateur will find it essential to have this book on his table.

Home Correspondence.

Delphiniums.—These have been a magnificent show in borders, and are among the finest things anyone can have in a garden, especially the tall perennial kinds, of which there are many now, as numbers of new sorts have been raised of late, and the exhibition of some of them at Regent's Park show on June 19 attracted much notice. Among the best of them there on that day was one named Duke of Teck, a particularly striking flower, the contrast between the deep blue and white being very marked; another also seen there, Castro, was likewise attractive. Of the old kinds none are more showy and beautiful than D. formosum, that is, when it can be had true to name; it is very large, and the lip is almost pure white. Belladonna is also a distinct kind, the flowers being of a lovely pale blue; the plant is of a free blooming habit, sending up numerous branching spikes. Besides these and many more single varieties there are numbers of doubles, the best of these latter being Madame Henri Jacotot, General Ulrich, Delight, Prince of Wales, and Michael Angelo. It need hardly be remarked that these do not seed, and therefore they can only be increased by division, which is best carried out in spring, just as the plants begin to grow, as then it can be done with safety by simply cutting them through. The same thing may be done with the singles at the same time, but where there are a few of the more select of these, seedlings should also be raised, or seed obtained from those who grow the best, as plants from such are sure to be good, and give much variety. The time to sow the seed is as soon as it is ripe, the plants raised blooming the next season. A good way of getting them up quickly is to prepare a place on a shady border by making the soil fine and smooth, and sow under hand-lights, the tops of which should be removed as soon as the seedlings have got a little strength, but which should be put on again later, and then kept tilted throughout the winter. To grow Delphiniums well, and keep them long in flower, they must have good depth of soil, and be well away from the roots of shrubs, which, if near, impoverish the soil. A good way, where the plants have to be freshly started, is to dig out deep holes and manure the bottom, and then fill in again before planting. *J. S.*

Disease of Daffodils.—Mr. Worthington Smith's interesting notice under this heading might lead some readers to suppose that the Daffodil rot, of which I have complained so much, is in some way connected with the appearance of Puccinia Schrœteri. I am sure that it is not so. The active cause which spreads the rot by contagion (?) is still a mystery, though I feel convinced that it is a specific disease, but none of the Daffodils affected by rot have ever shown marks of Puccinia. On the other hand, the

Puccinia has appeared on the leaves of Daffodils otherwise quite healthy, which have flowered well, and belong to kinds never affected by rot. As for burning them all, I hope Mr. W. Smith will forgive me if I do no such thing. There would be, as he says, no chance of exterminating all the spores, so I prefer not to kill the dog which has bitten me for fear he should go mad, but to keep him and to watch his symptoms. I venture to predict that next season these bulbs will grow and flower in their normal way with little or no signs of Puccinia. I do not underrate the power of human agency in exterminating pests, but we may exercise common sense, which tells us that many of them may as well be left to themselves, as they will appear, and disappear, and re-appear at the caprice of atmospheric and meteorological conditions over which we have no control. It would have been absurd, for instance, to try to lessen the plague of Tortrix viridana, the little green moth, the caterpillars of which bared of leaves our Oak woods last spring; but we see this year that not one in a thousand of these has succeeded in producing a single successor. Again, a few years ago a smut was prevalent in my garden on the seeds of Primula farinosa. It was called, I think, Ustilago primulina, and was said to be new to England, and dire results were foretold to everything primulaceous in my garden if I did not at once burn all the affected plants. I did nothing of the sort, but Primula farinosa goes on in the same spots, ripening and growing from seed, and though the smut occasionally reappears it has never attacked any other Primrose. *C. Wolley Dod, Edge Hall, Malpas, June* 9, 1889.

HARDY CARNATIONS.—If there are any doubts lingering in the minds of readers of the *Gardeners' Chronicle* as to the capacity of the Carnation to display all its best characteristics treated as an ordinary hardy plant, I think a look in here about the middle of July would effectually remove them. I shall have in profuse bloom just about then, although many are blooming already, many hundreds of seedling plants of the very finest strains, not of the small-flowered, profuse blooming, continental kinds—although these are very beautiful, too—but of the real English Carnation; and I am sure already that of selfs there will be scores as fine in flower and in quality as the best named border varieties. The plants are very strong, carrying large quantities of flower stems, because the seed saved in 1887 was sown as soon as ripe, the seedlings being housed in frames all the winter, and were planted out in the following spring. In the colours already showing are white, cream, flesh, pink, rose, scarlet, purple, violet, crimson, and various edged and flaked flowers, showing a wondrous variety, and in nearly all cases the flowers are very large. Now, all these plants are growing in an open field, in a stiff soil, which has, under the influence of beating rains, become as hard as the high road, and in the winter is almost saturated with water. Not a sign of maggot or of fungus, all in the rudest of health, and I shall readily wager, that whether grown under glass or anyhow, there is not to be seen a finer batch of seedling border Carnations in the kingdom. *A. D., Bedfont, Hounslow.*

WATERING AND MULCHING TOMATOS.—The present season bids fair to be a particularly good one for Tomatos, but half the battle in the successful growing of this fruit is to get an early set, and this can only be done by watching the plants, and by not letting them get dry at the roots. This they quickly do during the early stage, as the roots have not been able to travel far beyond the ball, and they are therefore dependent in a great measure on the moisture it contains, or on that which is held within the soil about it, and which is soon exhausted. The best way to prevent the danger of the plants finding too little water is to mulch with short rotten manure, and water freely afterwards, thus preventing a too rapid evaporation of moisture. By adopting this plan, and inducing all the first flowers to set, a crop of fruit is secured which will ripen early. Do not use very cold water. *J. S.*

THE OAK AND THE ASH.—Is it not about time that the proverb relating to the leafing of these trees was consigned limbo of exploded superstitions? I ask that much because I do not believe that the Ash ever did, since Oaks and Ashes existed, leaf before the Oak. My experience here is, that the trees have from a week to three weeks difference in them, according to sort or nature of tree, as some Ash trees are later than others, but it is on the whole the latest of all deciduous trees in leafing. There is no more probability that the Ash leafs before the Oak than that the Apple blooms before the Plum. The proverb has about the same sort of foundation as has the old story about the giants at the Guildhall coming down and walking about the city when they heard the clock of St. Paul's strike 12 o'clock at night. Credulous people believe anything, however wild, whilst a little common sense would, if applied, show the utter stupidity of these absurd sayings. *A. D.* [In fifty-four years of observations, the earliest time at which the Oak produced its leaves was March 31, the latest, April 26. The Ash: earliest, April 2; latest, April 29. See "Indications of Spring," *Gardeners' Chronicle*, 1888, April 7, p. 427. Ed.]

THE SHIRLEY POPPIES.—"F. R." pays but an indifferent compliment to the Rev. Mr. Wilks' truly beautiful strain of Papaver Rhœas in suggesting that it may not prove constant to character. Why, in common with so many other evolved garden flowers, this strain of Poppies should not adhere to form I cannot comprehend, as the process of selection has been the work of years, and wondrously beautiful is the product. Of all the Poppy tribe the Shirley strain gives us the loveliest of colours, combined with perfect form, and the most remarkable floriferousness. To have the plants at their best, and flowers in finest form, seed should be sown quite early in September, so that the plants may be dibbled out singly some 15 to 18 inches apart. I have plants now blooming which are 30 inches in height and as much through, and that, too, in rather poor soil. As to colours, I have never seen lovelier. They are shades of indescribable hues, so exquisitely refined and pleasing that even a *blasé* florist like myself can get into a state of enthusiasm over them. So great is the admiration expressed for these flowers that I anticipate for them a long lease of popularity. We hardly know yet how much of beauty there may be lying in this strain. I fear it would be difficult to do so, because of the wealth of pollen found in the flowers; but if it was possible to isolate and save seed true to colour of the whites, the edged roses, the self roses, and pinks, the scarlets, and crimsons, how lovely would masses of them prove to be. *A. D.*

THE WHITE MOSS.—It occurs to me that the following anecdote may be of interest:—The late Canon Lysons, of Hempsted Court, Gloucester, told me that his mother wore, on her wedding-day, the first bloom of the white Moss Rose, and that his father paid five guineas for it. This must have been about 1808. *G. E. Lloyd Baker.*

MULCHING. — The parched-looking surface of the ground makes one attend to mulching, the beneficial effects of which, on some soils and crops, can scarcely be overrated, for, without some such help, fruit trees suffer, and Peas and Scarlet Runners fail to set their pods and swell, especially the Runners, the flowers of which are sure to fall if the plants become dry at the roots; this being so, a mulching should be applied along each side of the rows, and the same with Peas, and the sooner it is put on the better, as a mulching is a great conserver of moisture, its action being to check evaporation by preventing sun and air playing too freely on the soil, and drawing out and absorbing the water the soil holds after rain. The most suitable material for mulching is littery stable-manure. Where it can be obtained, seaweed is excellent, and suits Peas and Celery, but for fruit trees half-rotten dung is best. Before it is put on, it is advisable to break the crust of the ground with a fork or hoe, so that water, when given, or rain, may pass freely in. To water without mulching is worse than useless, as the giving it draws the roots to the surface, where they perish, or the washing causes the land to crack, and let the air in and moisture out, and plants suffer quickly in consequence. *J. S.*

INULA GRANDIFLORA.—Never in ten years or more that I have had them have the large-flowered Inulas been so fine as they are now. Some plants have from twelve to twenty flowers, each 4½ inches across, and of a rich orange-yellow. I have grown them hitherto under two names, viz., I. glandulosa (Willd.), figured in the *Botanical Magazine*, t. 1907, where I. grandiflora (Willd.) is given as a synonym. It is a Caucasian plant, and though Boissier, in *Flora Orientalis*, follows Willdenow in separating them, his description of the two hardly presents any difference, and he calls them very close to one another. The other name I have had is Inula Hookeri. It is a taller plant, with shorter and less twisted rays. It is a much stouter plant, without radical leaves. This is a Himalayan form, and is separated from I. grandiflora by Sir J. Hooker (*Flora of India*). Its distinguishing character is that it sometimes divides its flower-stem. The plants I have under the name have never done so, and a number of seedlings raised two years ago from I. Hookeri differ in no one character from what I have grown as I. glandulosa. As far as I can judge, I. grandiflora, as described by Boissier, would include all the varieties I have. I send specimens, but whatever their names, they are well worth a place in any herbaceous border. *C. Wolley Dod, Edge Hall, Malpas.*

BLIND STRAWBERRIES.—It is a frequent occurrence in private gardens to find a number of infertile plants among the bearing ones in Strawberry beds, and as these are the strongest in growth, plants are often taken from them for our new beds, and there is much loss entailed from this cause. Although I am not prepared to say that they never come to bear again, I am convinced that the greater proportion continue sterile, thus causing a waste of space. In the case of beds made late, or with weakly runners, Strawberries will not always flower the first year, and as such, should not be rashly condemned; but as these blind ones differ in foliage from the fertile plants, they can be readily detected, and now is the time to examine the beds; and I would advise growers to make notes of new or improved kinds, both early and late, which would add variety to the dessert, and extend the season. *Geo. Bunyard, Maidstone.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

June 25.—Present: Dr. M. T. Masters, in the chair; Messrs. McLachlan, Morris, Michael, Dr. Müller, and Rev. G. Henslow, Hon. Sec.

Rosa berberidifolia.—Dr. Masters gave the results of his examination of the anatomical structure of the stem and petiole of this exstipulate, unifoliate species exhibited at the last meeting, and found that the fibro-vascular cords leading to the normal position of stipules were present, the stipules themselves being quite arrested. He commented upon the importance of extended observations on the anatomical structure of plants from a horticultural point of view—in that, for example, when the water-cells are more abundant—the plant appears to be more liable to be attacked by mildew.

The Blight of Caterpillars.—Mr. McLachlan observed, on the present superabundance of caterpillars, that it is far less serious and much more local than is popularly supposed to be the case, some districts being apparently quite free from any excess. Remarks were made upon the popular errors associated with the vague term "blight," and the difficulty of persuading the unscientific world that plagues of various kinds of destructive animals had nothing whatever to do with atmospheric appearances of haze.

Amorphophallus Titanum.—Dr. Masters exhibited drawings of, and Mr. Morris described, this remarkable Aroid lately flowering at Kew, fully described in our columns June 15 and 29, and illustrated in our present issue (figs. 3, 5, 6, pp. 12, 20, 21). It was received from Sumatra ten years ago, having been discovered by Dr. Beccari. The tuber weighed 56 lb. at the beginning of this year, and grew at the rate of 4 inches a day. The spadix and stem together were 7 feet in height. The spathe was at first closely adpressed to the spadix, but on Friday morning, the 21st, it began to spread, and was fully expanded for one day only. By Saturday morning it had again closed round the spadix. Like so many Aroids, the odour was for a time most offensive. The male flowers are situated low down in a ring, and doubtless pollinated the females which were below them. Flies were observed at the base, but whether they assisted in the fertilisation, or were laying eggs in the spadix, could not be determined.

Pyrethrum Attacked by Insects.—Dr. Müller showed specimens of leaves penetrated by a dipterous miner, probably a species of Phytomyza. It first appeared on the yellow Soleil d'Or, and thence spread to the red varieties. Mr. Morris compared its ravages with those of the Ceniostoma coffeellum, which has destroyed plantations in Ceylon and Dominica. The

best way to destroy it was to pinch the leaves where the caterpillar was burrowing underneath.

Festuca ovina (?).—Dr. Masters showed specimens apparently of this species, which were reported to be covered with a gummy exudation. It did not appear to be present on the dried specimens sent, but it was suggested that it might have been honeydew. Mr. Morris undertook to determine the species and to report further upon it.

Abies Nordmanniana.—Mr. Veitch sent a remarkable branch of this species with a large burr, with spreading branches of a yellowish hue. A discussion was raised as to the general cause or causes of such structures, and whether they were hereditary or could be propagated. The opinion entertained was, that they were originally due to the puncture of some insect, but the difficulty lay in observing it at the time. Dr. Masters said he had on one occasion noticed some seedlings of Fir trees having such abnormal growths on the Simplon. It was proposed to subject the specimen to microscopic examination, and to test the powers of propagation. The Clanbrassilian Fir are known to be readily propagated which have thus originated.

Urtica dioica monœcious.—Mr. Henslow exhibited specimens of the female plants of the common Stinging Nettle with male flowers at the extremities only of the female branches of the panicles, corroborating the generally received view that the occurrence of male organs is correlated with a reduced vigour.

National Rose Conference, Chiswick.

July 2 and 3.—The attendance last Tuesday and Wednesday was by no means so large as it might have been and, indeed, the exhibits were comparatively few in number, but did not lack in interest or beauty. Taken as a whole, the quality of the blooms of the show, Teas, H.P.'s, &c., was of a good average. The Moss and China Roses, and other neglected sections were fairly well represented, and called up old memories to many of the visitors. At the Conference proper—details of which are given below—much useful work was done, and the papers read will appear in full in the *Journal* of the Society. On Tuesday evening Sir Trevor Lawrence presided at a dinner held in the Hôtel Métropole, when about seventy persons attended.

The Great Collections.

These were found in class 1 of the schedule issued by the conference committee, and seemed to include representatives of nearly all ordinary kinds, whether exhibition, garden, climbing, miniature, and otherwise. The class included four entries, viz., from Messrs. W. Paul & Son, Waltham Cross, who had no fewer than eighteen boxes of flowers, comprising 368 varieties, for which a Silver-Gilt Flora Medal was given. Messrs. G. Paul & Son, Cheshunt, who had fourteen boxes, containing many high-class flowers, who also took a Silver-Gilt Flora Medal. Mr. W. Rumsey, Waltham Cross, who had seventeen boxes, and received a Silver Banksian Medal; and Mr. C. Turner, of Slough, who sent eight boxes. Messrs. W. Paul & Son's collection comprised many hybrid perpetuals, Teas, Noisettes, climbing Teas, Mosses, Gallicas, Polyanthus, Chinas, singles, and various other sections. Of the hybrid perpetuals, very fine dark flowers, were Harrison Weir, A. K. Williams, Abel Carrière, Auguste Rigotard, Charles Darwin, Duke of Connaught, Prosper Laugier, Marshall Wilder, Black Prince, Grand Mogul, Crimson Queen, Duke of Edinburgh, Horace Vernet, Eclair, and Ferdinand Chaffotte. Of rose tints, Madame Charles Wood, Her Majesty, La France, Madame C. Crapelet, Countess of Oxford, Princess Beatrice, May Quennell, Etienne Levet, Madame Decour, a lovely rosy carmine, and Madame Gabriel Luizet, were excellent. Of white hues, Coquette de Blanches, Baronne de Maynard, White Baroness, The Puritan, Mabel Morrison, Albane d'Armenia, Madame Lacharme, and Madame François Pittet were the best. Of the Bourbons, Souvenir de la Malmaison, Cannes la Coquette, and Michel Bonnet, were the most striking. Noisettes had as representatives amongst others, W. A. Richardson, Fellenberg, Madame C. Kuster, Aimée Vibert, and the deep red Queen of Bedders. Tea-scented varieties included the Countess of Pembroke, Madame de Watteville, Madame Cusin, Catherine Mermet, Perle des Jardins, Grace Darling, Madame Falcot, Hon. Edith Giffard, The Bride, and Sunset. Climbing Teas included Devoniensis, Lambriesa, Madame Berard, Waltham Climber, Belle Lyonaise, and the fine old Gloire de Dijon. In Gallicas were found the old striped Rosa mundi, Persian Yellow, and Harrisonii, of Polyanthus, Mignonette, and Princess de Pays Bas. Of Chinas there was nothing specially worthy of mention. Singles included Rugosa and R. alba, and Madame George Bruant. The best of the Mosses were the common crested purpurea rubra and Blanche Moreau. Hyrbrid Chinas included Coupe de Hébé, Vivid, Paul Perras, Fulgens, Madeline, and Juno, Evergreen Ayrshire, Hybrid China, &c., made up this large and varied collection. Messrs. G. Paul & Sons' fine lot of flowers gave of hybrid perpetuals excellent blooms of Comte Raimbaud, Star of Waltham, Madame Alphonse Lavallée, Charles Darwin, Countess of Rosebery, Alphonse Superb, A. K. Williams, Victor Hugo, Eclair, Beauty of Waltham, Madame Charles Wood, Lady Helen Stewart, Baroness de Medan, Abel Carrière, and Reynolds Hole, of rich-coloured kinds. Of lighter hues, Lady Mary Fitzwilliam, Victor Verdier, Marie Cointet, Captain Christy, Her Majesty, Baroness de Rothschild, Pride of

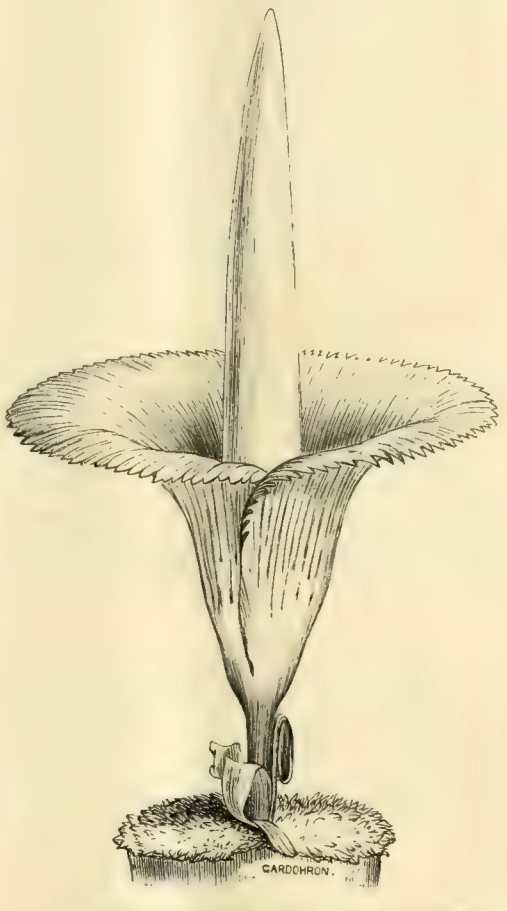


Fig. 5.—Amorphophallus titanum, fully expanded. Greatly reduced. (see p. 19.)

Waltham, Duchess de Gallier, Silver Queen, and Madame Thérésa Levet were the most pleasing. Bourbon varieties gave Madame J. Perrière, Madame Trifle, Souvenir de la Malmaison, and Countess du Parc, all excellent. Amongst Teas, Madame Cusin, Madame A. Etienne, The Bride, Jules Finger, Gloire de Bordeaux, Innocente Pirola, Etoile de Lyon, Souvenir d'Elise Vardon, Francisca Kruger, and Madame Bravy were charming; and of Chinas, Vivid, Longworth Rambler, Paul Verdier, and White Pet were good. In single forms, Paul's Single Red and Single White, and Macrantha White were pretty; and of the Rugosa section the red, white, and pink forms were very charming. The striped Provence forms gave some pleasing flowers, especially Mercedes, Perle de Panachées, Elie Flamand, and Montalembert. The best Moss forms seemed to be Blanche Moreau, crested, common, and White Bath. Hybrid Teas included Reine Marie Henriette, Grace Darling, Countess of Pembroke, and Cheshunt Hybrid. Noisettes, W. A. Richardson, L'Ideale, Aimée Vibert, and Narcisse; and Polyantha forms, Gloire de Polyantha, George Permet, and Max Siniger. Mr. W. Rumsey had blocked their flowers so far as possible into divisions of colour, their heavy hued hybrid perpetuals, including Lord Macaulay, Victor Hugo, Empress of India, Charles Darwin, Pierre Notting, Souvenir de Victor Verdier, &c. Lighter hues included E. Y. Teas, Le Havre, A. K. Williams, Duchess of Bedford, Marie Baumann, and Camille Bernardin. Rosy tints included Jules Margottin, Etienne Levet, Madame C. Wood, Royal Standard, Duchesse de Morny, and Auguste Rigotard. Paler tints were found in Jules Finger, La France, Baroness Rothschild, Mrs. G. Dickson, Her Majesty, Merveille de Lyon, Madame Lacharme, and Eugène Verdier. Of Teas, this firm had good blooms of The Bride, Francisca Kruger, Madame Angele Jacquier, Sunset, Comtesse de Nadaillac, Etoile de Lyon, Boule d'Or, pale colours; and darker hues, Souvenir d'un Ami, Madame Lambard, Madame Cusin, Countess of Pembroke, and Miss Ethel Brownlow. Mr. C. Turner had arranged his H.P.'s in trebles, the light and dark flowers alternating. Of the dark hues, Countess of Rosebery, Marie Baumann, Xavier Olibo, A. K. Williams, Charles Darwin, and Charles Lefebvre were the best; whilst of pale hues, Merveille de Lyon, Captain Christy, Her Majesty, Baroness Rothschild, and Madame Gabriel Luizet were very beautiful. Teas found good representatives in Madame Willermoz, Madame Lambard, Catherine Mermet, Marie van Houtte, Adrienne Christophe, and Countess de Nadaillac. Of Polyantha forms, very pretty clusters of Mignonette, Perle d'Or, The Pet, Anna Maria de Montravel, and Jean Drivon were set up; and of climbers, Jules Margottin and Princess Louise Victoria; whilst of Mosses there were, very fresh and good, Cristata, White Bath, and Jas. Veitch, this latter being of a curious mauve-purple colour, but pretty in the bud state.

Summer-flowering Roses.

In the class for Moss and Provence Roses, Messrs. W. Paul & Sons, G. Bunyard, of Maidstone, and J. Cranston, of Hereford, set up collections. Messrs. Paul & Sons had very pretty Moss, Pride of Milton, large red; White Bath, common Crested, Little Gem, and Angelique Quetier. Mr. Bunyard's flowers included Reine Blanche, Celine, common Moss, common Provence, Spongs' (dark red), and Laneii. Mr. Cranston's flowers had amongst them Cranston's Perpetual, white; Gloire des Mousseuses, pink; Crested Moss, Madame Moreau, and Edward Ory. A Silver Banksian Medal was awarded to Messrs. G. Bunyard & Co.

In the collections of Hybrid China, H. Bourbons, H. Noisettes, Gallicas, and Albas, number unlimited. Messrs. Geo. Bunyard & Co., Maidstone, made a display of meritorious varieties, each one being referred to its own section, Ohl and Duchess of Buccleuch, were conspicuous forms of Gallica, Princess Louise Victoria and Cannes la Coquette of Bourbons; and of Noisettes, Boule de Neige, Loisette, and Madame F. Pittet; while Paul Verdier, Ch. Lawson, and Paul Ricaut, of the hybrid Chinas attracted notice. Messrs. W. Paul & Son, Waltham Cross, N., who also showed well here, had Madame Legros, cream-white, with a pinkish centre; Celestial Pink, Madame Plantier, Ch. Lawson, and Blairi No. 2; a third lot somewhat similar coming from Messrs. J. Cranston, King's Acre, Hereford, Abel Carrière, Juno, and Fulgens being the most noticeable.

Single decorative Roses were contributed by the Rev. J. H. Pemberton, Havering-atte-Bowe, Romford, alone, and some of those shown by him are certainly well worthy of the title decorative, such, as for instance, the Damask Rose, in varieties, including the striped form, which, however, is not to be compared to the selfs in our estimation; Rosa rugosa, the old China, R. lucida, and Madame Hardy, a pink-flowered Rose.

Climbing Roses were a very effective show in the collection of Messrs. Paul & Son, Cheshunt, who had them lightly arranged in baskets, one variety to each basket. Madame Plantier, Felicité Perpetuelle, The Garland, and Mary Gray attracted notice at once, and others included Amadis, Flora, Coupe d'Hébé, and Raal Verdier. Messrs. W. Paul, Waltham Cross, had various forms of hybrid China, Ayrshire, Sempervirens, and H. Bourbon, of which we may enumerate Dundee Rambler, Virginian Rambler, Ch. Lawson, Leda, Vivid, and Fulgens; also the elegant little Garland, and La Ville de Bruxelles (Damask). Messrs. G. Bunyard & Co. also showed here, having such favourites as W. A. Richardson, M. Niel, Devoniensis, Ophirie, Cheshunt Hybrid, and Reine Marie Henriette.

Messrs. G. Bunyard & Co. were the only exhibitors of Polyantha Roses of the summer-flowering kinds, Anna Marie, and Perle d'Or being the most notice-



FIG. 6.—AMORPHOPHALLUS TITANUM IN THE VICTORIA HOUSE AT KEW, ON JUNE 22, THE MORNING AFTER IT HAD OPENED: TOTAL HEIGHT, 6 FT. 9 IN. (SEE P. 19.)

able, the latter looking very elegant in small buds. The same firm was again alone in exhibiting any summer-flowering Rose not provided for in the foregoing classes, and made a very attractive stand with such as Paul's single white, the old Rosa Mundi, the Persian Yellow which is of such a rich hue, the Austrian Briar, R. rugosa and its white variety; Perle des Panachées, and the red Damask.

Autumn Flowering Roses.

Collections of H.P.'s, not exceeding forty-eight varieties, were sent by three firms. Mr. J. Cranston showed forty-eight blooms of large size, bright, and in first-class condition, having as his best, Merveille de Lyon, Marie Baumann, Etienne Levet, Maurice Bernardin, Madame Lacharme, Madame Ch. Wood, Abel Carrière, Countess of Oxford, Ulrich Brunner, Marquise de Castellane, François Michelon, and Senateur Vaisse. A Silver Flora Medal was awarded.

Messrs. Keynes, Williams & Co., Salisbury, were awarded a Silver Banksian Medal for a collection of seventy blooms, generally of medium size, good form, and shown in fair condition; Marie Verdier, Duke of Edinburgh, Alfred Colomb, Duchesse de Vallambrosa, Fisher Holmes, Madame E. Verdier, Elie Morel, and American Beauty, may be selected. The 3rd lot was from Messrs. J. Burrell & Co., Cambridge, who staged thirty-six blooms, bright and fresh, the best being Madame Montet, Marquise de Castellane, Duke of Teck, Dupuy Jamain, Her Majesty, General Jacqueminot, Madame J. Dubois, and Horace Vernet.

For twenty-four varieties H.P.'s, Mr. F. Cant, Colchester, was awarded a Silver Banksian Medal. He contributed a stand of very fine, bright, and fresh blooms, and had a pleasing mixture of colours, Marie Finger, A. Colomb, Prince Arthur, Ulrich Brunner, Horace Vernet, Pride of Waltham, Etienne Levet, Her Majesty, Madame Ch. Wood, Lady M. Fitzwilliam, and Star of Waltham being fine samples. Messrs. Keynes, Williams & Co. had a creditable lot, in which were Duchesse de Morney, Ulrich Brunner, Duke of Wellington, M. P. Wilder, and Countess of Rosebery. Messrs. G. Bunyard & Co. had a collection of dark-coloured varieties, Xavier Olibo, A. K. Williams, and Ulrich Brunner being most noteworthy. Large and full flowers were sent by Messrs. J. Cranston, Madame M. Rady, Queen of Queens, Madame Ch. Wood and Madame Ch. Crapelet being included; and from Messrs. J. Cheal & Sons, Crawley, Sussex, was a collection of medium-sized blooms of good varieties.

In the collection of twelve H.P.'s Mr. F. Cant also sent a good bright lot of blooms, Merveille de Lyon, Pride of Reigate, Ulrich Brunner, and Her Majesty, being the finest. A very bright and neat lot was staged by Mr. E. Mawley, Rosebank, Berkhampsted, in which Captain Christy, François Michelon, Dupuy Jamain, Countess of Oxford, and Her Majesty, figured well; Messrs. J. Cranston, and Keynes, Williams & Co., were also exhibitors here, showing as before.

Among the collections of Teas and Noisettes, not less than twenty-four varieties, there was a grand display. Mr. G. Prince, Oxford, had a capital lot, receiving a Silver Flora Medal for them. The blooms were fresh, bright, and well-coloured, the best being: Comtesse de Nadaillac, Madame Cusin, M. Neil, Catherine Vernet, Marie Van Houtte, Madame de Watteville, Etoile de Lyon, and Souvenir de S. A. Prince. Mr. F. Cant was awarded a Silver Banksian Medal for a stand of large and well-filled blooms, Madame Cusin, Comtesse de Nadaillac, Madame de Watteville, and Madame C. Kuster being the varieties best represented. A very bright lot came from Mr. J. Cranston, Devoniensis, Innocente Pirola, Souvenir d'un Ami, and Perle de Lyon being well shown. The Rev. F. R. Burnside, Gloucester, sent a stand of neat but small flowers; and Messrs. J. Burrell & Co. had M. Niel, Madame A. Jacquin, and Madame de Watteville in good form.

In the class for twelve Teas or Noisettes good blooms were again the rule. Messrs. Keynes, Williams & Co. had a very elegant, neat, and well-coloured lot of blooms, out of which Madame Cusin, Niphetos, Catherine Mermet, and Madame de Watteville may be named (Silver Banksian Medal). Mr. G. Prince was also a worthy exhibitor, and was also awarded a Banksian Medal. Niphetos, Comtesse de Nadaillac, Madame Cusin, and Madame de Watteville, were well formed blooms. Messrs. Cranston and J. Cheal & Son also showed well.

Teas in bunches were very effective, but only small blooms were shown. Messrs. G. Bunyard & Co. showed a number of interesting varieties. Marquise de Vivens (Tea), white with red margin, was very attractive; others were W. A. Richardson, Laurette, Perle des Jardins, Comtesse de Nadaillac, &c. Mr. G. Prince, and Messrs. Paul & Son, Cheshunt, also showed a neat box of favourite garden varieties.

Polyanthas and hybrid Roses were represented by one lot only, which was sent by Messrs. W. Paul & Son; Perle d'Or, Anna Maria de Montravel, and Cecile Brunner, which last is of a pretty pink colour, may be mentioned.

Collections of China Roses were very pretty and bright. Messrs. G. Bunyard & Co. contributed a capital lot, showing besides the Common or Blush, the Purple, Louis Phillipe, Ducher, and Gloire des Rosamenes. Messrs. W. Paul & Son showed vigorous specimens of Ducher, Blush, Belle de Florence, and Cramoisie supérieure. These Roses are very elegant either in growth or when cut.

Species of Roses.

There were several good collections of species, T. W. Girdlestone, Esq., Great Berkhamsted, having a number, all in flower, and for which he was rewarded by the grant of a Silver Banksian Medal, the collection included rugosa, rubrifolia, Beggeriana, Damask, indica and varieties, Hardyi, macrantha, pisocarpa, Woodsi, multiflora, and lucida varieties in excellent specimens.

From the Royal Gardens, Kew an extensive lot was sent which were as follows:—R. nivea, involuta Wilsoni, micrantha, hemisphaerica, spinosissima, berberidifolia, Fortuneana, nutkana, Beggeriana, sempervirens, capreolata, polyantha, moschata, stylosa, sinica, cinnamomea, carolina, sericea, lucida, nitida, laxa, pisocarpa, rugosa, microphylla, hibernica, acicularis, Webbiana, alpina, myriacantha, macrophylla, provincialis, centifolia, damascena, gallica, tomentosa, villosa, noisettiana, canina, indica (green monstrosity), anemonæflora, rubiginosa, and sepium.

Messrs. Paul & Sons also showed Rosa species in pots, having R. carolina, lucida, blanda, foliosa, gymnocarpa, Eccæ, setigera, arkansana, Berberidifolia, of which illustrations is given at pp. 8 and 9, figs. 1 and 2, of this issue; pimpinellifolia, platyacantha, Pissardii, nitida, nutkana, pisocarpa, macrophylla, microphylla, lævigata, sinica, indica, villosa, and Nuttaliana.

The Rev. J. H. Pemberton had specimens of R. arvensis, rubiginosa, and canina.

From the Botanic Gardens, Cambridge, Mr I. R. Lynch sent nineteen specimens, which were mostly in flower; they were alpina, Beggeriana, blanda, canina var. (dumalis) gallica, indica, pumila, involuta Wilsoni, lucida, macrantha, macrophylla, Manetti, polyantha, repens, Ayrshire, rubiginosa, rubrifolia, rugosa, and rugosa var., with a distinct foliage.

Rev. Moyle Rogers showed a specimen of Rosa pseudo-rusticana, a Rose hitherto only known to exist in this country; and Mr. T. A. Briggs sent specimens of Rosa stylosa var. systyla, R. micrantha Briggsii, R. stylosa leucochroa, and six old garden Roses.

Mr. Ross showed, from Pendell Court, Rosa mundi, damascena, Felicité perpetuelle, rugosa, rugosa alba, arvensis, canina, lutea, double flowered; Austrian Brier, Polyantha, in variety; lucida, and repens.

Rev. H. Ewbank sent specimens of Rosa berberidifolia, sinica, rubrifolia, and lucida.

Miscellaneous.

Messrs. Keynes, Williams & Co. sent a few boxes of favourite varieties. Messrs. W. Paul & Son showed the new Duchess of Albany and seedlings—Sappho (Tea), delicate yellow; Waltham Pet (Moss), white, pink centre; and Spenser (H.P.), large pink. Mr. G. Prince had Niphetos, Madame de Watteville, and Comtesse de Nadaillac, in excellent samples, richly coloured. Mr. Cranston showed Crimson Bedder, a very effective and free Rose, with others; and Messrs. Paul & Son had two boxes of H.P.'s and one of Teas, showing well-known varieties. Messrs. Drover, Ryde, Isle of Wight, had fine blooms of Rose W. A. Richardson, from an east wall.

The meeting was held in the gardens of the Society. Dean Hole presided at the first meeting.

The Chairman in opening the proceedings, said:—On a summer's evening some five-and-forty years ago a young English gentleman who had just finished his career at Oxford was sauntering round his father's garden—a pretty garden, full of all the old pleasant things—but he was thinking more of the "weed" between his lips than of the flowers around him. Classical literature, and field sports, and pretty faces, and graver matters than these had caused that love of flowers of which we all of us have, innate reminiscences—of Paradise lost and indulgence in the hope of Paradise regained,—had caused the love of flowers to pale its ineffectual fire. He was blind to the glory that was all around him. Suddenly, I am telling you literal simple facts, suddenly he, or I, for I was he, and I know to a few inches the very spot. Suddenly he saw the glory of the western sun in a Rose. It was a Gallica Rose, and the sudden splendour of the sight caused him to say from his heart, "Oh, how beautiful!" I could have almost knelt, I say "almost" because I was in dinner dress, and Poole's expensive garments were not adapted for kneeling on gravel walks; therefore, I satisfied myself after I had made obeisance to the Rose, by going and visiting every Rose I could find in the garden. There were not many in those days. There was the old cabbage — what a name to give a sweet lovely Rose! You might almost as well call it bubble and squeak. There was the Moss Rose, the Rosa Mundi, commonly called the York and Lancaster, there was the little Fairy Rose, that we used to call Doll's Rose, there was the Crimson Damask, and I am not quite certain whether this Rose I now have in my coat—Lee's perpetual—was there or not. There were a few named varieties which our zealous old gardener had persuaded my father to get, and these were considered the novelties and glories of the period. There was the Charles Duval, the Brennaus, Blairii No. 2, Fulgenas, the Charles Lawson, and I think Madame Laffey. I delighted in my sudden but very complete conversion. Love at first sight—first born heir of all—made this night thus, and the next morning I wrote for *Rivers on the Rose*. I devoured, I digested every word of it. I marked under almost every Rose, like a young lady's letter, where all the adjectives are scored under, and as soon as it was possible, in the month of November, came one of those delightful hampers that we rosarians love as much as the schoolboy does the hamper from home. I delighted to cut the cords and unravel the matting. The Roses responded to my admiration and smiled upon me, and never since the days of Paradise had there been such Roses seen in Nottinghamshire. Friends came to admire them, and I planted them, until at last our garden was like the Crystal Palace under a pyrotechnic influence—it was all *couleur de Rose*. I was not satisfied with the admiration of friends; the public must gaze and wonder and see the first prize written beneath. Still I was dissatisfied; hunger and appetite came with eating. I was indignant that the queen of flowers should be treated more like a lady-in-waiting than as royalty should be. It was put into a corner of the show, and judged very often by men who hardly knew a Rose from an Artichoke; and while other flowers, the Carnation, the Chrysanthemum, and the Dahlia, had exhibitions all to themselves there was no such thing as a Rose shown in its own unaided dignity and beauty. Year by year this feeling grew upon me, and at last I made a public protest, and I made a strong appeal, not only in the magazines, but by private letters, that we might have a National Rose Show, and more than thirty years ago a very few of us—the fewer the men, the greater share of honour—we met, we band of brothers, at a place called Webb's Hotel, in Piccadilly, which had not much association with Roses, except that there was a strong fumigation pervading the apartment in which we met. We met there—Mr. Rivers, of Sawbridgeworth; Mr. William Paul, whom I am delighted to meet to-day; Mr. Charles Turner, of Slough; Mr. Francis, of Hertford; and I think that was all. Only two of us remain now of that little company. But our heart was in our work, and it prospered. We collected a sum of £200, and had our first great National Rose Show in St. James's Hall, just then finished, and we paid 30 guineas for the day on July 30, 1858. I had the happiness of giving away thirty-six silver cups, as the saying is, with my own hands, because I could not very well do it with anybody else's hands, and when I presented two to myself, my dear old Yorkshire gardener said he thought I should have gone right up, like Ganemede, you know, whom Jupiter snatched from earth in order that he might be his cup-bearer in Olympus. From that time Rose shows became an institution, and the greatest result that came from them as regards us rosarians was the institution of the National Rose Society, mainly by the efforts of our friend, Mr. D'Ombrain. That Society has done its work, and, I think, with consummate wisdom and zeal,

and the Society has had the arrangement of Rose shows in England, north and south, east, and west. It has done more than this—it has published an excellent catalogue of Roses fit for exhibition, and it has done more than this in later days, a selection of Roses which are best for general enjoyment in the garden. That supplement was to me most welcome, because there prevailed an idea amongst florists that we rosarians only cared for obese blooms; but the reality is this, and you will testify to the truth of what I am saying, that it is impossible to love one Rose really and not love them all; and I do not think any man deserves the name of gardener who does not see something to admire in almost every flower that grows. And now I have been obliged to be very egotistical, because it has all been historical; but I may state, not without some little vanity, that from that single Rose on that summer's evening, hundreds of additional acres have been planted with Roses, and that little spark has lighted ten thousand fires. It remains for us old rosarians to do all we can for our younger brethren, to tell them all we know about soil and situation, enrichment, and cultivation, and to put before them the *pros* and *cons*, the losses and gains of exhibiting Roses. One hardly knows what advice to give to the neophyte as to which line he should take. I think if I began again from the beginning to be a rosarian, I should like to have a sort of amphitheatre of Roses, slopes of Roses, cataracts of Roses—like those of Ayrshire, which came down from the house of Mr. Rivers—arcades of Roses, arches of Roses, avenues of Roses. I should like to have every Rose that grows, and it is delightful to see to-day almost every Rose that is known in this exhibition, which has been so elaborately arranged, and so well supplied. At the same time, if I were going round this beautiful garden a few days before the show, and saw what a young sporting friend of mine, who is a rosarian also, described the other day as the "ripping twenty-four"—if in this amphitheatre I saw this "ripping twenty-four," I know I should feel fidgetty and uncomfortable, like the hunter who hears the horn in the distance, or like the soldier who listens to the trumpet and the drum; and I know the old days would come back when one had the glowing happiness to go into one's garden when the sun was rising—at 3 o'clock in the morning, and seeing that splendid sight of those Roses washed with dew—an *embarras de richesse;* and then the completion of the box, the travelling by the rail, and the arrival, when—

> "From dusk to dawn, from night to morn,
> We dozed through clank and din,
> And woke with cramp in both our legs
> And bristles on our chin."

Then the delight of making ourselves C.B.'s—companions of the bath—the arrangement of the show, the anxiety and doubt, and at last the victory. Between these phases I should hardly know whether to recommend a rosarian to become an exhibitor or not, at all events you will bear with my personal recollections, because you know my heart is in the cause. "I am not the rose," said the earth in the Persian fable, "but cherish me because we have grown together." It is not right to make a long grace when we are longing for the meal, and it is not right for me to make a too long preface when we are going to have so much practical information, but I will only add that this is a happy day to my heart. It is a happy day for me, for I feel like some old grandfather surrounded by his children, and his children's children; and to those who are strangers, to those who are perhaps only just beginning to love roses, to those who come from a distance, and to those who come over the waves to England, I apply to them the name, not strangers, but brothers. One touch of rose love makes the whole world kin. *Multa terricolis linguæ rosicolis una.* Our language may be different but there is something in our hearts that has the same congruity of sound, and we welcome all to-day, knowing that they will join with us their voices in saying *Florea regina florum; Vive la reine des fleurs!*

The following papers were then read:—Mr. Foster-Melliar on "Pruning Roses," an excellent practical paper; Mr. Mawley on "Rose Stocks, &c.," and lastly that by M. Vivian-Morel on "Rosa polyantha as a Stock for the Rose," which was read by Dr. Masters.

The author pointed out that M. Alegatière, of Lyons, ascertained that the seeds of this species germinate within a month after being sown without being stratified, so that the stock can be budded in the first year. Various confirmatory statements by different experimenters were given; amongst others, some by M. Bernaix, who advocates the budding of Roses on seedling Polyantha stocks as specially suitable for pot Roses, and Roses intended for forcing. Such plants come into growth and flower ten to fifteen days earlier than those budded on the Brier, and do not throw up suckers. The stock is as well suited for Teas as for H.P.'s. M. Viviand Morel himself repeated these experiments with the same results.

A comparative trial of Roses for forcing, budded on the seedling Polyantha and on the seedling Brier respectively, and in which the conditions were identical, gave afforded following results:—Roses budded on the Polyantha stock gave twice the number of flowers that the same variety produced on the Brier, and, further, they were a fortnight earlier.

The PRESIDENT, in the discussion which followed, said he had seen gardeners prune their Grape vines till tears came into their eyes. When he was a young Rosarian he pruned a Blairii No. 2 and the consequence was that he got no bloom for a good many years. They must cut Roses according to their state. He was very glad that the system of pegging-down had been mentioned because he thought it was a beautiful system, which few Rosarians adopted. He did not know anything much more beautiful than a well-to-do bed of pegged-down roses. Here and there they might diversify the monotony of the surface by putting in short standards or still higher standards might be put in, which would give a beautiful mass of roses. Very strong growing roses must be selected. People were very much afraid of transplanting, but it was a great mistake to be afraid, and he had some roses which benefited very much from transplanting. When he went to Rochester he found some roses that were not fit to be seen. He said they must be burned, but some one said they might be put where they could not be seen. They were moved, and were now ten times better than they ever were. Mr. Foster-Melliar spoke about his Teas being seriously injured and destroyed by the severity of the winter. He was one of the first to grow Teas in large quantities out-of-doors, and he never lost any. The briar in all its shapes was the best stock as a rule for English roses.

Mr. BERTRAM asked what Mr. Foster-Melliar's experience had been with regard to the pruning of Maréchal Niels out-of-doors. It was, he thought, a most important question.

Mr. Foster-Melliar said he had mentioned that Maréchal Niel and Gloire de Dijon should have the shoots of the year before as long as possible with the old weak wood cut out. All his own Maréchal Niels were effectually pruned, but they went through a 32° of frost, and there was an end of them. In answer to the President he would say that all his Tea-roses, of which he grew over 1000, and dwarfs were all earthed-up like Potatos at the commencement of every winter, about a foot deep. He did not think there could possibly be a better protection from the frost, but in spite of all that, a great many of them were killed. He lived in a very low situation, a circumstance very much opposed to the satisfactory growing of Roses, Tea Roses especially, and therefore, like an Englishman, it was the only flower he tried to grow.

The CHAIRMAN said a great risk was of course run in growing them out-of-doors, but if a Maréchal Niel was obtained out-of-doors in its integrity, they would get it in its fullest grandeur.

Mr. G. BUNYARD asked for some experience with regard to *de la Grifferaie* as a stock. He mentioned that he had some Tea Roses which went through some winters very well, but which were killed by the winter of 1880, and he had given it up in despair. He instanced this because others might be on the same track and it might save them some little trouble.

Mr. G. PAUL said the fault of *de la Grifferaie* was that it was one of the very earliest, and making Roses start too soon was not an advantage. It adapted itself to the Gloire de Dijon. It was also used very largely for dwarf Teas, and for the Gloire de Dijon it was a very useful stock.

A paper was next read by Mr. Paul on "Grouping according to the variety of Roses."

The PRESIDENT said he was sure they were all greatly indebted to Mr. Paul for his interesting paper because he (the President) seemed to have gone through the whole gallery of Roses as Mr. Paul went from one to another, and he hoped that what they had seen and heard that day would enrich many gardens with some forgotten gems. The Copper Austrian had been mentioned, and he should like to know how to grow it, as he had often tried and had always failed.

Mr. GEORGE PAUL then read a paper on "Roses since 1860."

The PRESIDENT called upon Mr. Girdlestone and Mr. D'Ombraine to speak, but as these gentlemen were not present, he said the proceedings might be adjourned till the next day.

Mr. T. B. HALL, of Larchwood, Rock Ferry, proposed a vote of thanks to the Chairman. He said he thought many of them would never have thought of Roses had it not been for Dean Hole's book, and many would scarcely have exhibited had it not been for the Dean's exertions in that direction many years ago. He had just returned from a tour round the world, and wherever roses were known the name of Dean Hole was known and loved.

Mr. HENRY M. ARDERNE, Director of the Botanic Gardens, Capetown, and holder for many years of Champion Silver Cup for Roses, South Africa, seconded the motion, and spoke of the appreciation there of Dean Hole's book.

The PRESIDENT heartily thanked the meeting for the vote, but declined to take all the commendation to himself. They met as Members of the National Rose Society [and of the Royal Horticultural Society Ed.] to the working men of which they owed gratitude. He wished Mr. D'Ombrain had been present that day to have accepted their thanks, but Mr. Mawley was present and they tendered him, as a conscientious worker, their best thanks.

The proceedings were then adjourned till the following day.

SECOND DAY.

Mr. J. G. BAKER, F.R.S., presided and opened the proceedings by reading a paper which, with the others, will appear in the Journal of the Society.

Mr. BAKER, who explained his paper by diagrams, said in the course of his remarks, that Sir Trevor Lawrence asked the Dean of Rochester the previous evening whether the roses in the garden of Eden were not without thorns until the misbehaviour of Adam and Eve. The Dean shirked the question; but, however, unpleasant it might be to inadvertently get hold of a prickly shoot, botanists would find it very difficult to classify roses without their thorns.

Mr. FISH wanted to know if there was any hope of getting rid of prickles in the cultivated rose. Prickles were, of course, wanted in the natural state, but in the cultivated state they were not at all needed.

The PRESIDENT said he was afraid there was no way of getting rid of prickles.

Dr. MASTERS mentioned that those gardens represented Paradise yesterday, inasmuch as they had a Dog Rose which was sent direct from Paradise—only it happened to be from Siberia—and which had no prickles at all. It was recommended for grafting purposes.

Lord PENZANCE's paper on the hybridisation of Roses was next read.

In this paper the writer traced the development of Rose culture from the time when the Dutch some seventy to eighty years ago commenced to propagate Roses by selection from seed. The example was quickly followed by the French. Adverting to times present, his lordship laments the enfeebled constitution and the absence of perfume which characterises many modern Roses.

He regrets also the disappearance of the Bourbon Roses, the "Alba" Roses, and the Perpetual Damasks.

The introduction of new races is counselled, and the means of obtaining them by hybridising and cross-breeding pointed out. Lord Penzance practises what he preaches, and exhibited at a recent meeting of the Society various specimens as follows:—

Sweet Brier fertilised by the pollen of H.P. La Souveraine. Sown November, 1885, seedling came up in January, 1886.

Sweet Brier fertilised with H.C. William Jesse, came up January, 1886.

Sweet Brier fertilised with pollen from H.B. Paul Ricaut.

Sweet Brier fertilised with pollen from H.C. William Jesse.

Luxembourg Moss fertilised with H.P. Princess Christian. Seed sown 1884, came up in February, 1885.

Dr. MASTERS said Lord Penzance seemed to have completely grasped one of the most important objects which the promoters of the Conference had in view,

If gardeners and florists had done so much by mingling two or three, or at the outside half a dozen, species, what might they not do if they took some of the 50 or 60 species instead of the two or three? In the future they might get beauties which they did not dream of at present.

Mr. Fish said, while they could not use hybrid perpetuals as parents they often found pollen amongst them. He did not agree with Lord Penzance's remarks on the Bourbon rose, but their perfume was rather curious and they could not be called sweet roses.

Mr. Mawley said they owed a debt to Lord Penzance for his valuable paper. He did not agree with a good deal in that paper, but it was one of those papers which excited discussion. It was very desirable that they should strike out into new lines, because it would seem that they had reached the end of their tether as regards hybrid perpetuals.

Mr. Fish said it was most important that the perfume of the leaves as well as of the flowers should be thought of. If they could get back to the Sweetbriar that end could be accomplished. The improvement of foliage should not be lost sight of.

Lord Penzance's gardener (Mr. Baskett) said his lordship had been carrying out several experiments in the direction indicated by Mr. Fish.

Mr. Baker then gave a summary of Professor Crépin's paper, explaining his subdivisions of the genus Rosa, which will be published in full in the *Journal* of the Society. After a short historical introduction, M. Crépin proposes his new scheme, according to which the genus Rosa is divided into fifteen sections, the sections being founded on the characters afforded by the styles, the sepals, the inflorescence, the number of leaflets on each leaf of the flowering branches, the stipules, the bracts, the prickles, and the general habit. The sections proposed are — 1, Synstylæ; 2, Stylosæ; 3, Indicæ; 4, Banksiæ; 5, Gallicæ; 6, Caninæ; 7, Carolinæ; 8, Cinnamomeæ; 9, Pimpinellifoliæ; 10, Luteæ; 11, Sericeæ; 12, Minutifoliæ; 13, Bracteatæ; 14, Laevigatæ; 15, Microphyllæ. Each of these sections is described, and the species allctted to it mentioned. In all about sixty species are enumerated.

New Indian Roses.—Dr. Masters showed, on behalf of Dr. King, of Calcutta, specimens of Rosa gigantea (see p. 13, fig. 4), and explained its peculiarities. Notes were also read concerning Australian Roses by Baron von Mueller and Mr. Patterson, of Sydney.

Sir Dietrich Brandis, K.C.I.E., said it was gratifying to see that the group which stood second on Mr. Baker's classification—Systylæ—had stood the test of time, that botanists had not thrust it aside. He did not know whether that small German Rose with tender white petals—the Rosa arvensis—received sufficient attention. Here the Rosa arvensis was a low trailing shrub, but in Austria and Germany it grew up to the top of very large trees. The rose moschata of India—the magnificent representative of the arvensis—was a plant which had been used by gardeners, because it had produced some very good hybrids, its white flowers climbing the largest trees and filling the air with a powerful scent for long distances. In the Blue Mountains of India was to be seen another white centred rose of the same group as Systylæ. Then there was the Rosa alpina—a rose without a thorn—certainly one of the ornaments of the European Alps. Another magnificent species, and a very strong powerful grower was the Rosa macrophylla which grew at a great elevation. With regard to the Rosa Indica, it had nothing to do with India proper. It was a Chinese rose, and the discovery of this rose between India and Burmah—a place which for the last twenty years had been in a most disturbed state, but which, under systematic British rule, would become one of the most flourishing countries—was exceedingly remarkable. There were large rose gardens in Northern India. There were fields of roses. The rose was cultivated on a very large scale there for the purpose of making rose perfumes and rose water and it was a very remarkable fact, but it was probable that these Roses were not of old cultivation in India, but they were of comparatively recent introduction. The Rose had no true Sanscrit name, which pointed to the fact that Roses were introduced by the Mohammedans after they had conquered India, and had been cultivated for centuries. In India, in days long before the Mohammedan conquest, there were gardens, and in Sanscrit songs flowers were praised, but the Rose was not amongst them. The first Rose which seemed to have been cultivated on a large scale, was the oriental damascena which was introduced probably by the Mohammedan conquerors.

Mr. Nicholson said, with regard to the Rosa gigantea, that seeds had germinated at Kew and that he thought it best to treat it as an ordinary greenhouse plant.

Dr. Masters then called attention to some points in the construction of Roses and of Rosa berberidifolia in particular.

Sir Dietrich Brandis proposed a vote of thanks to the President.

Sir Alex. Arbuthnot seconded the motion. He said the Conference had been a most interesting one, even to amateurs like himself, and he trusted that the future of their work in the cultivation of Roses would be eminently practical.

The vote was carried, and a vote of thanks to Dr. Masters and Mr. Mawley having also been carried, those gentlemen briefly responded, and the proceedings of the Conference terminated.

Among the books, &c., exhibited were—from Dr. Masters, books and plates, from which we cite the names of the Roses described, or figured:—

William Turner, *Libellus*, 1538. Facsimile reprint. (Ed. B. D. Jackson.)

In this the only two Roses mentioned are—

Cynorhodos.—Cynorhodos quantum mihi cernere datum ut frutex cuius folia primo vere suaviter olent quem vulgus opinoe vocat swetebrere aut eglentyne.

Cynosbatos.—Cynosbatos latinis, a wild hep tre or a brere tree.

John Gerarde, of London, Master in Chirurgerie. *The Herball*, 1597.

Rosa alba, R. rubra, R. provincialis sive damascena, R. p. minor, R. sine spinis, R. Hollandica sive Batava (the great Holland Rose, commonly called the Great Province Rose), R. moschata simplici flore, R. m. multiplex, R. holosericea, R. lutea, R. cinnamomea pleno-flore, R. silvestris odora, R. canina inodora, R. Pimpinella.

M. Johnson's edition, 1636. There are in addition to the above:—Rosa moschata speciis (*sic*) major, R. lutea multiplex, R. cinnamomea flore simplici, R. silvestris odora flore duplici.

Crispinus Passæus, *Hortus floridus*, 1614.

Rosa alba pleno flore, R. rubra, prænestina, R. moschetta pleno-flore.

Parkinson, *Paradisi in Sole, &c.*, 1629.

(1) Rosa anglica alba, (2) R. incarnata, (3) R. anglica rubra, (4) R. damascena, fig. 1, p. 415; (5) R. provincialis sive Hollandica damascena, fig. 2, p. 415; (6) R. p. rubra; (7) R. p. alba; (8) R. versicolor, the party-coloured Rose of York and Lancaster; (9) Rosea (*sic*) chrystallina, (10) Rosa rubra humilis sive pumilio, fig. 4; (11) R. francofurtensis, fig. 3, p. 415; (12) R. hungarica, (13) R. holosericea simplex et multiplex, (14) R. sine spinis simplex et multiplex, (15) R. cinnamomea simplex et multiplex, (16) R. lutea simplex, (17) R. l. multiplex sive flore pleno, (18) R. moschata simplex et multiplex, (19) R. m. multiplex altera alias damascena alba vel verisimilior cinnamomea flore pleno albo, (20) R. hispanica moschata simplex, (21) R. pomifera major, (22) R. silvestris odora sive Eglenteria simplex, (23) R. s. odora sive Eglanteria flore duplici, (24) R. sempervirens.

"From the Collection of Robt. Furber, Gardener at Kensington, 1730."—Coloured Plates by Casteel.

May.—(1) Cinnamon Rose, (22) Yellow Austrian Rose, (27) Red Austrian Rose.

June.—(9) Maiden's Blush Rose, (12) Blush Belgick Rose, (13) The Francfort Rose, (18) Moss Province Rose, (20) White Rose, (21) Dutch Hundred-leaved Rose, (23) Rosa mundi.

August.—(19) Striped Monthly Rose.

September.—(20) White Monthly Rose.

October.—(26) Double white Musk Rose.

A Catalogue of Trees, Shrubs, &c., by a Society of Gardeners, (Ed. Philip Miller?) 1730.

Moss Province Rose, Double Velvet Rose, Austrian Rose, Double Yellow Rose, Red Provence Rose, Artist Van Huysum.

Hale's *Compleat Body of Husbandry*, plate 45—46, 1756.

The double red Rose; the double Musk Rose; the hundred-leaved Rose; the Prænestine Rose.

Miller, Philip, *Gardeners' Dictionary*, 8th edition, 1768.

Rosa canina, R. spinosissima, R. villosa, R. eglanteria, R. scotica, R. inermis, R. hispanica, R. scandens, R. sempervirens, R. virginiana, R. lutea, R. punicea, R. moschata, R. centifolia, R. damascena, R. alba, R. belgica, R. provincialis, R. incarnata, R. gallica, R. cinnamomea, R. muscosa.

In addition to the above which Miller considered as species, he enumerates the following garden varieties:—

"The Monthly Rose, the Striped Monthly Rose, the York and Lancaster Rose, Mrs. Hart's Rose. These are all supposed to be varieties of the Damask Rose.

"The Red Belgick Rose is supposed a variety of the Blush Belgick.

"The single Velvet Rose, the double Velvet Rose, the Royal Velvet Rose. These three are all varieties; the last I raised from seed of the pale Provence Rose.

"The Childing Rose, the Marbled Rose, the double Virgin Rose. These three have great affinity with each other.

"The Cabbage Provence is only a variety of the Common Provence.

"The Blush or Pale Provence is a variety of the Red Provence.

"The White Monthly, the White Damask, are varieties of the Damask.

"The Frankfort Rose may be a distinct species, but is of little value; the flowers rarely open fair and have no odour.

"The double Sweet Brier, the evergreen Sweet Brier, the double blush Sweet Brier are varieties of the common sort.

"The Austrian Rose, with red and yellow flowers, is only an accidental variety.

"The double Yellow Rose is a variety of the single Yellow.

"The Rosa Mundi is a variety of the Red Rose.

"The small, white and semi-double white, are varieties of the common white."

From Mr. Laxton came a beautiful copy of Miss Lawrance's celebrated *Illustrations of Roses*, 1799, which excited much attention.

Messrs. W. Paul & Son showed the ninth edition of their *Rose Garden*, in two sizes; *Roses in Pots*, sixth edition; *Roses and Rose Culture*, sixth edition; *The Rose Annual*, first and second series. Mr. Cranston also showed his work on the Rose.

From Messrs. Byrne, photographers, Richmond, Surrey, came a series of magnificent photos of Roses, correctly named, representing the flowers at nine-tenths of life-size.

M. Barbey sent a photograph of Rosa lævigata to show its beauty as a hardy climbing Rose.

From the Royal Gardens, Kew, came copies of Sweert's drawings, 1620, representing the Roses of that period.

Professor Oliver contributed a drawing, by Ehret, of Rosa pimpinellifolia.

Mr. W. T. T. Dyer a similar beautiful water-colour, by Ehret, of the spineless Rose, Rosa alpina.

Mr. Machin, Worksop, a Rose shade in the shape of a Japanese umbrella.

LINNEAN.

On Thursday, June 20, Mr. Carruthers, F.R.S., President, in the chair. Messrs. A. Denny, R. Miller Christy, and John Fraser, were elected Fellows.

Dr. H. Trimen exhibited specimens and drawings of the tuberculated Lime of Ceylon, and made some interesting remarks thereon. Governor Moloney, of the colony of Lagos, West Africa, exhibited an extensive collection of butterflies and moths, the result of twelve months' collecting during the rainy season. A few Chelonians were also exhibited, and a remarkably large block of resinous gum which, in the opinion of Professor Oliver, was referable to some species of Daniellia, and which had been found in Ijo country. As an article of commerce it possessed the advantage of requiring a heat of 600° Fahr. to "run" it, so as to unite with linseed oil in the manufacture of varnish. In addition to these specimens, Governor Moloney exhibited some long-bows and cross-bows obtained from chiefs of Ibadan from some battlefield in that neighbourhood, and used by natives 300 miles from the coast line.

A communication was read from Mr. Charles Packe, on a remarkable case of prolonged vitality in a Fritillary bulb.

The meeting (the last of the season) was brought to a close by a most interesting demonstration on "Animal locomotion," by Mr. E. Mugbridge.

RICHMOND HORTICULTURAL.

June 26.—Held in the Old Deer Park, on the above date, the summer exhibition of this Society was an undoubted success, for the entries, especially in Roses, were numerous, the weather brilliant throughout, and the attendance large. The Duchess of Teck with the Princess Victoria of Teck, paid an early visit to the exhibition, and seemed to enjoy the view exceedingly.

Plant Groups.—Some good collections of plants came from Messrs. J. Laing & Son, Forest Hill, who had good Begonias, Orchids, Liliums, &c., dressed with Palms and Ferns; Messrs. Puttock and Shepherd, of Kingston, who had a very pretty group; Mr. W. Gordon, of Twickenham, who put up a fine lot of Lilies; and Mr. Chambers, of Hounslow, whose white Viola Snowflake, made a marked feature in the group.

Decorative groups were excellent, the best being a charming arrangement by Mr. W. Brown, of Richmond. Messrs. Fromow of Chiswick, and Mr. W. James, of Norwood, coming 2nd and 3rd.

In smaller groups Mr. Buckland, gr. to C. J. Adkins, Esq., Twickenham, was 1st, with a very pretty arrangement; whilst the 2nd group from Mr. F. Wigan, East Sheen, was chiefly composed of Orchids.

Stove and Greenhouse Plants.—These were but fairly represented, the best six coming from Mr. Finch, gr. to J. Marriott, Esq., Coventry, and were fresh from Oxford of the previous day. Mr. W. James had some fair plants; Mr. Bates, Poulett Lodge, Twickenham, being 3rd. Mr. Bates was stronger in the local class for six plants, having some excellent specimens.

Orchids were well shown by Mr. Henry Little, of Twickenham, who had a superb group of Lælias, Cattleyas, Oncidiums, Miltonias, &c. Mr. Little was placed 1st in the class for six plants, with very fine pieces of Cattleyas Mossiæ and Mendelii, Lælia purpurata, and Cypripediums Veitchii, Lawrenceanum, and barbatum superbum, these latter in large pans. Mr. W. James was placed 2nd, having the above-named Cattleyas also in his collection. Pelargoniums, both show and fancy, were very effective, Mr. C. Turner having the best in both classes. His fine half-dozen large flowered consisted of Amethyst, Martial, Despot, Gold Mine, Outlaw, and Marguerite. Mr. Turner also exhibited a brilliant group of Pelargoniums in smaller pots, as also did Mr. Little. Mr. Hibberd, gr. to W. Clay, Esq., Kingston, who was 2nd with six large flowered, also showed a gay group of seedlings. Mr. Little was the only exhibitor of Ivy-leaved kinds, well-flowered plants.

Very finely flowered zonal Pelargoniums single and double came from Mr. Coombs, gr. to W. Furse, Esq., Teddington, who had Robert Bloomfield, Atalie, Mrs. Gibson, and H. Jacoby in rich bloom. Mr. H. Little and Mr. Barnes, gr. to W. G. Graham, Esq., both of whom had finely flowered plants.

Ferns and Palms and foliage plants were largely shown, but call for no comment. Begonias were not up to the usual mark, but Gloxinias were excellent, Messrs. White, Redless Gardens, Isleworth, and Mr. Brooke, gr. to J. B. Hilditch, Esq., being placed 1st and 2nd respectively in a class for nine plants, and in a duplicate class Mr. Coombs and Mr. Waite, gr. to the Honble. Col. Talbot, Esher, were the prize takers, all having fine flowered plants.

Cut Flowers.—Roses were the great feature of the show, no fewer than six of the trade growers competing in the open classes for thirty-six and twenty-four trebles. In both classes the chief honours fell to the Cants of Colchester, the hot weather having suited their flowers admirably. Mr. B. M. Cant was 1st in the thirty-six class; Messrs. Paul & Son being 2nd; and Mr. F. Cant, 3rd. In the twenty-four class Mr. F. Cant came 1st; Mr. B. M. Cant, 2nd; and Messrs. Paul & Sons, 3rd. All the flowers were unusually fine and early; Her Majesty, A. K. Williams, Dr. Andry, Duke of Edinburgh, Marie Baumann, Madame Cusin, Marshall Wilder, J. Elise Vardon, Niphetos, Madame A. Laivaille, Mrs. John Laing, Marie Rady, The Bride, La France, Sunset, &c., being very beautiful.

In the amateur classes for twenty-four and twelve singles, the Rev. J. W. Pemberton, Havering, Essex, was 1st in both; Mr. H. E. West, of Reigate, being 2nd in each case.

Messrs. Veitch & Sons showed a fine collection of flowers, having Her Majesty in exceedingly good form. Messrs. H. Turner, G. Bunyard, and W. Rumsey also exhibited largely.

Table Decorations, Bouquets, Baskets, &c., were all largely represented, and were as usual very attractive. Messrs. Barr & Sons, and Messrs. Collins and Gabriel showed hardy flowers very largely.

Fruit was abundant, and fairly good. Mr. Cakebread, gr. to Sir P. Rose, Rayners Park, Bucks, had the best six dishes, showing Grapes, black and white, fine grosse Mignonne Peaches, Elruge Nectarines, &c. Mr. Osman, gr. to L. J. Baker, Ottershaw Park, was 2nd. In a class for three bunches of black Grapes, Mr. Osman was 1st with good Hamburghs; Mr. Thompson, gr. to Messrs. W. and E. Wells, Hounslow, coming 2nd with good Madresfield Court. Mr. Osman had the best whites in greenish Muscat of Alexandria.

Mr. Bates was 1st with very good Hamburghs in a local class for black varieties. Mr. Munro, Cambridge House Gardens, Twickenham, had the best whites in Buckland's Sweetwater. Peaches, Strawberries, &c., were very good.

In the vegetable classes, Mr. Waite took 1st place in an open collection for twelve kinds, also in a class for nine dishes, prizes offered by Messrs. Jas. Carter & Co.; and also for a large collection for prizes given by the Native Guano Company. Mr. Garrod, gr. to J. M. Tindall, Esq., and Mr. White also took prizes in these classes.

WINCHESTER HORTICULTURAL.

June 27.—This Society held the eighty-fourth of its annual exhibitions in the Guildhall; and although the schedule indicated a show of a general character, it practically resolved itself into a Rose show—and a very good one too. Exhibitors came from distant and widely separated places. Messrs. Harkness, nurserymen, Bedale, were repaid their long journey, by taking leading honours in the largest class (forty-eight), and for excellent fresh blooms. The best were Ulrich Brunner, Madame J. Desbois, an excellent early flowering pale pink variety; Alfred Dumesnil, Monsieur Noman, A. K. Williams, Constantin Tretiakoff, Marie Baumann, and Crown Prince; 2nd, Mr. F. Cant, Colchester, with blooms smaller, although fresh and full. Three competed.

For twenty-four, distinct, triplets, there were four entries. Here Mr. F. Cant was 1st, with blooms of good form and very fresh; Messrs. Cooling & Son, Bath, secured 2nd place with excellent flowers.

The class for eighteen Teas, distinct, produced a fine display of handsome blooms, many being of exceptional good quality. Mr. F. Cant, 1st, with a capital lot of blooms; very fine were Madame Watteville, Niphetos, Madame Cusin, Souvenir d'Elise, Innocente Pirola, Primrose Dame, Miss Ethel Brownlow, a finely formed variety, deep pink in colour. Mr. R. B. Cant was 2nd, with blooms that were smaller and thinner.

Mr. F. Cant was again successful in the class for three blooms of Teas or Noisettes; he was followed by Mr. B. Cant.

The class for a dozen blooms of any one dark variety was productive of nothing special in the way of high quality. Ulrich Brunner, highly coloured, although small, was the best, coming from Mr. B. Cant.

The same number of blooms of one light variety produced better quality. Messrs. Keynes, Williams & Co., Salisbury, took the 1st prize, with good blooms of Lady M. Fitzwilliam; Messrs. Cooling, 2nd, had Mrs. Laing in good condition.

Mr. F. Cant enriched the show with two splendid boxes of twelve Tea Rose blooms of Madame Watteville, which were in grand condition.

The twenty-four single blooms class was productive of severe competition, resulting in Messrs. Keynes being 1st, with a level lot of flowers; Messrs. Cooling 2nd, with blooms that were a trifle smaller than those in the winning stand.

The following classes were confined to amateurs for twenty-four distinct single trusses. There were six competitors—1st, Mr. A. Slaughter, Jarvis Villa, Steyning, with large, richly coloured blooms, Ulrich Brunner again showing in good form, while the remainder were mainly duplicates of flowers before named. Mr. G. Campbell, gr. to S. P. Budd, Esq., Gay Street, Bath, was 2nd, and showed well.

In the next class—that for twelve distinct trebles, Mr. Campbell took 1st prize, with a good lot; and was closely followed by the Rev. A. Foster Melliar, Sproughton Rectory, Ipswich.

For twelve distinct, single blooms of Teas or Noisettes, there were seven competitors, but by far the best blooms were those from the garden of the Rev. A. Foster, Melliar; Souvenir d'Elise, La Boule d'Or, The Bride, Princess of Wales, and Countess de Nadaillac, call for special mention. 2nd, the Rev. F. R. Burnside, Much Birch Vicarage, Herts.

The Rev. F. R. Burnside was the most successful in the class for six trebles of Teas or Noisettes; while for twelve distinct single blooms of any section, 1st, J. T. Strange, Esq., Aldermaston, Berks—his blooms of Maréchal Niel were very fine; 2nd, P. P. C. Burnand, Esq., of May Park, Reigate, Surrey.

The Silver Medals of the National Rose Society for the best hybrid perpetual, and the best Tea or Noisette, were awarded to Mr. Slaughter for H.P. Marie Rady—a flower in good form; and to the Rev. A. Foster Melliar—in the latter for a magnificent bloom of Souvenir d'Elise.

The miscellaneous classes contained some meritorious exhibits. Mr. Budd, gr. to F. Dalgety, Esq., Lockerby Hall, Romsey, staged a box of stove and greenhouse cut blooms; and Mr. Neville, gr. to F. W. Flight, Esq., Twyford, had an equally good one of cut flowers of hardy plants.

Fruit and vegetables in small quantities were shown.

THE SCOTTISH PANSY.

The forty-fifth annual show of this Society was held in Dowell's Rooms, George Street, Edinburgh, on the 21st ult. So many first-class Pansies, it was the opinion of the older members present, had rarely been brought together previously. The entries numbered about 270, and the competition was confined exclusively to Scotch growers, the open classes bringing no southern growers forward.

For the best twenty-four show blooms Mr. John Sutherland was placed first, with a fine equal lot, containing Dr. Inch, Jessie Foote, Mr. Gladstone, A. Rowland, Alex. Black, Royal Visit, Bella Watt, F. C. Gordon, and Miss Jeanie Wood as very superior flowers; Mr. Andrew Irvine, Tighnabruaich, was placed 2nd, with a less meritorious stand. Messrs. Paul & Co., Bridge of Weir, had an excellent lot of flowers, among them W. Dean, a promising seedling.

The 1st prize for the best twenty-four fancy varieties went to Mr. J. Sutherland, some of the most remarkable flowers being Agnes, W. Scott, Alex. Ollar, Neil Leitch, Pilrig, Neil McKay, Kate McArthur, and Mrs. J. Wyllie; Mr. Irvine took the 2nd position; and Mr. Lister, nurseryman, Rothesay, was placed 3rd, with a stand which it was generally conceded was second to none of its class in the room, a point that was confirmed by the judges appointed to award the special prizes, who gave it the place of honour as the "best lot of twenty-four fancies" in the show. The whole of the twenty-four were worth being recorded, and were: Donald, Morrison, Wm. McKay, Maggie A. Scott, Andrew Gray, Miss Henderson, Mrs. Goodwin, Mrs. John Downie, Archie Buchan, Mrs. Browell, Mrs. Freeland, Lord Bute. George Cromb, Neil McKay, Mrs. John Ellis, John James Ashton, Miss French, Robert Jamieson, Princess Beatrice, John Bryce, Lady of Gartshore, Neil Gillies, and Mrs. Aitkinson, a seedling not yet in commerce, which received a first-class certificate at Glasgow, in 1888; a beautiful yellow ground, with the margin of the petals broadly pencilled and shaded with deep carnation-purple; blotches of a deep dark shade of maroon: also Lord Hamilton, a flower that was exhibited for the first time, and awarded the Society's First-class Certificate as the best fancy seedling. It is of perfect form, great size, and substance; the blotches are deep mulberry on a bronze ground, the margin pale mauve, suffused with lavender—a novel combination.

For twenty-four bunches bedding Violas, Messrs. R. P. Laird & Sons, Edinburgh, were placed 1st, the most striking varieties being Archie Grant, Countess of Kintore, Mrs. Baxter, Duke of Albany, and Lord Elcho. Messrs. Dicksons & Co. were 2nd.

The best eighteen show varieties from gardeners were put up by Mr. Borrowman, of Beesluck, to whom the Silver Medal was awarded, and who took the lead in all the other Pansy classes set apart for practical gardeners. Mr. George Mark, Craigbinning, and Mr. Stewart Lenzie divided 2nd and 3rd honours between them.

Mr. Mark was 1st with bunches of Violas set up in a novel way in hollow tubes about a quarter of an inch in diameter, designed to represent a many branched flat candelabra.

Amateurs were in great force. Mr. G. Ross, Lawrencekirk, carried off the Silver Medal for the

best eighteen show blooms; and Mr. Russel, Bishopbriggs, the like honour for eighteen fancy flowers.

The classes open to gardeners and amateurs brought a very large number of entries with keen competition all round. The best twelve show and twelve fancy blooms were staged by Mr. Frazer, Linlithgow—some of the best flowers in his stand were Miss Campbell, yellow self, to which was awarded a special prize, as being the best of its class in the show; and also to Royal Visit, as being the best of its class; Alex. Black, Princess Beatrice, and Mrs. G. P. Frame, were also very fine. But the most notable bloom in the stand was Alex. Smith, fancy bronze, a seedling raised by the exhibitor, to which was awarded a first-class certificate.

First-class certificates were also awarded to a seedling fancy named Wm. Ross, raised by Mr. Geo. Mark; and to Messrs. Laird & Son, for fancy, Mrs. Robert Laird.

The "ladies' prizes," which always form a pleasing feature of these shows, and consist of floral decorations in which Violas and Pansies form the colouring materials, were this year in very good taste. The 1st prize for the best arranged table glass went to Miss du Plessis, Berlin; Miss Greive, Pilrig, being an excellent 2nd. Miss Effie Welsh, Liberton, took 1st honours for six small table glasses, most tastefully arranged; Mrs. Robert Laird being 2nd.

The President's prize—a Gold Medal—to the competitor who took the greatest number of prizes, was awarded to Mr. Borrowman.

Messrs. Laird & Sons exhibited a fine collection of varieties of Pyrethrum roseum, and Mr. Campbell, of High Blantyre, a collection of blooms of Carnations and Picotees, which, in regard to size, substance, and purity of colours, were very favourably commented upon.

FORESTRY.

THE exceptionally dry and warm weather which has prevailed throughout the North of Scotland, and other parts of the country during the month of June, has been the preservation of an immense swarm of insects, which are devastating here many of our best forest trees, shrubs, and other plants. This is a phenomenon of rare occurrence and serious import, and it is hoped that the effects may be of a more local than general character. From the time the drought began to be seriously felt, which was about the middle of the month of June, insects, especially those of the aphis tribe, began to appear upon the Birch, Wych Elm, Sycamore, and several other forest trees, and shrubs. Honeydew followed the heavy attack of aphides, and so badly affected are the trees, that the leaves are falling, especially those of the Birch and Sycamore, and to all present appearances every leaf will soon have fallen off. The fallen Birch leaves are thickly covered with honeydew, and the skins of dead aphides. On the underside of the leaves, too, are many bodies of the insects, and also some very small live ones. The insects are so numerous that the wild birds and the poultry are attracted to the places where they abound. The fallen leaves of the Birch trees are not curled like those of the Beech, Plum, Rose, &c., but are quite flat and natural in appearance. On examination with the microscope, however, they are found to be quite covered with black spots, and the underside of the leaf is cracked and dry. Many leaves are also falling off the common Sycamore trees, which present much the same appearance as those of the Birch, and these are also thickly covered with honeydew on the upper side, and with aphis mostly dead. The Wych Elm is also affected in the same manner as the Sycamore, and the leaves falling in a shrivelled and curled form beneath all the trees thus afflicted with the insects and gum; the stones, grass, and other herbage are literally covered with the sticky substance, which makes them black and loathsome to touch or even look upon. Some plots of Willows in the nursery are also infested with an aphis of a dark but variable description. Some have white streaks upon them, some are reddish, some green, others brown, but most of them are nearly black. I first observed them on Saturday last, and this day (Monday), July 1, on examining them again, I observed little or no difference in their appearance. The leaves adjacent to them (for they are in clusters near the top of the shoots) are covered with the usual gum. The stems do not yet appear to be injured, which leads to the inference that the aphis is but of recent appearance.

On Willow rods here and there, about a foot from the top, the bark appears as if it had been gnawed off by some insect, but no insects were observed. If the trees were exotics that are thus injured we might conclude that it was due to that fact, but when it is seen that our native trees, the Birch, Wych Elm, and Sycamore are infested, we are forced to assign some other cause. The subject matter is not very clear as to whether the gum is caused by the insect simply bleeding the leaf and letting the juice flow forth from its veins, and covering the upper surface of the leaf. [Honeydew is the excrement of aphides. ED.] It is also observable that honeydew and insects are most abundant on the south side of the tree, and the former is most copious in a hot day preceded by a cold or chilly night.

The Beech and especially the Beech hedges are unusually affected. The Beech aphis is white and downy, and the leaf when sucked by them curls up, withers, and prematurely falls off. This is no uncommon circumstance with the Beech in ordinary dry season, but this seasons it is exceptionally bad. I have only instanced a few of the forest trees most seriously affected, but there are many others less or more injured, indeed nearly all the foliage of every deciduous tree in the forest is gummed, and comparatively few are altogether clear of the aphis. A month ago, scarcely a tree leaf was injured, and all bidding fair for a good and prosperous forest growth; while to-day a perfect leaf is the exception, and what will be the state of things a month hence it is not safe to predict.

Any of your readers who can throw any light upon this all-important subject of gumming, will confer no small favour upon the writer, and doubtless many others. *C. Y. Michie, Cullen House, Banffshire, July* 1, 1889.

PLANTS IN FLOWER AT KEW.

LINUM ARBOREUM AND L. FLAVUM.—In spite of the fleeting character of their flowers, one or other of the above species is rarely missing in good collections of hardy flowers—a distinction richly deserved, as they are amongst the most beautiful and floriferous of our summer plants. L. arboreum, *Bot. Mag.*, t. 1794, a native of Crete, we have long considered one of the very best shrubs we possess for rockeries, &c.; planted in a crumbling artificial or imitation wall, it flowers with a profuseness we have rarely seen equalled. Unfortunately it is not proof against our very severe winters, or else it is a short-lived plant, as we have to renew it every few years. This, however, is so easily done from cuttings, which may be rooted in a cold frame, and which grow with so much vigour as to be preferred to the old twiggy plants formed in the course of a year or two. As a cool house pot-plant, where it can get plenty of sun, it answers admirably, its numerous pale yellow flowers succeeding each other daily from early spring to late summer.

L. flavum, or, as we usually get it in the trade, L. luteum, is a herbaceous perennial of equal merit with the above as regards flowering. It was introduced about 1793 from Central Europe, and is now a fairly common plant, and still amongst the choicest of our rockery subjects. The suffruticose stems are herbaceous, dying down in winter, and consequently less liable to hurt by frost. The flowers are a trifle larger and darker than the above; the leaves dark green, and not glaucous. This is often confounded with the nearly allied L. campanulatum, a native of Italy, which we have not yet seen alive. L. perenne, the pretty white L. monogynum from New Zealand, Narbonense, and a host of others, are all equally beautiful, and worth including in every good collection. *D.*

VARIORUM.

EMIGRANTS' INFORMATION OFFICE.—We are requested to give publicity to the following notice concerning emigration:—"This quarter's circulars, relating to Canada, the Australasian and South African Colonies, have just been issued, and the only change since the April circular in the grant of passages is in the case of Natal, which now grants assisted passages to nominated emigrants. Queensland is the principal colony which gives assistance to emigrants, but limits it to the classes of single female servants and selected unmarried agricultural labourers. This quarter is very suitable for going to Australia or South Africa, but emigrants, except female servants, should not go to Canada much after July, unless going to friends. Farmers with capital, and female servants, will find openings in all the colonies; agricultural labourers in Canada (till the middle of August only), New South Wales, Victoria, and some districts of New Zealand; and to a less degree in Queensland, Western Australia, and Tasmania; general labourers and navvies in parts of Canada, for the next few weeks only; railway navvies in Natal; and miners in parts of Canada and New Zealand. Owing to the continued rush to the gold-fields of the South African Republic, there is now some demand in Cape Colony and Natal for mechanics generally, but mainly for men in the building trades, blacksmiths, wagon-makers, &c.; there is also some demand at present for mechanics in a few districts of Canada. Men with families are warned against emigrating to the Argentine Republic at the present time. The circulars may be obtained, free of cost, from the office, 31, Broadway, Westminster, S.W.; and ten separate handbooks, one for each colony, and each containing a map, and a professional handbook, at 1*d.* each, post free, or, the eleven bound together, at 1*s.* 6*d.* The 1889 editions are now all ready."

MALFORMATIONS IN ORCHIDS.—Our excellent *confrère*, M. RODIGAS, once expressed the opinion that anomalous Orchids are rare, and now after long experience repeats his opinion in the *Illustration Horticole*. Our experience is widely different—a very large number have passed through our hands. Our notes and rough sketches of such productions are very numerous, even although a considerable number were lent to Professor REICHENBACH. Who will be able to decipher these rude memoranda a quarter of a century hence?

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending July 1, is furnished from the Meteorological Office:—

"The *weather* has remained fair and very dry over by far the larger portion of the United Kingdom, but slight showers have fallen at some of our extreme northern and north-western stations. Thunderstorms occurred in some parts of England on the 28th and 29th.

"The *temperature* has been from 1° to 3° above the mean in all districts, excepting 'Ireland, N.,' where it has been about equal to the normal. The highest readings were recorded, as a rule, either on the 26th and 27th, when the thermometer rose to between 74° and 80° in Ireland and Scotland, and to a little above 80° in most of the English districts. The lowest readings, which were observed on irregular dates, varied from 40° in 'Scotland, E.,' to 46° in 'England, E.,' and 'England, S.,' and to 52° in the Channel Islands.

"*Rainfall* has again been considerably less than the mean in all parts of the country. At a large majority of our stations the week has been absolutely rainless.

"*Bright sunshine* has been less prevalent than it was last week, excepting over the central, southern, and eastern parts of England, where an excess is shown. The percentage of the possible amount of duration

has varied from only 20 in 'Scotland, N.,' to 61 in 'England, E.,' and 'England, S.,' and to as much as 79 in the Channel Islands.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (—) the Mean for the week ending July 1.	Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	2 +	95	0	+ 211	+ 4	4 —	122	19.0	20	24
2	3 +	118	0	+ 122	+ 5	6 —	94	10.6	42	31
3	2 +	129	0	+ 85	+ 6	5 —	85	9.9	39	29
4	1 +	137	0	+ 49	+ 112	5 —	90	11.1	61	30
5	2 +	143	0	+ 69	+ 60	5 —	84	14.0	49	27
6	3 +	151	0	+ 84	+ 75	5 —	88	10.8	61	29
7	2 +	118	0	+ 130	— 23	7 —	101	16.4	42	32
8	1 +	124	0	+ 98	— 1	7 —	91	13.0	48	31
9	1 +	129	0	+ 20	+ 88	7 —	88	15.2	53	35
10	0 av.	113	0	+ 78	— 53	7 —	111	16.0	29	27
11	1 +	123	0	+ 50	— 14	6 —	101	16.3	38	33
12	2 +	137	0	+ 80	— 16	5 —	97	12.1	79	38

The districts indicated by number in the first column are the following :—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, July 4.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Trade continues brisk, at last week's quotations. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	5 0–	8 0	Lemons, per case	12 0–	21 0
Currants, Black, ½-sieve	4 0–	6 0	Peaches, per doz.	6 0–	18 0
— Red, ½-sieve	3 6–	4 0	Pine-apples, Eng., lb.	1 6–	2 0
Gooseberries, ½-sieve	3 0–	3 6	— St. Michael, each	2 0–	6 0
Grapes, per lb.	1 0–	3 0	Strawberries, per lb.	0 2–	0 9

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Asparagus, English, per 100	8 0–	...	Lettuce, per dozen	1 6–	...
— French, bundle	2 0–	8 0	Mushrooms, punnet	1 6–	...
Beans, Jersey French, per lb.	2 6–	...	Mustard and Cress, punnet	0 4–	...
Beet, red, per dozen	1 0–	2 0	Onions, per bunch	0 5–	...
Carrots, per bunch	0 6–	...	Parsley, per lb.	0 6–	...
Cauliflowers, each	0 6–	...	Peas, French, per qt.	2 6–	...
Celery, per bundle	1 6–	2 0	Potatos, new Jsy., lb.	0 3–	...
Cucumbers, each	0 6–	0 9	Rhubarb, bundle	0 6–	...
Endive, per dozen	2 6–	...	Shallots, per lb.	0 6–	...
Green Mint, bunch	0 4–	...	Spinach, per bushel	2 6–	...
Herbs, per bunch	0 4–	...	Tomatos, per lb.	2 0–	...
Leeks, per bunch	0 3–	...	Turnips, per bunch, new	1 0–	...

Potatos.—The market for old Potatos is now virtually over, a few best Magnums only inquired for. Supply of new Potatos not quite so heavy, and prices for sound samples rule firm at 5s. 6d. to 6s. 6d. for Kidneys and Flukes, Rounds 4s. to 4s. 6d. Home grown selling at 8s. to 9s. Kidneys, and 5s. to 7s. for Beauties. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	18 0	Ficus elastica, each	1 6–	7 0
Arum Lilies, p. doz.	6 0–	12 0	Fuchsias, dozen	3 0–	8 0
Begonias, dozen	4 0–	12 0	Hydrangea, per doz.	9 0–	18 0
Cactus, per dozen	9 0–	18 0	— paniculata, p. doz.	24 0–	36 0
Calceolarias, dozen	4 0–	9 0	Lobelias, dozen	3 0–	5 0
Crassula, per dozen	12 0–	30 0	Marguerites, doz.	6 0–	12 0
Cyperus, per dozen	4 0–	12 0	Mignonette, doz.	3 0–	6 0
Dracæna terminalis, per dozen	30 0–	60 0	Musk, dozen	2 0–	4 0
— viridis, per doz.	12 0–	24 0	Nasturtiums, doz.	3 0–	5 0
Erica, various, doz.	12 0–	30 0	Palms in var., each	2 6–	21 0
Euonymus, in var., per dozen	6 0–	18 0	Pelargoniums, per dozen	6 0–	15 0
Evergreens, in var., per dozen	6 0–	24 0	— Ivy-Leafed, doz.	3 0–	4 0
Ferns, in var., doz.	4 0–	18 0	— scarlet, doz.	2 6–	6 0
Foliage plants, various, each	2 0–	10 0	Rhodanthe, per doz.	4 0–	6 0
			Roses, H.P., doz.	12 0–	24 0
			Spiræa, doz.	9 0–	15 0
			Stocks, dozen	4 0–	6 0

Bedding Plants in variety from 1s. per doz. per box, 1s. 6d. to 2s. 6d.

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0–	4 0	Marguerites, 12 bun.	3 0–	6 0
Arum Lilies, 12 blooms	2 0–	4 0	Mignonette, 12 bun.	2 0–	4 0
Bouvardias, per bun.	0 6–	0 9	Pansies, 12 bun.	1 0–	3 0
Cactus blooms, doz.	1 6–	2 0	Pelargoniums, 12 spr.	0 6–	1 0
Carnations, 12 bun.	3 0–	6 0	— scarlet, 12 spr.	0 3–	0 6
— 12 blooms	1 0–	3 0	Primulas, dbl., 12 sp.	0 9–	1 0
Cornflowers, 12 bun.	1 0–	4 0	Rhodanthe, 12 bun.	4 0–	6 0
Delphinium, 12 bun.	3 0–	6 0	Roses, Tea, per doz.	0 6–	3 0
Eucharis, per dozen	3 0–	6 0	— coloured, dozen	2 0–	4 0
Gardenias, 12 blooms	2 0–	4 0	— red, per dozen	0 4–	1 0
Gladioli, 12 bun.	4 0–	12 0	— Safrano, dozen	0 6–	1 0
Heliotropes, 12 spr.	0 6–	1 0	— Moss, 12 bun.	6 0–	12 0
Iris, 12 bunches	4 0–	12 0	Pinks (var.), 12 bun.	2 0–	4 0
Lilac, white Fr., bun.	3 0–	5 0	Spiræa, 12 bun.	4 0–	8 0
Lilium, vari., 12 bls.	1 0–	5 0	Stephanotis, 12 spr.	2 0–	4 0
— candidum, bun.	1 0–	2 0	Sweet Sultan, 12 bun.	4 0–	6 0
— 12 blooms	0 6–	1 0	Sweet Peas, 12 bun.	2 0–	6 0
Maiden Hair Fern, 12 bun.	4 0–	9 0	Tuberoses, 12 blms.	0 6–	1 0

Orchid bloom in variety, fairly good supply.

SEEDS.

London: *July* 3. — Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that the seed market to-day was almost a blank. Some samples of this year's White Clover seed have been shown. The inquiry for new Trifolium is small. Rape and Mustard seed keep steady. Blue Peas sell at full rates. Other articles at this dull season offer no subject for remark.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended June 29:—Wheat, 27s. 11d.; Barley, 19s. 11d.; Oats, 18s. 11d. For the corresponding week in 1888:—Wheat, 31s. 4d.; Barley, 23s. 8d.; Oats, 17s. 3d.

FRUITS AND VEGETABLES.

Spitalfields: *July* 3.—Peas, 2s. 6d. to 3s. 6d. per bushel; do., 4s. 6d. to 5s. 6d. per sack; Broad Beans, 2s. to 2s. 6d. per bushel; Cabbages, 3s. 6d. to 5s. 6d. per tally; Radishes, 4s. to 6s. do.; Spinach, 1s. per bushel; Greens 1s. to 1s. 6d. per dozen bunches; Turnips, 2s. 6d. to 3s. 6d. do.; Carrots, 2s. 6d. to 3s. 6d. do.; Rhubarb, 1s. to 1s. 6d. do.; spring Onions, 3s. 6d. to 4s. 6d. do.; Seakale, 1s. to 1s. 3d. per punnet; Asparagus, 1s. to 1s. 6d. per bundle; Parsley, 1s. to 1s. 6d. do.; Mint, 1s. to 1s. 9d. do.; Cos Lettuce, 10d. to 1s. 6d. per score of 22; Beetroots, 1s. to 1s. 6d. per dozen; frame Cucumbers, 2s. to 4s. per dozen; natural do, 6d. to 1s. per do.; Endive, 1s. to 1s. 6d. do.; Mustard and Cress, 1s. to 1s. 6d. per dozen baskets; Mangels, 18s. to 19s. per ton.; Black Currants, 4s. to 6s. per half sieve; Red Currants 3s. 9d. to 5s. 6d. per do.; Strawberries, 2s. to 3s. per peck; foreign Tomatos, 1s. to 2s. per box.

POTATOS.

Spitalfields: *July* 3.—Quotations :—New: St. Malo kidneys, 4s. 6d.; Cherbourg rounds, 3s. 6d. to 4s. 6d.; do., kidneys, 5s. to 6s.; do., flukes, 5s. to 6s.; Jersey flukes, 5s. 6d. to 6s. 6d.; do., rounds, 4s. to 4s. 6d.; do., kidneys, 5s. to 6s.; St. Malo rounds, 4s. per cwt.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime old Clover, 120s. to 144s.; new, 85s. to 110s.; inferior, 45s. to 75s.; best hay, 78s. to 112s.; inferior, 20s. to 50s.; straw, old, 40s. to 45s.; do. new, 24s. to 40s. per load.

NOTICES TO CORRESPONDENTS.

Carnations: *W. B.* Of no particular merit.

Common Strawberry in London: *S. C.* There are several which answer your description. Sir Joseph Paxton, Vicomtesse Hericart de Thury, Keen's Seedling.

Echeveria: *W. G.* Singular instance of fasciation.

Insects: *J. W. M.* The insect sent is the common cocous, or scale of the Vine. The white, downy matter is full of eggs, and must be carefully scraped off and burnt, and the stem washed with soap-suds mixed with a little methylated spirit. *I. O. W.*

Names of Plants: *A. D. & Sons.* Lonicera involucrata (L. Ledebourii).—*G. Pressly.* 1, Erigeron philadelphicum; 2, Sedum roseum; 3, Campanula alpina; 4, Gladiolus ramosus. The specimen in the other box is Achillea macrophylla. — *L. D.* Physianthus albeus.—*Stainsby.* A variety of Iris xiphion.—*Parker & Sons.*—Abelia triflora probably; you should send flowers.—*C. B.* Lastræa spinulosa; 2, Next week; 3, Lithospermum prostratum; *B. S.* 1, 2, 3, 4, Iris; 5, Staphylea pinnata; 6, Echium vulgare.—*An Old Subscriber.* Stachys grandiflora and Silene armeria.—*An Old Subscriber.*—Lathyrus roseus.—*H. J. Ross.* Ornithogalum lacteum. — *T. C. Ashby.* 1, Glyceria rigida; 2, Aira caryophyllea; 3, Poa nemoralis; 4 and 5, Bromus mollis; 6, Poa pratensis.—*C. W. D.* 1, Inula glandulosa; 2 and 3, I. grandiflora.—*W.* 1, Heuchera glabra var.; 2. H. micrantha; 3, Campanula punctata; Armeria plantaginea. — *J. W. O.* 1, Bunias orientalis; 2, send again when in fruit; 3, Astragalus galegiformis; 4, Crucianella stylosa. — *T. Webb.* 1, Sambucus nigra; 2, Asperula odorata; 3, Euonymus japonicus.—*Vox.* 1, Siphocampylus glandulosus; 2, Selagianella viticulosa.—*Camjee.* The Crinum is longifolium; Odontoglossum odoratum; Cattleya Mendelii; Hedychium, probably; send when in flower, not the ginger of commerce; Hippeastrum, common form; Thalictrum flavum. No Balm of Gilead in the box.—*W. P., Epping,* Phytolacca decandra.—*J. A. C.* Border plant; Aconitum lycoctonum (poison), the pods are those of Piptanthus nepalensis.—*J. M. G.* Streptocarpus Rexii; 2, Kalmia augustifolia; 3, Gaultheria shallon.

Ouviranda fenestralis: *C. H. W.* This plant is obtainable at Messrs. Veitch & Sons, Exotic Nursery, Chelsea.

Plants for Prize: *A. P.* No. 1 list of plants is better than No. 2, containing as it does the greater number of diverse species. We think if you show an aquatic it may lead to your being disqualified by the judges. Substitute Tropæolum polyphyllum for this one.

Pelargonium: *J. G. & Co.* Bright, and would, no no doubt, make a good market variety.

Rose Shoots: *Old Subscriber.* Gnawed probably by small slugs, or by weevils. Can you not send us specimens ?

Strawberries: *J. Van Volxsen.* Can you catch any of the insects, and send them over to us ?

Strawberry: *F. F.* Why do you send Strawberries in a slender pasteboard box ? The box itself was smashed and the contents reduced to a pulp on arrival at our office, so of course, we were unable to name the fruits.

The Large Aroid: *J. J.* No; your informant, the lecturer, was misinformed. The plant in question is *not* Rafflesia Arnoldi! The lecturer should have studied his *Chronicle* before he ventured to address his audience.

Vines: *O.* Some of the leaves sent show signs of having been infested with red spider, and others of the insufficient nature of the ventilation afforded.

Communications Received.—O. Andersen.—W. K. (shortly). T. J. Seidel.—Little & Ballantyne.—P. L. S.—J. S. (in a day or two).—J. H. M.—G. C.—W. S. (thanks for report, but it must wait till next week.—T. B. W.—T. H.—W. T. D.—A. C. R.—W. G. S.—J. J. W.—R. D.—C. J. B.—I. O. W.—W. R.—F. C. Heinemann (see our Almanac for 1889).—H. A. B.—G. H. S.—Ewing & Co.—G. S. B.—R. A. R.—W. M. R.—T. A. B.—Lord P.—J. R. J.—W. C.—F. W. B.—J. V.—Sir C. D.—J. G. L., California.—W. B. Valleyres.—C. de B. Ghent.—M. Cochet.—M. C. Godet.—B. D. J.—Sir D. B.—R. D. B.—R. I. R.—J. B., Manchester.

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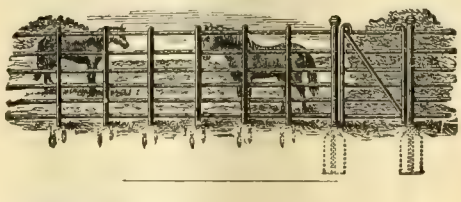
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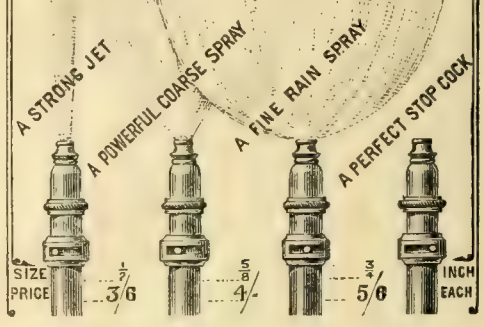
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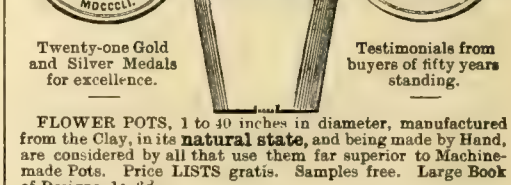
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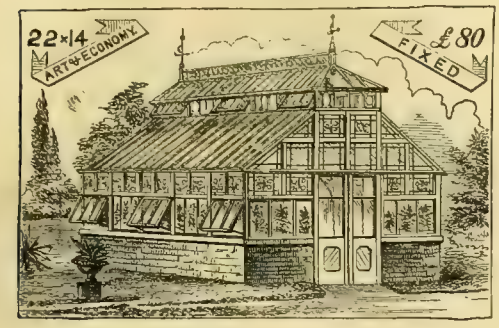
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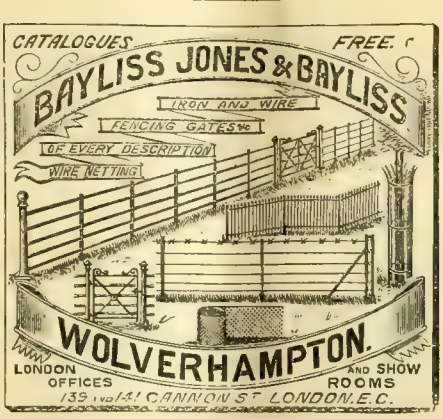
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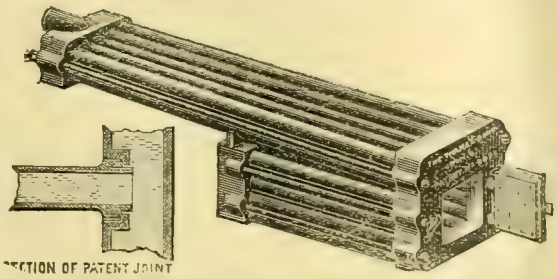


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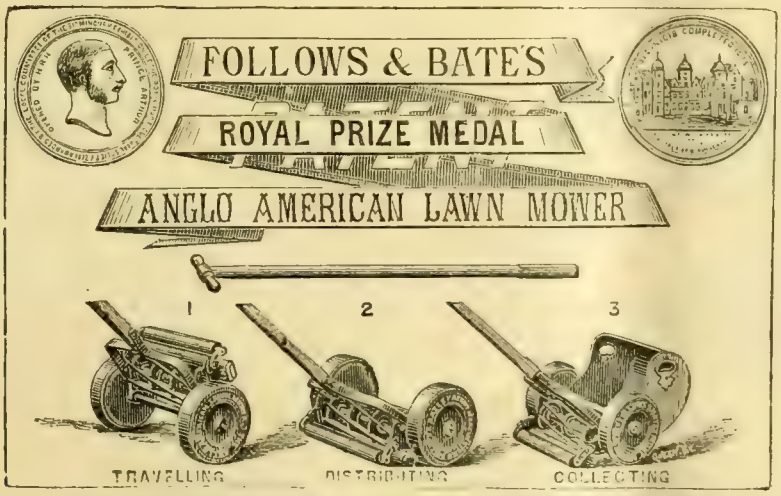
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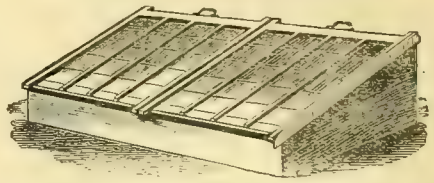
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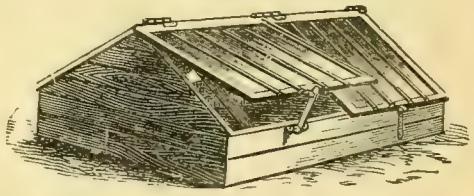


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6	,, ,,	24 ,,	by 6 ,,		8 0 0

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6 feet ,,	5 feet ,,		3	10	0
12 feet ,,	5 feet ,,		5	17	6

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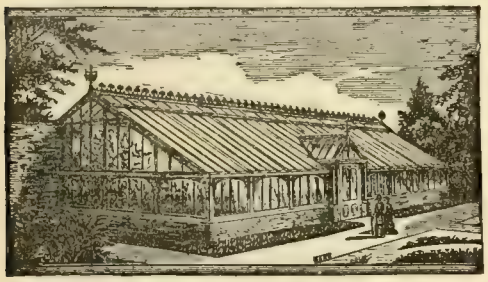
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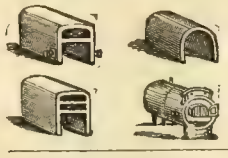
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PATENT SELF-ACTING HYDRAULIC RAMS,

For Raising Water for the Supply of Towns, Villages, Irrigation, Railway Stations, Mansions, Fountains, Farms, &c.

No Cost for Motive Power, which is obtained from the Stream of Water passing through the Ram.

NO OILING OR PACKING REQUIRED.

MADE IN SIZES TO RAISE FROM 300 TO 500,000 GALLONS PER DAY. WILL FORCE TO A HEIGHT OF 1500 FEET.
SPECIAL RAMS for HIGH FALLS to send up to One-Third of the Water passing through them.

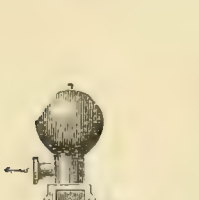
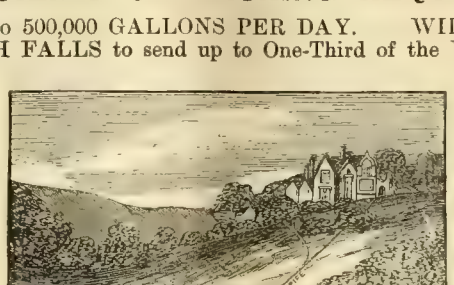


Fig. A.

This Ram raises a portion of the same water that works it.



This view represents Fig. A Ram forcing up a part of the same water that works it, which is supplied from a spring. Special Rams of A make can be supplied to force to a height of 800 feet.



Fig. B.

This Ram, whilst worked by a stream of impure water, will pump clean water from a well or spring.

TESTIMONIALS FOR JOHN BLAKE'S PATENT SELF-ACTING HYDRAULIC RAMS:

From C. PAGE WOOD, Esq., Wakes Hall, Wakes Colne, Essex, January 11th, 1889.

"Sir,—In reply to your inquiry, the Hydraulic Ram you put down for me in 1884 has cost me only sixpence in repairs (for a new stud my blacksmith made); the second Ram you put down to supply an off-hand farm, has been running three years, and has cost not a penny for repairs; the third and largest Ram put down two months ago, which is for the supply of water to my neighbours, is running satisfactorily.

"All three Rams throw up more water than you guaranteed. From inquiries I have made from friends who have Rams of other makers, I am convinced of the superiority of yours, and my third order is a proof of my good opinion. My abundant water supply is the greatest possible comfort to me.

"Yours faithfully,
"C. PAGE WOOD."

From MATTHIAS SMITH, Esq., Hill Top Hall, Pannal, near Leeds, January 14, 1889.

"Dear Sir,—I have great pleasure in bearing testimony to the marvellous efficiency of the Ram you fixed here in January, 1888. It is worked by spring water of irregular volume, the dry-weather flow being 6 pints per minute, with which quantity you promised to work the Ram, forcing through 330 yards of delivery pipe to an elevation of fully 144 feet, but out of 5½ pints per minute, 166 gallons per day are sent up; and out of 2 gallons per minute now flowing through the Ram, 540 gallons per day are delivered at the same height.

"Considering the extremely small quantity of driving water, I certainly did not expect so grand a result. With every wish that you may get the reward you deserve,—I am, dear Sir, yours faithfully,
"MATTHIAS SMITH."

From Mr. THOMAS VARLEY, Agent to the Trustees of the late William Roundell, Esq., Gledstone Estate, West Marton, Skipton, August 11, 1887.

"Dear Sir,—The Patent Hydraulic Ram you fixed five years ago on this estate is still working as well as it did on the day it started. It is driven by spring water carried along the hillside in 950 yards of iron pipe, and forces up an abundant supply to an underground tank on the hill at a distance of two miles from, and at an elevation of 280 feet above the Ram. The water is then gravitated through several pipes and branches, having a total length of about four miles, for the supply of the mansion, gardens, stables, estate workshop, and steam boiler, the village of West Marton, and several farms. There are five fire-plugs inside the mansion, and seven outside; and as the underground reservoir is 70 feet above the mansion, seven jets of water can be thrown over the house in case of fire. As there is still a considerable overflow from the underground reservoir running to waste, I intend to form a second reservoir at a lower level, and utilize the water for other farms. I have much pleasure in being able to report as above."

VILLAGE WATER SUPPLY.

From J. B. McCALLUM, Esq., C.E., Borough and Water Engineer, Blackburn, Nov. 1, 1886. *Guide (Borough of Blackburn) Water Supply.*

"Dear Sir,—Following is the short report I promised to send as to the work performed by the Hydraulic Rams—supplied by you to the Blackburn Corporation—after they had been in operation sufficient time to take proper observations.

"The district of Guide—population about 500—in the Borough of Blackburn, is situated above the highest reservoir of the Blackburn Waterworks, and had no regular water supply until last July, when the Water Committee caused two of your Patent Hydraulic Rams to be put down and worked by water from a reservoir having a varying but maximum head of 34 feet 3 inches on the rams—the waste (clean) water gravitating to a lower adjacent reservoir.

"You contracted to supply rams which would force 8000 gallons per day each through 1295 yards of delivery pipe to a service tank 170 feet above the rams, and I am bound to state that the result has considerably exceeded my expectations, as the rams are capable of pumping and have pumped much more water than you promised. The percentage of efficiency exceeds all I expected, and is, in my opinion, much more than is usually obtained from hydraulic rams.

"From a test I made on September 29, I found that two rams with ½ inch and ⅝ inch strokes respectively, supplied with 194,030 gallons per day, together pumped 26,090 gallons per day to a height of 170 feet, giving 71·43 per cent. of efficiency, and one ram working at ⅝ inch stroke, and with only 16 feet of working fall supplied with 154,587 gallons per day pumped 10,587 gallons per day to the same height, showing 72·75 per cent. of efficiency.

"At a subsequent test on October 11, one ram at ⅝ inch stroke, and having 31 feet 9 inches of working fall supplied with 121,083 gallons per day, pumped 17,583 gallons per day to an elevation of 171¼ feet, the efficiency in this case being 79·57 per cent.

"In arriving at these results, the greatest care was taken to positively measure the water, besides having a meter-check on feed and delivery-pipes.

"The work carried out by you at Blackburn is substantial and satisfactory in every way, and if any engineer wishes to make his own observations he is at liberty to come here and do so."

From WM. DICKINSON, Esq., Agent to the Most Honourable the Marquess of Abergavenny, K.G., Eridge Estate Office, Hargate Lodge, Tunbridge Wells, July 3, 1885.

"Sir,—I am instructed by the Marquess of Abergavenny to say that the Patent Hydraulic Ram, with over two miles of pipes, forcing water to a height of 230 feet, which you erected at Eridge Castle about nine months ago, has given his lordship entire satisfaction, and he has every confidence in its continuing to do so.—I am, Sir, yours faithfully, "William Dickinson."

From J. A. RUTHERFORD, Agent to C. F. H. Bolckow, Esq., Estate Office, Marton Hall, Middlesbrough, September 26, 1883.

"Dear Sir,—I am glad to say that the Rams you put down on the Hambleton Estate for Mr. C. F. H. Bolckow are working very well. You undertook, with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams at full power, 2000 gallons a day. With a supply of 11¾ gallons per minute they are lifting 2200 gallons, and when working full power 3105 gallons per day are sent up to a height of nearly 400 feet. They made a clear start, and have gone well since." (The delivery pipe in the above case is 9000 feet in length.)

JOHN BLAKE, HYDRAULIC RAM WORKS, ACCRINGTON, LANCASHIRE, ENGLAND.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C
Printed by William Richards, at the Office of Messrs. Bradbury, Agnew, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said William Richards at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden in the said County.—Saturday, July 6, 1889. Agent for Manchester—John Heywood.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2533.

No. 133.—Vol. VI. {Third Series.} SATURDAY, JULY 13, 1889. [Regt. as a Newspaper. {Price 3d. Post-Free, 3½d.

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ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, N.W.
FLORAL PARADE and FEAST of ROSES, MONDAY NEXT, July 15.
Gates open at 2 o'Clock. The Bands will play from 2 to 7. Tickets to be obtained at the Gardens only by Vouchers from Fellows of the Society, price 10*s.* each; or on the day of the Fête, 20*s.*

LUTON HORTICULTURAL SOCIETY.
ANNUAL SHOW, JULY 24 and 25. Open Division, First Prize £10. For particulars, apply to
J. GARDENER, Hon. Sec.
30, Langley Street, Luton, Beds.

TRENTHAM and HANFORD HORTICULTURAL SOCIETY.
The SECOND ANNUAL EXHIBITION will be held in Trentham Gardens, on JULY 25, by kind permission of the Duke of Sutherland. PRIZES to the amount of ONE HUNDRED and FIFTY POUNDS will be given. First Prize Collection, Fruit, 8 dishes, distinct, £7. 36 Roses, distinct, £8. Entries close, July 17. For Schedules, apply,
JOHN TAYLER, Trentham, Stoke-on-Trent.

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A GRAND FLOWER SHOW and GALA, will be held in the above Park, on TUESDAY, August 6. Schedules, &c., apply,
JNO. BURN, Hon. Sec.

STAMFORD and DISTRICT HORTICULTURAL SOCIETY'S SHOW, FRIDAY and SATURDAY, August 9 and 10. Special Prizes (open to all) for Roses. For schedules, &c., apply, ARTHUR WM. EDWARDS, Sec.

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THE
ANNUAL DINNER and great gathering of GARDENERS
WILL TAKE PLACE AT THE
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ON
FRIDAY NEXT, the 19th inst.
The President, SIR JULIAN GOLDSMID, Bart., M.P., in the Chair.
Tickets 5*s.* each, may be obtained of the Hon. Sec.,
A. F. BARRON.
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Sow Now.
SUTTONS' FLORISTS' FLOWER SEEDS.—Suttons' Perfection Calceolaria, 3*s.* 6*d.* and 5*s* per packet; Sutton's Superb Cineraria, 2*s.* 6*d.* and 5*s.* per packet; Sutton's Prize Gloxinia, 2*s.* 6*d* and 5*s.* per packet; Sutton's Prize Cyclamen, 2*s.* 6*d* and 5*s.* per packet; Sutton's Prize Begonia, 2*s.* 6*d.* and 5*s* per packet; Sutton's Superb Primula, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* per packet. All Flower Seeds sent free by Post.
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SALES BY AUCTION.

Friday next.
CATTLEYA MENDELII, a fine importation.
ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are instructed to Messrs. Shuttleworth, Carder & Co. to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, July 19, at half-past 12 o'Clock, a fine importation of CATTLEYA MENDELII, together with about 150 Lots of CHOICE ESTABLISHED ORCHIDS.

On view Morning of Sale, and Catalogues had.

Special Sale.—Tuesday, July 30.
ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SALE of ORCHIDS in FLOWER will take place as above, for which they will be GLAD TO RECEIVE NOTICE OF ENTRIES AS EARLY AS POSSIBLE.

Acton.
Important to Builders, Florists, Speculators, and others.
An exceedingly CHOICE FREEHOLD ESTATE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, July 31, at 2 o'Clock, in one Lot, the VALUABLE FREEHOLD NURSERY or BUILDING ESTATE, known as the Priory Nursery, Acton Lane, Acton, situate within a few minutes' walk of Acton, South Acton, Acton Green, and Turnham Green Railway Stations.

The Estate comprises an area of about 4 Acres, with 28 well-built Greenhouses, containing nearly 40,000 feet of Glass, heated by 9000 feet of Hot-water Piping, Stabling for 4 Horses, Coach Houses, and Numerous Trade Buildings. The Property possesses great advantages for being continued as a Nursery, but the Land is thoroughly ripe for Building Purposes, and, with the important frontages of 383 feet, affords ample scope for development for Building Purposes. The Subsoil is fine Sand. Possession will be given on completion of the purchase.

Particulars, with plan, may be had on the Premises; at the Mart, E.C.; of Messrs. FORD, LLOYD, BARTLETT AND MICHELMORE, Solicitors, 4, Bloomsbury Square, W.C.; of W. H. HUDSON, Esq., Solicitor, 1, Furnival's Inn, E.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C.; and Leytonstone.

Special Sale of Orchids in Flower and Bud.
THURSDAY NEXT, July 18, instead of Wednesday, as previously announced.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 18, at half-past 12 o'Clock precisely, instead of Wednesday, as previously announced, a fine COLLECTTION of ORCHIDS in FLOWER and BUD, comprising Cologyne cristata alba, Cattleya Gaskelliana alba, C. Schofieldiana, C. Leopoldii, Odontoglossum Alexandræ, fine varieties; O. Hastilabium Dendrobium nobile nobilius, Oncidium macranthum, grand specimens; choice Masdevallias, including M. Veitchii grandiflora, &c.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7955.)
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MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, July 18.

On view morning of Sale, and Catalogues had.

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SILVER HALL NURSERY, Isleworth, about ¼ acre, comprising 10 Houses, well stocked with Cucumbers, Tomatos, Ferns, &c.; very fine Azaleas, Solanums, Bouvardias, and miscellaneous Bedding Plants, Pear Trees, Apple Trees, Plums, Currants, Gooseberries, &c.

MESSRS. WALPOLE, LEWIN AND CO. will SELL the LEASE and GOODWILL of the above BUSINESS by AUCTION, at the Mart, Tokenhouse Yard, E.C., on WEDNESDAY, July 24, 1889, at 1 o'Clock precisely.

Particulars and conditions of Sale may be had of J. F. DAVIES, Esq., Solicitor, 26, Putney Bridge Road, S.W.; at the Mart, E.C.; on the Premises, and of the Auctioneers, 41 and 41A, Wilton Road, S.W.

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Terms, &c., by applying to S. BEACH, as above.

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STOVE and GREENHOUSE PLANTS, suitable for table and other purposes, in great variety.

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First-class German flowering Crowns.
Any quantity.
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Breslau.

THE
GARDENERS' ORPHAN FUND.
NOTICE.

THE ANNUAL GENERAL MEETING of the SUBSCRIBERS to this FUND will be held at the "CANNON STREET HOTEL," on FRIDAY, July 19th next, for the purpose of receiving the Report of the Committee and the Accounts of the Fund for 1888-9, Electing Officers for the ensuing year, Amending Rule XII, and for the Election of Five Children to the benefits of the Fund.

The Chair will be taken at 2 o'Clock precisely, and the Ballot will close at 4 o'Clock.

The Dinner will be held the same evening at 5 o'Clock. Tickets, 5*s.* each.

A. F. BARRON, *Honorary Secretary.*
Royal Horticultural Society's Gardens,
Chiswick, London, W.
July, 1889.

P.S.—The Voting Papers have all been issued; any Subscriber not having received one, is requested to communicate with the Secretary.

Bouvardia Mrs. Robt. Green.
H. B. MAY offers the above new and distinct BOUVARDIA; see Coloured Plate and description in *The Garden* for March 30, 1889. Also PRESIDENT CLEVELAND, and all the best Double and Single varieties. Plants in splendid condition for winter flowering.
Price, &c., on application.
Dyson's Lane Nursery, Upper Edmonton.

YEWS (Golden and Seedling Variegated).—Now is the time to see these lovely Trees in their glorious splendour of colour. Nothing can exceed their magnificent beauty, and no place, however small, should be without them. Purchasers are invited to inspect our unrivalled stock. Come and select your plants for removal next autumn; also all kinds of Ornamental Trees in every shade and tint. ROSES and CLEMATIS in pots in large quantities.
H. LANE AND SON, Nurseries, Great Berkhamstead.

CHOICE SUCCULENTS,
FOR CARPET BEDDING.
ECHEVERIA METALLICA, ECHEVERIA AGAVOIDES, 9*s.* per dozen. ECHEVERIA CUSPIDATA, 4*s.* per dozen.
PACHYPHYTUM BRACTEOSUM, 5*s.* per dozen.
SEMPERVIVUM TABULÆFORME, 6*s.* per dozen.
KLEINIA REPENS, 3*s.* per dozen.
ALTERNANTHERAS, of sorts, in pots, good plants, 2*s.* 6*d.* per dozen, 15*s.* per 100.
IRESINES, in pots, 2*s.* 6*d.* per dozen, 15*s.* per 100.
CENTAUREA CANDIDISSIMA, 3*s.* per dozen, 20*s.* per 100.
PETUNIAS, single, in pots, 2*s.* per dozen, 12*s.* per 100.
AGERATUMS, in pots, 2*s.* per dozen, 12*s.* per 100.
CATALOGUE of these and other varieties, and all you want for a garden, free by post, from
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

PTERIS CRETICA NOBILIS.—A most distinct and beautiful crested FERN. First-class Certificates from Royal Botanic and Royal Horticultural Societies. The finest stock of Ferns in the trade. Priced LIST on application.
H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

SAMUEL SHEPPERSON, FLORIST, Prospect House, Belper, Derbyshire, begs to offer the following, of which he has made a specialty for the last 25 years:—
PRIMULAS—PRIMULAS.—Grand premier prize and Covent Garden strains of the finest new colours, as pure white, carmine, rose-salmon, crimson, spotted, purple, &c. Fine large trusses, and beautifully fringed flowers. Strong Plants to bloom well, 1*s.* 6*d.* per doz.; 4 doz., 5*s.*; 100, 9*s.*; very extra strong, 2*s.* per doz.; 4 doz., 7*s.*; 8 doz., 12*s.* All carriage free.
CINERARIAS.—Finest prize strains and latest new colours. Same price as Primulas. All carriage free.
CYCLAMENS — CYCLAMENS (GIGANTEUM). — Same grand strain that I have sent out for the last 25 years, but with all the latest improvements in colour, size, form, and habit. Five-year-old Plants for potting on, 2*s.* per doz.; 4 doz., 7*s.*; 100, 12*s.* All carriage free.
S. SHEPPERSON, Florist, Belper.

"GEMS"—"GEMS"—"GEMS"
of Choice Stove Plants.
OXERA PULCHELLA—dense clusters, 8 to 10 inches across, of pure white, funnel-shaped flowers, about 2 inches long and 1 inch across. Flowers in winter very lasting, graceful and beautiful. 5*s.*
SCHUBERTIA GRANDIFLORA—flowers white with delightful, almond-like fragrance, produced in large trusses, similar to Stephanotis. Excellent for cutting. 2*s.* 6*d.* and 3*s.* 6*d.*
STEPHANOTIS FLORIBUNDA—the finest variety in cultivation, and freest bloomer, flowering at every joint, and blooms in a lower temperature than any other variety we know. 1*s.*, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*; and fine specimens 21*s.*, 31*s.* 6*d.*, and 40*s.* each.
STIGMAPHYLLUM CILIATUM (Golden Vine)—flowers rich orange, similar to the lovely Orchid Oncidium flexuosum. Very distinct. 2*s.* 6*d.* each.
TOXICOPHLÆA SPECTABILIS (Winter Sweet)—large dense sprays of white flowers, sweetly perfumed. Beautiful winter-flowering plant. 2*s.* 6*d.* and 3*s.* 6*d.* each.
GLONERA JASMINIFLORA—one of the most beautiful white-flowering plants for either cutting or decoration. Blooms in the winter or early spring, and worthy of a place in the most select collection. 2*s.* 6*d.* and 3*s.* 6*d.*
CATALOGUES of these, and all you want for a Garden free, by post from
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey, and Flower Market, Covent Garden, W.C.

ROSES IN FLOWER. A splendid display of ROSES now in bloom. Inspection invited. Cut Blooms can be supplied daily

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(Limited.)

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Apply to Mr. SETTERINGTON, Landscape Gardener, 103, Boundary Road, St. John's Wood, N.W.

PASTUPLANTA, the best Artificial Manure. It enriches the soil with the fertilisers drawn from it by plants; no unpleasant smell; admirably adapted for all pot plants. In bags: 112 lb., 19*s.*; 56 lb., 11*s.* 3*d.*; 28 lb., 6*s.* 9*d.*; 14 lb., 4*s.*; 7 lb., 2*s.* 3*d.* In tins, 1*s.* each. Sole Manufacturers, PHILIP HARRIS AND CO. (Limited), 9, Bull Ring, Birmingham.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens. All Sacks free.
Cocoa-nut Fibre Refuse, fresh, 1 sack, 1*s.* 3*d.*; 10 sacks for 12*s.*; 15 for 17*s.*; 20 for 20*s.*; 30 for 28*s.*; 2 ton truck free on rail, 30*s.* Best Brown Fibrous Kent Peat, 5*s.* per sack; 5 for 22*s.* 6*d.*; 10 for 35*s.* Best Black Peat, 4*s.* 6*d.* per sack; 5 for 20*s.* Coarse Bedfords' Sand, 1*s.* 6*d.* per bushel; 14*s.* half ton; 25*s.* per ton. Potting Composts, 5*s.* per sack. Genuine Peruvian Guano, Crushed Bones, Fertilisers, &c. Fresh Sphagnum Moss, 2*s.* 6*d.* per bushel; 6*s.* per sack. Charcoal, 2*s.* 6*d.* per bushel; 8*s.* per sack. Flower Sticks, painted and unpainted; Labels, and Bamboos. Best Raffia, 1*s.* per lb.; 7 lb. for 5*s.* 6*d.* Pure Leaf Mould, Peat Mould, and Yellow Fibrous Loam, each 1*s.* per bushel; 3*s.* per sack. Spécialité Tobacco Paper, and Cloth, 1*s.* per lb.; 28 lb. for 26*s.* Mushroom Spawn, best quality, 4*s.* per bushel. Russia Mats, 10*s.* to 18*s.* per dozen. Virgin Cork, 28 lb., 5*s.* 6*d.*; 56 lb., 10*s.*; 1 cwt., 17*s.* Write for free Price List.—W. HERBERT AND CO., Hop Exchange, Southwark Street, London, S.E. (near London Bridge).

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CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.
EPPS & CO. are now prepared to offer **PEAT**, as above, of first-class quality, at lowest prices. Prices on application. Depôt for HORTICULTURAL SUNDRIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA-FIBRE REFUSE, CHARCOAL, and ARTIFICIAL MANURES.

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GARDEN REQUISITES.
TWO PRIZE MEDALS.
Quality, THE BEST in the Market. (All sacks included.)
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each.
GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Cloth or Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c. Write for Price List.
Terms strictly Cash with order.
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COCOA-NUT FIBRE REFUSE.
4*d.* per bushel; 100 for 25*s.*; truck (loose, about 2 tons), 40*s.*; 4-bushel bags, 4*d.* each.
LIGHT BROWN FIBROUS PEAT, 5*s.* 6*d.* per sack; 5 sacks, 25*s.*; sacks, 4*d.* each.
BLACK FIBROUS PEAT, 5*s.* per sack, 5 sacks, 22*s.*; sacks, 4*d.* each.
COARSE SILVER SAND, 1*s.* 9*d.* per bushel; 15*s.* per half ton; 26*s.* per ton, in 2-bushel bags, 4*d.* each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1*s.* per bushel.
SPHAGNUM MOSS, 8*s.* 6*d.* per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—**H. G. SMYTH,** F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

TOBACCO PAPER, best quality, 1*s.* per lb.; 14 lb., 13*s.* Do. CLOTH, 1*s.* per lb.; 14 lb., 13*s.* Do. FIBRE, much stronger, and better than Cloth or Paper, 1*s.* per lb.; 14 lb., 13*s.* 28 lb. carriage paid to any station. The Trade supplied.—PEIRCE AND CO., Belvoir Rd., St. Andrews, Bristol.

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For GREENHOUSE or GARDEN.

Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
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And in 6*d.* and 1*s.* packets.
To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts. Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

LEMON OIL INSECTICIDE.—The best of all preparations for easily, cheaply, and effectually cleaning Plants from Green-fly, Thrip Scale, Bug, &c. Follow the directions, and you will always use it.
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A CURE AT LAST FOR THIS DREADFUL PEST.
Eucharis, treated according to the directions, and grown with ordinary cultural care, become healthy in a short time, as a trial will convince. *Numerous Testimonials.*
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SAFE, SURE, CHEAP, and RELIABLE.
No Mealy Bug
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No Red Spider
No Slugs
No Insect Pests
of any description.
THE **"DEMON" INSECTICIDE.**
The surest, safest, most effective, and economical Insecticide ever invented for use alike in the Greenhouse, Flower and Kitchen Gardens.
1 gallon makes 160 gallons of Insecticide.
On Receipt of Sixpence in Stamps we will post free, to any address, a sample ½-pint tin—a practical trial will speak louder than words.
Testimonials constantly received.
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Manufacturing Chemists, **Bridgnorth.**

BONES!—BONES!!—BONES!!!
Crushed Bones in all sizes for Vine Borders, Lawns, Potting, Grass Lands, &c. Also BONE MEAL for Poultry Feeding, GARDEN GUANO, DISSOLVED BONES, Special MANURES and FERTILIZERS for all purposes.
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GARRETT LANE, WANDSWORTH, SURREY, S.W.

THE **"PERFECT" WEED KILLER**
TRADE MARK. SWIFT & SURE.
Maintains its Superiority over all Rivals
for permanently destroying vegetation on Walks, Carriage Drives, Ash Tennis Courts, Stonework grown green, &c.
Used at Kew Gardens, Royal Horticultural Gardens, &c., &c.
COMPLETE SATISFACTION GUARANTEED
to all using WEED KILLER bearing our Trade Mark, without which none is genuine. *Refuse Imitations.*
PRICE—Gallon 2/, 5 gal. 1/9, 10 gal. 1/6, 40 gal. 1/4 per gal.
SPECIAL QUOTATIONS FOR QUANTITIES.
Carriage paid 5 gals. and upwards. Trial sample post free.



DISTRIBUTOR for "Perfect" Weed Killer.
Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 ins. wide. Price £4 net on rail Glasgow.
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SOLD BY SEEDSMEN AND FLORISTS.

BENTLEY'S WEED DESTROYER.
Mr. ELWORTHY, *Nettlecombe Court, writes:*—
"I have tried two factors, but I find yours much the most destructive."
For full particulars apply to
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Blight—Blight—Aphis and Blight.
TUCKER'S EUCALYPTUS DISINFECTANT FLUID Destroys these Pests. 1*s.* and 2*s.* a Bottle.
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THE CELEBRATED "ACME" SAFE **WEED KILLER.** CHEAPEST & BEST.
For Destroying Weeds on Garden Walks, Carriage Drives, Stable Yards, &c., also for Killing Plantain on Lawns. Saves more than twice its cost in Labour. No Smell.
One application will keep the Walks clear of Weeds for at least Twelve Months.
Used in the CRYSTAL PALACE GARDENS, the ALEXANDRA PALACE GROUNDS, the CAMBRIDGE BOTANIC GARDENS, and many other Public and Private Gardens.
Mr. W. G. HEAD, Superintendent of the Crystal Palace Gardens, says:—"We were so satisfied with your Weed Killer and its price, that we have used it absolutely. I have every confidence in recommending it."
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Used in the proportion of 1 gallon to 25 gallons of water, and applied with an ordinary watering can.
SOLE PROPRIETORS AND MANUFACTURERS—**The AGRI-HORTICULTURAL CHEMICAL COMPANY, Tunbridge, Kent, and Carlton Street, Bolton, Lancashire.**
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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

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A man can work a 24-inch machine.
There is no easier working, no better finished, no stronger, no more durable mower in the market.
The Front Roller, with simple adjustment for regulating height of cut, enables the machine to cut close to the ground, and to do fine work, besides adapting it for verge cutting.
To be obtained through all the leading Ironmongers or Seedsmen, or from the Sole Licensees,
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STOCK SIZES — Inches.	SIZES — Inches.
14×12	20×15
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18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.
English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.
"HORTICULTURAL PUTTY." Own Special Manufacture.
GEORGE FARMILOE & SONS,
LEAD, GLASS, OIL, and COLOUR MERCHANTS,
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Stock Lists and Prices on application. Please quote *Chronicle.*

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The Stock is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent.

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ROSES IN POTS. The finest Hybrid, Perpetual, Tea-scented, and other varieties, from 15*s.* to 42*s.* per dozen.
Catalogue of new varieties on application.

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New and General PLANT CATALOGUE Post-free.

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THE NURSERIES,
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Selection of the above, from Borneo, Manilla (Philipines), Bangkok, Java, Rangoon (Burmah), &c., to the extent of £5 and upwards, packed and shipped (at consignee's risk) on receipt of order with remittance. Address,

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UPPER WILKIE ROAD, SINGAPORE.
Special care given in packing.
NEW VARIETIES ALWAYS ON HAND.

ORCHIDS.—Clean, well-grown plants, at low prices. Specimen Orchids a specialty. Price List free, JAMES CYPHER, Exotic Nurseries, Cheltenham.

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16 VARIETIES of STRAWBERRIES, which R. Gilbert considers the cream. They include all the modern varieties, but the good old Standards are not forgotten. In pots for forcing, and ordinary hand layers.
Send for R. G.'s STRAWBERRY LIST, where all are described and priced, with Hints upon Culture. Warranted true to name.
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By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

LILIES OF THE VALLEY!
English-grown!
The best for early forcing, finest large flowers, and superior in every respect to German crowns. Price per 1000, 10,000, to 100,000 on application.
T. JANNOCH, Lily of the Valley Grower by Special Appointment to H.R.H. The Prince of Wales, Dersingham, King's Lynn, Norfolk.

PRIMULAS, Double White, 5*s.* per doz., 35*s.* per 100. Prices for quantities on application. Terms cash with order.
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Carnation Apricot (Mrs. Reynolds Hole).

H. B. MAY offers the above beautiful CARNATION. Also all the best Winter Flowering varieties. The largest stock in the trade.
Priced LIST on application.
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VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
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Price 5*s.*, post-free 5*s.* 6*d.*
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80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12*s.* to 24*s.* per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2*s* 6*d.* each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2*s.* 6*d.* each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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TRADE OFFER OF PALMS, ETC.

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,, BAUERII	30	0	,,	60	0	,,
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CORYPHA AUS.	18	0	,,	30	0	,,
CHAMÆROPS E.	24	0	,,	15	0	each.
EUTERPE EDULIS	6	0	,,	24	0	,,
GENOMA GRAC.	9	0	,,	60	0	,,
KENTIA BEL.	9	0	,,	60	0	,,
,, FOST.	9	0	,,	60	0	,,
LATANIA BOURB	6	0	,,	60	0	,,
PHŒNIX REC.	6	0	,,	60	0	,,
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DRACÆNAS, OPHIOPOGON, FICUS, PANDANUS VEITCHII.

Prices for larger Plants on application. Inspection invited.
WILLIAM ICETON, Putney Park Lane, Putney, S.W.; and Flower Market, Covent Garden.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per dozen.

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Nurserymen and Seed Merchants,
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1400 species and varieties of Stove, Greenhouse, & Hardy Ferns.
Partially descriptive CATALOGUE free on application.
Illustrated CATALOGUE (No. 21), containing 120 Illustrations, and much valuable information on the Cultivation of Ferns, 1*s.* 6*d.* post-free.

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WEBBS' EMPEROR CABBAGE,
6d. and 1s. per packet; 1s. 6d. per ounce.

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	Per packet.	Per ounce.
WEBBS' RED GLOBE TRIPOLI ...	6d.	1s 6d.
LARGE FLAT RED TRIPOLI ...	6d.	10d.
GIANT ROCCA	6d.	1s. 3d.
WHITE LISBON		8d.

Free by Post or Rail.

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Now is the time to plant :—

PYRETHRUMS, of which we grow 3 acres.
DELPHINIUMS, do. do. 3 ,,
GAILLARDIAS, do. do. 2 ,,
PHLOXES,
PENTSTEMONS.

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THE

Gardeners' Chronicle.

SATURDAY, JULY 13, 1889.

THE MULBERRY, AND ITS INTRODUCTION INTO ENGLAND.

CONSIDERABLE uncertainty exists as to the first introduction of the Mulberry, black or white, into England. The evidence put forward by Canon Ellacombe (*Plant-lore of Shakespeare*, pp. 128, 129), in favour of some early date, is hardly satisfactory. The Anglo-Saxon drink "morat" is at least as likely to have been flavoured with Blackberries (the fruit of Rubus fruticosus) as with Mulberries. Archbishop Ælfric's *morus vel rubus, mor-beam* look suspiciously like a scholar's translation of a foreign word for a foreign thing, not to speak of the admitted facts that *morum* was used for both fruits by classical writers, and that Ælfric himself elsewhere writes *flavi vel mori, blaceberian*. As for Spenser's "fruit that dewes the poet's braine," the least acquaintance with his poems, shows that he owed next to nothing to observation of Nature, his epithets and imagery being almost entirely borrowed from the Latin poets. Lyte's Herbal, though early, is nearly a literal translation from the Dutch of Dodoens, and any local allusions it contains refer to Holland, not to England.

On the other hand, Loudon in his *Arboretum* (1835), admitting the difficulty of disentangling its history from that of the white Mulberry, says that the black Mulberry was first brought to England in 1548, when some trees were planted at Syon by William Turner, "the father of English botany;" though others say that one planted at Lambeth by Cardinal Pole, 1555, was the first. Shakspeare's at New Place, Stratford, was not planted till 1609, four years after the royal edict recommending the sowing of Mulberry seed and cultivation of silk worms. In 1835, the largest white Mulberry trees were at Syon, where one covered with fruit every year, was 45 feet high; 1 foot 10 inches in diameter of trunk, and 59 feet in that of head. The largest black Mulberry was then at Earl Spenser's at Battersea, 300 years old (probably only an estimate), from 30 to 40 feet high, 70 feet by 50 feet

in diameter of head, and with 14 trunks, averaging about 1 foot in diameter at 1 foot from the ground. The oldest, however, Loudon states to be that at Syon, and of which he gives a woodcut, *Arboretum et Fruticetum*, p. 1345. This tree was 22 feet high, and he adds there is another 28 feet high, 3 feet 3 inches in diameter of trunk, and 57 feet in that of head, at the same place. This latter may be the fine old tree at Syon Lodge, now in the occupation of G. Manville Fenn, Esq. Now William Turner was born between 1510—15, was a friend of Ridley and Latimer, suffered imprisonment and banishment, travelling long in Italy and Germany, until the death of Henry VIII. He then became in succession Prebendary of York (1550), and Dean of Wells (1551), and after a second banishment and reinstatement, died in London, in 1568. In 1548 he was acting as physician to his patron, the Protector Somerset, at Syon, and had apparently a garden of his own at Kew. He dates the dedication to Somerset of his *Names of Herbes*, "From your grace's house at Syon, anno dom. mccccxlviij, Martii xv." In his previous botanical work, *Libellus de re herbariâ* (1538), there is merely the entry: "Morus a Mulbery tre. Morum the Mulbery." In the *Names of Herbes* he says: "Morus is called in greeke morea, in english a mulbery tree, in duch maulberbaum, in french murier, it groweth in diverse gardines in Englande." Gerard enumerates both Morus alba and Morus rubra as growing in his garden in Holborn, in 1596, but this is nearly half-a-century after Turner's stay at Syon.

On the whole, the Mulberry may have been in England long before Turner. There is nothing but tradition in favour of its introduction by him, but the probability is strongly in favour of his having planted the Syon trees, or some of them. *G. S. Boulger.*

New or Noteworthy Plants.

ORNITHOGALUM (CATHISSA) APERTIFLORUM, *Baker, n. sp.**

This is a new species of Ornithogalum allied to O. narbonense and O. pyrenaicum. It flowered at Kew for the first time in May. We received the bulb from Herr Max Leichtlin in 1887. It is an oriental species, but the exact locality is uncertain.

Bulb middle sized, ovoid. Leaves five to a bulb, fleshy, linear, glabrous, half-a-foot long at the flowering time, ¼ to ⅓ inch broad, subglaucous, not clasping the base of the stem, furnished with a distinct white cartilaginous edge. Scape slender, terete, 8—9 inches long. Raceme lax, as long as the scape, nearly 4 inches in diameter, lower pedicels patent, 1½ inches long; upper much shorter, bracts small, lanceolate. Expanded flower, ¾ inch in diameter; segments spreading widely, oblong, ⅓ inch long, greenish-white, with a broad green keel. Stamens ⅘th inch long; filaments all lanceolate, ovary green, globose; style, 1-16th inch long. *J. G. Baker.*

Fritillaria (Monocodon) hericaulis, *Baker, n. sp.*†

This also was received from Herr Max Leichtlin. It was collected by Sintenis in the month of April of the present year, on the Chodohadur Dagh, in Asia Minor. Its near ally is F. armena, *Bot. Mag.*, t. 6365.

Whole plant 4—5 inches high; stem one-headed, bearing four erect alternate sessile leaves, the lowest oblong, obtuse, 2 inches long, the others lanceolate flower very cernuous, ½ to ⅝ inch long; segments oblong, dark purple, glaucous, not at all tessellated, obscurely forveolate. Stamens nearly as long as the perianth; anthers oblong; ovary cylindrical, ⅓ inch long; style protruded beyond the tip of the perianth-segments, three-cleft at the tip. *J. G. Baker.*

Odontoglossum Harryanum var. flavescens, *n. var.*

The other day a remarkable and very handsome variety of Odontoglossum Harryanum was sent to Kew by Alfred Wilson, Esq., of Westbrook, near Sheffield, in which every trace of markings had disappeared, leaving the flower of brilliant yellow colour. The sepals are deep yellow, the petals similar, but with white veins near the base, the lip pale primrose, with base and crest deep yellow. It was obtained from Messrs. James Backhouse & Son, of York, and is a very beautiful and distinct variety. Mr. Wilson remarks that he has not seen one like it before; nor have I. *R. A. Rolfe, Herbarium, Kew.*

Cattleya intricata ×, *Rchb. f.*

When compiling the "List of Cattleyas," I had not seen this plant, which was described as a supposed natural hybrid between Cattleya intermedia and Lælia elegans. The pollen was said to be that of a Cattleya, the habit that of C. intermedia, the narrow segments like those of that species, and of the lightest white-rose in colour, the lip like that of Lælia elegans picta, but that the sharp-angled long side laciniæ were white. Feeling at a loss how to account for such a combination of characters with such a parentage, I remarked—"May it not be a form of C. intermedia?" It now appears that Mr. Low's original and only plant passed into the collection of H. Little, Esq., of Twickenham, and that gentleman has very kindly sent a raceme, with pseudobulb and leaves, to Kew for preservation. It differs from the original description in two important particulars. The side-lobes of the lip are not white, but suffused with light rosy-purple, and the sepals and petals are very distinctly suffused with that peculiar yellowish-brown colour seen in some of the forms of Cattleya guttata. There are also numerous spots of light brown and of rosy-purple. The change may have come about as the plant became established in cultivation, but in any case it cannot be explained away, for this is the original and only plant, and there can be no doubt of its authenticity. As to the parentage. First there is not the slightest trace of the small pollinia seen in Lælia elegans, and in one or two hybrids partly derived from it, so that may be dismissed as highly improbable. The habit of the plant, and the shape of the sepals and petals, are so much like those of C. intermedia that I have little doubt it was one of the parents, and, from what is known of artificial hybrids, I should judge the seed-parent. On the other hand, the details of the lip, as well as its colour, and that of the sepals and petals, point as unmistakably to one of the forms of C. guttata, as the other parent—possibly the variety Leopoldi. This would also account for the purely Cattleyoid pollinia; Cattleya flaveola× and C. picturata×, are artificial hybrids from the same two species, while C. scita× is a natural hybrid believed to have the same parentage. All may differ in colour, and yet have been derived from the same two species, for C. guttata is very variable in colour. Will the present possessors of these plants be good enough to send to Kew a specimen for preservation? *R. A. Rolfe.*

Motto for a Sun Dial.—From *Garden and Forest*, we take the following:—

"I am a shade
A shadowe too art thou,
I mark the time,
Say, gossip, dost thou so?"

POPPIES.

(*Continued from vol. v., p. 775.*)

The Horned Poppy, Glaucium flavum, has deeply cut leaves of a glaucous hue, the under surface thickly covered with short white hairs. The plant is a free grower, and fairly ornamental, even when not in flower. Its yellow flowers are borne on stems about 2 feet in height, and are succeeded by long curved seed-pods, a foot or so in length, giving the plant a singular appearance. It is fairly hardy, and in favoured situations it is perennial, although generally giving most satisfaction when treated as a biennial, and planted in a somewhat moist and sheltered position. Another distinct Glaucium, is G. Fischeri, of dwarfer habit than G. flavum, and more strictly perennial. It has reddish-orange coloured flowers, which are yellowish-white at the base of the petals, and the plant is a fairly continuous bloomer, and although it is but a form of flavum, it may be regarded as an improvement on that species. A similar plant, but of annual duration, is G. tricolor—which has crimson flowers, with a black spot at the base of the petals. Sold under this name—as a novelty by W. Thompson, of Ipswich—it is evidently synonymous with G. phœniceum, or corniculatum as it is sometimes called.

Meconopsis cambrica, the Welsh Poppy, is a neat free-flowering perennial, well adapted for rockeries, its thick, fleshy rootstock being capable of withstanding great variations of temperature and moisture. Its yellow flowers appear on long peduncles during the summer months, and rise about 6 inches above the dense tuft of pinnate, stalked, pea-green leaves. It seeds abundantly, and the seedlings in most cases take good care of themselves.

M. nepalensis is a much more stately plant, with golden-yellow flowers about 3 inches across; but it is not nearly so hardy as M. cambrica, and at the best it is but a biennial.

The Himalayan M. Wallichi, with its large pale blue flowers, is a charming species. This plant has distinctly ornamental foliage, the leaves being about a foot long, deeply cut, and thickly covered on the under surface, and stalks with rather long rusty-coloured hairs, giving the whole plant that hue. It is of perennial duration in warm places. Other species have been introduced, and when these are obtainable they will be found worthy of cultivation. Another Himalayan plant, Cathcartia villosa, the specific name of which refers to the soft yellow hairs with which the plant is covered, is a compact-growing perennial, producing in early summer drooping yellow flowers at the apex of its leafy flower-stems. The radical leaves are stalked, somewhat palmate, and broadly lobed and toothed. This species, and the two previously named, seem to thrive in slightly shaded and sheltered situations.

The prickly Poppies, Argemone, have glaucous prickly foliage, and usually white-flowers. All are annuals with the exception of A. grandiflora, which, in favoured positions, is perennial. A. grandiflora is perhaps the best of them, and may be raised by seeds sown under glass, and planted out-of-doors early in the season, when it will soon begin to flower. A. albiflora and A. hirsuta, both white, and A. mexicana, yellow, are the best of the others. The best treatment for these Argemones is the one adopted for half-hardy annuals, and where they can be put out in little colonies they are very effective plants, their sinuate, glaucous, prickly foliage being dissimilar to that of most other garden plants. Their average height is 2 feet, and if they are grown as advised, staking will be unnecessary.

Bocconia cordata, the plume Poppy, is in several respects very different from the ordinary run of the Poppy family, and although the individual flowers are small and unattractive, yet the whole inflorescence, a large terminal panicle of flowers, has, on well-grown plants, a graceful effect. The plant is seen to most advantage when grown in small masses, and is well suited for filling small beds on the lawn or along the margins of shrubberies. The foliage is, perhaps, the most ornamental part of the plant, as

* *Ornithogalum (Cathissa) apertiflorum*, Baker, n. sp.—Bulbo ovoideo; foliis linearibus semipedalibus haud vittatis; pedunculo gracili tereti vix pedali, floribus multis in racemum laxum elongatum dispositis, pedicellis flore 3—4 plo longioribus inferioribus patulis; bracteis lanceolatis parvis; perianthii segmentis oblongis, albidis parvulis late viridi—vittatis flore expanso patulis; staminibus perianthio duplo brevioribus filamentis lanceolatis; stylo brevi. *J. G. Baker.*

† *Fritillaria (Monocodon) hericaulis*, Baker, n. sp.—Caule brevi monocephalo; foliis 4 alternis infimo oblongo reliquis lanceolatis; flore cernuo; segmentis oblongis glaucis atro-purpureis obscure forveolatis; staminibus flore vix brevioribus, antheris oblongis; ovario cylindrico, stylo exserto apice tricuspidato. *J. G. Baker.*

the stems, which grow about 4 feet high, are well-clothed with ovate-cordate, broadly lobed, glaucous leaves, the underside silvery white, and the petioles and stems densely covered with a whitish, waxy bloom. It is easily raised from seeds, and may be freely propagated by division or cuttings. We have seen it used with excellent effect, planted in groups on the bank of a lake. Botanically, the plant is anomalous, in Papaveraceæ, having only one-seeded capsules, and without the showy petals common to the order.

Eschscholtzia (Californian Poppy), a genus of well-known showy, hardy annuals, of which there are now at least half-a-dozen distinct colours, varying from orange, orange-crimson, white, saffron, to rose-carmine; there are also double white and yellow forms—all are good, and to ensure the best results, seeds should be sown in autumn; they then become well established before winter, and flower early next summer. Any good garden soil will suit them, and in ordinary seasons they seed freely—that is, in places where they can be left pretty much to themselves, as in the margins of shrubberies, and they will therefore for some time take care of themselves.

Another Californian plant, Platystemon californicus, is a beautiful dwarf trailing subject, producing an abundance of sulphur-yellow-coloured flowers. It succeeds under similar treatment as Eschscholtzia.

Romneya Coulteri is a Californian plant, with large white flowers, that requires protection in winter, and a sunny yet sheltered position. Another similar, but dwarfer, and yellow-flowered Mexican plant is Hunnemannia fumariæfolia—two interesting Poppyworts, but only worthy of a place where rare things are appreciated. *F. R.*

WADDESDON MANOR.

There is a natural beauty in the extensive gardens and pleasure grounds of Baron Ferdinand de Rothschild's noble estate, near Aylesbury, a beauty which has been developed to the very highest by the arts of the landscape gardener at every point. From the elevated plateau on which the mansion stands some of the most beautiful views in the country are commanded, and the devious and carefully arranged walks in the grounds reveal different gardens, each distinct but all in harmony, a result which the clever planting of the whole of the grounds in clumps and groups of the same kind does much to secure. By planting in this manner, each thing, whether flowering Weigelas, Rhododendrons, Escallonias, Philadelphus, double and scarlet Thorns, or whatever it may be, appears to make its individuality distinct, which is not the case where mixed planting one and one is carried out, as it too often is. The effect of planting in groups brings out some fine effects in the Waddesdon gardens—notably in the case of the silvery-leaved Sea Buckthorn, the mingled white variegated Acers and Copper Beech, and the noble clumps of Pampas-grass. Passing by the aviaries, with the flower garden in front, we come to the new winding walks over the hill side, commanding views of Westcott and Wootton, which have extended the garden in a pleasant direction, and opened up a prospect only to be excelled by that on the other side over the vale of Aylesbury. There is plenty of flower in every part of the gardens. The view from the terrace over the main flower garden, with its basins of white marble and colossal statuary of the same material, being especially brilliant with the rich scarlet of Henry Jacoby Pelargonium, the pink of Pelargonium Mrs. Lever, and other effective flowers worked in with variegated foliage, among which the P. Flower of Spring employed amounts to over 8000 plants.

The massive rockeries are beautiful in themselves, and afford some pleasant nooks, and the lower flower garden near the plant houses is a rich sight of lovely flowers; its approaches are bordered on either hand with Roses—not mixed, but in groups of the leading kinds, and especially those suitable for cutting, among which La France, Marquise de Castellane, Merveille de Lyon, Perle d'Or, and Madame Gabriel Luizet are favourites. The centre design with double dwarf Tropæolums and Violas in a groundwork of Antennaria is very effective, and the long borders of Violas in panels on white Antennaria are equally so. In the side walks Carnations, Roses, and other flowers are in profusion.

The Houses.

The main block of these consists of some fifty divisions, the more central being the loftier. The side ones are devoted to the production of flowers to keep the central ones gay, while they themselves still contain plenty of objects of interest and beauty. Even this large block was not found sufficient for the extensive stocks required for bedding, and for the accommodation of such things, as well as Tomatos and other plants, a new block of houses and ten ranges of pits have been added, making the already "big handful" which Mr. Jaques so ably manages a still greater tax on his acknowledged skill and resources. The centre of attraction is at present in the Orchid-houses, whose approaches are arranged with rockeries on each side in place of staging, the bays in them being grouped in masses with Pelargoniums in flower, with white Lilies behind, alternating with groups of Coleus or Caladium, with flowering Achimenes, then Malmaison Carnations, with Maidenhair, groups of scarlet Anthuriums, a bank of the fine old Medinilla magnifica, another of the stately Strelitzia reginæ, and so forth; the roof covered with climbing plants, and the centre, from which the Orchid-houses diverge, being lofty and planted with noble Tree Ferns, Palms, Cycads, &c., the ground carpeted with close-growing Selaginella, and the back occupied by a massive rockery clad with Bamboos, Aroids, Ferns, &c., among which runs a waterfall—certainly not an insignificant affair, such as is often seen under glass, but if anything too realistic and noisy. Beneath is a rocky cavern, which is well in keeping with the general idea of this imitation of a natural tropical scene.

The first of the ranges of cool Orchid-houses is resplendent with scores of fine spikes of Odontoglossum crispum, artistically mingled with rich crimson Masdevallia Harryana and many fine O. Pescatorei, with alternating batches of orange-coloured Epidendrum vitellinum, the rocky sides of the stages being faced with Maidenhair, and creeping Tradescantia depending from above. The next division contains plants of a similar class in bud, and another cool-house has a great show of Masdevallias, among which in bloom were M. macrura, M. rosea, many M. chimæra, M. Roezlii, &c., with occasional plants of Oncidium cucullatum, O. macranthum, and Odontoglossum Uro Skinnerii. The Cattleya-houses are a grand sight with the flowers of C. Mendelii, C. gigas, C. Gaskelliana, &c., with some well-flowered Odontoglossum citrosmum, some large specimens of Cymbidium Lowianum, various Cypripediums, and a well-flowered batch of the beautiful but not free-growing Dendrobium McCarthiæ. Another house is filled with Vanda teres in flower, and V. Hookeriana in bud; here the record of V. teres is beaten by a spike of seventeen flowers. The growing Dendrobes are thriving well, suspended from the roof of a warm-house, in which the bed and staging is beautified by the rich spathes of Anthurium Ferrierense ×, and other Anthuriums; the Phalænopsis occupying a similar position in a house with foliage plants, among the Phalænopsis being some fine plants of Utricularia montana in bloom. In other houses, batches of Vanda Kimballiana, V. Amesiana, and other good new things, are doing excellently, and it may be said that never have the Waddesdon Orchids been in such good condition, or produced such a fine display of bloom.

In the side-houses we come to a whole houseful of Carnation Souvenir de la Malmaison, and another of perpetual-blooming kinds; a house of interesting and beautiful Bromeliads, with flowering Achimenes; a batch of the soft pink Justicea carnea; a houseful of Veitch's strain of Gloxinias, Pelargoniums, and in more or less quantity, all the things usually denominated decorative, among which not the least so is a curious series of Japanese Fern designs, worked in Davallia Mariesii, to imitate houses, lanterns, boats, &c., all very beautiful, covered with the elegant frondage of the Fern, which shapes the design.

Fruit-houses.

The extensive fruit ranges are well and heavily cropped. Peaches, Nectarines, &c., are plentiful; Figs have been gathered in quantity ever since early in March; and the five vineries are splendidly managed, the best house of Muscats being throughout show bunches; and the Strawberries, which have been specially good in pots this year, are being followed by excellent crops outdoors in the extensive walled-in kitchen garden, which, like all the rest of the garden at Waddesdon, both indoors and out, seems to be always in holiday garb, although there must be an incalculable amount of work being carried out at all times by the half-hundred or so assistants employed in the gardens. A systematic manner of doing work goes far towards not causing inconvenience or litter while the work is going on, and that quality is certainly among the many good ones possessed by Mr. Jaques. *Visitor.*

TREES AND SHRUBS.

BUDDLEIA GLOBOSA.

This shrub has been very fine in these gardens this year, it having flowered continuously for a long time. The favourable weather experienced during May favoured free growth, which was accompanied with good foliage and numerous blossoms. The perfume from the flowers reminds one very much of honey in the comb. When the weather is continually wet at the time of flowering, the flowers do not last long, the moisture causing their quilled corollas to decay. By planting the bushes in various parts of the garden, the period of bloom can be much prolonged. We have them in east, west, northern and southern situations, some fully in the sun's rays, and others on the grass exposed to east winds; and some again are partly under tall trees. Some of the plants die back during the winter more than others, this Buddleia not being thoroughly hardy; but no harm is done by this partial dying-off of the branches, as it is a means of prolonging the season of flowering. Those plants which suffer the most from frost and winds during the winter being the latest to start into growth in the spring, and as the blooms are produced on the current year's growth, the time of flowering is retarded, as more growth is made by plants badly hit by frost than by those which escape altogether; therefore, no harm is done by the plants dying back, even to the ground line, as they sometimes do in some severe winters. The growth is so rapid in such cases the following season, that new growth soon takes the place of that which was destroyed.

We have one plant here, which was planted about nine years since—quite a small piece—it now measures 30 feet across, it having been allowed to grow away at will. This particular plant is sheltered from the north and east winds, and never dies back, and is in consequence the first to flower, which it does early in May in most years, and is past its best before some others we have planted on the grass, in an eastern position, have opened their flowers—these last-named plants always get badly disfigured during the winter, which, as was said, is the means of prolonging their growth in the spring. I had thought, when planting this Buddleia on the grass, that it would grow into a fine bush, but such has not been the result. In a spot with shelter from winds that blow from north and east, a very fine lawn shrub would be secured. Buddleia, like many other fast-growing deciduous shrubs, pays for liberal treatment; still it is the more liable to die back when the growth is soft, as it is likely to be when growing luxuriantly late in the season, and manure is applied freely to the soil.

The plant is easily propagated from cuttings, and grows freely from seed. The former method of raising the plants is perhaps the better one, the plants not becoming tall in their early years. Cuttings, about 6 inches long, may be taken at the end of September, and not choosing the strongest growths, but rather those of medium size, and which should be cut square across below a joint. Insert in sandy soil in a cold frame, and make firm, keeping them close for a time and protected from frost during the winter. By the following month of May they will be nicely rooted, and ready to be transplanted into lines on a west border, or they may be transferred to their permanent position at once, if this be not too exposed, otherwise they would be better on a border of the sort named. A mulching of manure over the surface will be an advantage. *E. Molyneux, Swanmore Gardens, Bishop's Waltham.*

ROSES.

In this season of Rose shows, it is opportune to put before the general reader the aims which the professional Rose-grower endeavours to secure. We cannot do this better than by availing ourselves of what has been laid down for the purpose by Mr. William Paul, from whose magistral work, *The Rose Garden*, we take the following, availing ourselves at the same time of some of the illustrations which Mr. Paul has kindly placed at our disposal. What constitutes a good Rose? This is what Mr. Paul says in answer, and no one will venture to question the dictum of such an expert. The "properties" of a Rose to which he attaches the greatest importance are :—1, habit and constitution; 2, form of flower; 3, colour; 4, freedom, constancy, and duration of flowering; 5, scent. As to the first point, that is easily appreciated, and also the fourth. As to the others, there is room for difference of opinion, as they are, to a large extent, matters of individual appreciation.

Turning to form, Mr. Paul says a Rose may be good whether globular, cupped, compact, or expanded; but of whichever form it may be, the petals should be thick and smooth, and outline the circular. As all these requirements are consonant with the natural tendencies of the flower, and not, as is the case with some florists' flowers, directly opposed to what is natural, they will be accepted without question. The figures, 7, 8, 10, 11, for which we are indebted to Mr. Paul, will show better than words what are the ideal forms aimed at.

As to colour, Mr. Paul says, that whatever its shade or tint, it should be clear and solid, by which, we presume, he means that it should be definite, and that the shades should merge one into the other gradually without abrupt transition or inharmonious contrast. The substance of the petal should be thick, not flimsy, and the surface either velvety in texture, or more or less smooth like ivory, as in the case of the Tea Roses. One point not alluded to by Mr. Paul is, that the colour should be durable—remain during the expansion of the flower, and not become faded and "slaty" as time goes on.

As to perfume, we all know how greatly that varies, and how much is lost in some modern Roses by deficiencies in this respect. All these matters are the result of careful selection and assiduous cultivation—without these necessary requirements, perfection cannot even be approached.

Structurally, a Rose consists of a number of petals—primarily five—more or less over-lapping at the edges. Naturally they are often more or less notched, but in a cultivated Rose the notching is looked upon as a defect, and would be fatal to the prospects of a show-Rose. The original number, is greatly increased in an exhibition Rose, by two circumstances: first, because the veritable petals are greatly increased in number; and next, because a large proportion of the stamens of the natural flower are represented by petals, and the aim is to secure that these supernumerary petals shall be as perfect in form, and as regular and symmetrical in their arrangement and degree of overlapping as the true petals. In double Roses, although the stamens are more or less petaloid, the pistils remain unchanged. The revolute edges are the result of a certain disproportion in the energy of growth in the upper as contrasted with the lower surface, the upper surface growing more freely; the lower, therefore, acts as a rein or curb, causing the upper and more freely growing edge to curl over. The texture of the petal depends not only on its substance or thickness, but upon the number and degree of prominence of a number of little conical elevations invisible to the naked eye, which beset the upper surface, breaking up the light by innumerable facets, and producing an effect of what artists call "air."

Much of the appearance of a good Rose is due to the regularity of arrangement of the central petals, while a sense of confusion arises if the inner petals do not accommodate themselves evenly and regularly one to the other. In some Roses, like Souvenir de la Malmaison, for instance, there is an appearance which the Rose-grower knows as "quartering." This appearance is interesting to the botanist, as showing in adult life the original five-fold nature of the flower. In the very early stage of the flower, the future stamens are represented by five little tubercles, but as growth goes on, these five subdivide into an infinite number, which become so arranged that in most cases they obliterate all traces of the primordial five-fold division. In these days, when so much attention is paid to the beginnings of things, and to their ultimate modification, by gradual change and adaptation of one to another, these quartered Roses are valued as affording evidence that the Rose as we now see it is, in all probability, the lineal descendant of some flower which had only five petals and five stamens. To some people the beauty and attractiveness of a Rose are such, that it seems to them almost a sin to scrutinise and analyse with a view to find out how all this beauty has come about. On the other hand, the naturalist regards it as quite as great and as reprehensible a neglect of the powers and opportunities placed at his disposal not to avail himself of them—and certainly there can be no question which of the two classes derives the greatest amount of pleasure and satisfaction in the contemplation of these exquisite products of Nature and of Art. But, so long as men's minds are differently constituted, so long will this difference exist, and, as a matter of practice, it is better to dwell upon and accentuate the points of contact than to raise a question as to the points of difference.

Every one appreciates a Rose, some for some qualities, some for all, but all agree in their sense of gratitude for the privilege of possessing so exquisite a thing as a Rose. One immense advantage the naturalist has, or those who look upon a Rose (it applies to any other flower whatever) from a naturalist's standpoint, and that is the hope, nay the evidence of progress and continual advance, not in one direction only, but in all and every direction; in this way not only is the enjoyment of the present secured, but the history of the past, and the possibilities and probabilities of future development of the flower, are alike at his disposal to a degree far beyond what the rosarian who limits himself more precisely to time present can dream of.



Fig. 7.—Ideal Rose: expanded form.

SUCCESSION OF FOREST GROWTHS.

It is the prevailing and almost universal belief that when native forests are destroyed they will be replaced by other kinds, for the simple reason that the soil has been impoverished of the constituents required for the growth of that particular tree or trees. This I believe to be one of the fallacies handed down from past ages, taken for granted, and never questioned. Nowhere does the English Oak grow better than where it grew when William the Conqueror found it at the time he invaded Britain. Where do you find white Pines growing better than in parts of New England, where this tree has grown from time immemorial? Where can you find young Redwoods growing more thriftily than among their giant ancestors, nearly or quite as old as the Christian era?

The question why the original growth is not reproduced can best be answered by some illustrations. When a Pine forest is burned over, both trees and seeds are destroyed, and as the burned trees cannot sprout from the stump, like Oaks and many other trees, the land is left in a condition well suited for

the germination of tree-seeds; but there are no seeds to germinate. It is an open field for pioneers to enter, and the seeds which arrive there first have the right of possession. The Aspen Poplar (*Populus tremuloides*) has the advantage over all other trees. It is a native of all our northern forests, from the Atlantic to the Pacific. Even fires cannot eradicate it, as it grows in moist as well as dry places, and sprouts from any part of the root. It is a short-lived tree, consequently it seeds when quite young, and seeds abundantly; the seeds are light, almost infinitesimal, and are carried on wings of down. Its seeds ripen in spring, and are carried to great distances at the very time when the ground is in the best condition for them. Even on the dry mountain sides in Colorado, the snows are just melting, and the ground is moist where they fall.

To grow this tree from seed would require the greatest skill of the nurseryman, but the burnt land is its paradise. Wherever you see it on high, dry land, you may rest assured that a fire has been there. On land-slides you will not find its seeds germinating, although they have been deposited there as abundantly as on the burned land.

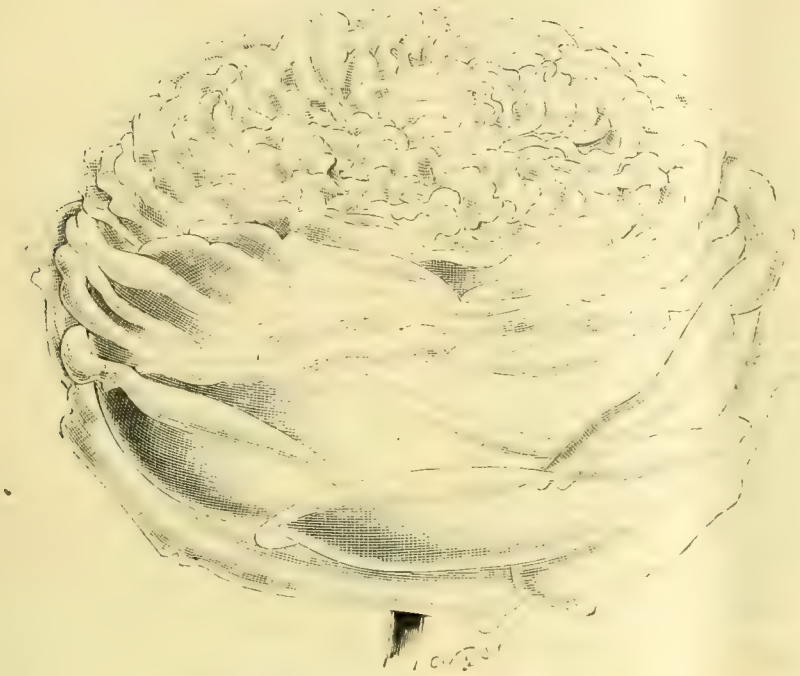


Fig. 8.—Ideal rose: compact form. (See p. 40.)

Next to the Aspen and Poplars comes the Canoe Birch, and further north the Yellow Birch, and such other trees as have provision for scattering their seeds. I have seen acorns and nuts germinating in clusters on burned lands in a few instances. They had evidently been buried there by animals, and had escaped the fires. I have seen the Red Cherry (Prunus Pennsylvanica) coming up in great quantities, where they might never have germinated had not the fires destroyed the *débris* which covered the seed too deeply.

A careful examination around the margin of a burned forest will show the trees of surrounding kinds working in again. Thus by the time the short-lived Aspens (and they are very short-lived on high land) have made a covering on the burned land, the surrounding kinds will be found re-established in the new forest, the seeds of the Conifers, carried in by the winds, the berries by the birds, the nuts and acorns by the squirrels, the mixture varying more or less from the kinds which grew there before the fire.

It is wonderful how far the seeds of berries are carried by birds. The waxwings and cedar-birds carry seeds of our Tartarian Honeysuckles, purple Barberries, and many other kinds 4 miles distant, where we see them spring up on the lake shore, where these birds fly in flocks to feed on the Juniper berries. It seems to be the same everywhere. I found European Mountain Ash trees last summer in a forest in New Hampshire; the seed must have been carried over 2 miles as the crow flies.

While this alternation is going on in the east, and may have been going on for thousands of years, the Rocky Mountain district is not so fortunate. When a forest is burned down in that dry region, it is doubtful if coniferous trees will ever grow again, except in some localities specially favoured. I have seen localities where short-lived trees were dying out, and no others taking their places. Such spots will hereafter take their places above the timber-line, which seems to me to be a line governed by circumstances more than by altitude or quality of soil.

There are a few exceptions where Pines will succeed Pines in a burned-down forest. Pinus Murrayana grows up near the timber-line in the Rocky Mountains. This tree has persistent cones, which adhere to the trees for many years. I have counted the cones of sixteen years on one of these trees, and examined burned forests of this species, where many of the cones had apparently been bedded in the earth as the trees fell. The heat had opened the cones, and the seedlings were growing up in myriads; but not a Conifer of any other kind could be seen as far as the fire had reached.

In the Michigan Peninsula, Northern Wisconsin, and Minnesota, P. Banksiana, a comparatively worthless tree, is replacing the valuable Red Pine (P. resinosa); and in the Sierras, P. Murrayana and P. tuberculata are replacing the more valuable species by the same process.

In this case, also, the worthless trees are the shortest-lived; so we see that Nature is doing all that she can to remedy the evil. Man only is reckless, and especially the American man. The Mexican will cut large limbs off his trees for fuel, but will spare the tree. Even the poor Indian, when at the starvation point, stripping the bark from the Yellow Pine (P. ponderosa) for the mucilaginous matter being formed into sap-wood, will never take a strip wider than one-third the circumference of the tree, so that its growth may not be injured.

We often read that Oaks are springing up in destroyed forests where Oaks had never grown before. The writers are no doubt sincere, but they are careless. The only Pine-forests where Oaks are not intermixed are either in land so sandy that Oaks cannot be made to grow on them at all, or so far north that they are beyond their northern limit. In the Green Mountains and in the New England forests, in the Pine-forests in Pennsylvania, in the Adirondacks, in Wisconsin, and Michigan—except in sand—I have found Oaks mixed with the Pines and Spruces. In north-western Minnesota, and in northern Dakota, the Oaks are near their northern limit, but even there the Burr Oak drags on a bare existence among the Pines and Spruces. In the Black Hills, in Dakota, poor, forlorn, scrubby Burr Oaks are scattered through the hills among the Yellow Pines. In Colorado we find them as shrubs among the Pines and Douglas Spruces. In New Mexico we find them scattered among the Piñons. In Arizona they grow like Hazel-bushes among the Yellow Pines. On the Sierra Nevada the Oak region crosses the Pine region, and scattering Oaks reach far up into the mountains. Yet Oak will not flourish between the one-hundredth meridian and the eastern base of the Sierras, owing to the aridity of the climate. I recently found Oaks scattered among the Redwoods on both sides of the Coast Range Mountains.

Darwin has truly said "The Oaks are driving the Pines to the sands." Wherever the Oak is established—and we have seen that it is already established wherever it can endure the soil and climate—there it will remain and keep on advancing. The Oak produces comparatively few seeds; where it produces a hundred, the Ash and Maple will yield a thousand, the Elm ten thousand, and many other trees a hundred thousand. The acorn has no provision for protection and transportation like many tree-seeds. Many kinds are furnished with wings to float them on the water, or carry them in the air. Nearly every tree-seed, except the acorn, has a case to protect it while growing, either opening and casting the seeds off to a distance when ripe, or falling with them to protect them till they begin to germinate. Even the equally large seeds of other kinds are protected in some way. The Hickory nut has a hard shell, which shell itself is protected by a strong covering until ripe. The Black Walnut has both a hard shell and a fleshy covering. The acorn is the only seed I can think of which is left by Nature to take care of itself. It matures without protection, falls heavily and helplessly to the ground, to be eaten and trodden on by animals, yet the few which escape and those which are trodden under are well able to compete in the race for life. While the Elm and Maple seeds are drying up on the surface, the Hickories and the Walnuts waiting to be cracked, the acorn is at work with its coat off. It drives its tap-root into the earth in spite of grass, and brush, and litter. No matter if it is shaded by forest trees so that the sun cannot penetrate, it will manage to make a short stem and a few leaves the first season, enough to keep life in the root, which will drill in deeper and deeper. When age or accident removes the tree which has overshadowed it, then it will assert itself. Fires may run over the land, destroying almost everything else, the Oak will be killed to the ground, but it will throw up a new shoot the next spring, the root will keep enlarging, and when the opportunity arrives it will make a vigorous growth, in proportion to the strength of the root, and throw out strong side roots, and after that care no more for its tap-root—which has been its only support—than the frog cares for the tail of the tadpole after it has got on its own legs.

The Red Cedar (Juniperus virginiana) reaches from Florida to and beyond Cape Cod; it is among the hills of Tennessee, through the Middle States and New England. It is scattered through the Western states and territories, at long distances apart, creeping up the Platte River in Nebraska.

*

(I found only three in the Black Hills, in Dakota, in an extended search for the different trees which grow there. Found only one in a long ramble in the hills at Las Vegas, New Mexico.) Yet this tree has crept across the continent, and is found here and there in a north-westerly direction between the Platte and the Pacific Coast. It is owing to the resinous coating which protects its seeds that this tree is found to-day scattered over that immense region. *Robert Douglas, in "Garden and Forest."*

Orchid Notes and Gleanings.

ONCIDIUM SCHLIMII, *Linden.*

A pretty little Oncidium, belonging to the group Rostrata, whose peculiarity is to have the rostellum prolonged into a beak-like appendage. It was described in *Paxton's Flower Garden*, vol. ii., p. 168, as coming from Ocña. A specimen sent to Kew for determination by William Lees, Esq., of Oldham, came in a batch of Odontoglossum cirrosum, imported by Mr. J. Charlesworth, of Heaton, near Bradford. The flowers are bright yellow, barred with brown, and borne in a compact raceme. It is distinguished from others of the same group by its peculiar column-wings, which are deeply bifurcate, the two arms being extended in a pair of diverging, narrow and acute lobes. There seems to be a little variation in these, none of them being quite so long as in the original specimen. It is occasionally met with in gardens.

Aërides japonicum.

A specimen of this pretty little Japanese Aërides has been sent to Kew by Mr. James O'Brien, of Harrow, who remarks that it was grown in a Rose-house; and from its native country it is evident that it requires very cool treatment. The flowers are of the lightest whitish-green, with some purple markings, and they exhale a powerful aromatic fragrance. *R. A. R.*

Oncidium linguiforme, *Lindl.*

The above almost forgotten plant has re-appeared in the collection of John Watney, Esq., of Shermanbury House, Reigate, having been sent to Kew for determination, through Messrs. James Veitch & Sons; and a few days later the same gentleman sent a fine specimen for preservation in the Herbarium. It is a native of Venezuela, and was described by Dr. Lindley, in 1846, from a wild specimen collected by Linden. It flowered in the collection of Sir Philip Egerton, in 1854, but I have seen no evidence of its being in cultivation since that time until the present. The raceme grows to a considerable length, 10 feet or more, and is sparingly branched; the flowers being medium-sized, the segments of a peculiar dull yellow, with a purplish tint on the face, recalling the peculiar colour of Oncidium cucullatum var. nubigenum. The lip is vinous-purple, nearly ovate, but suddenly narrowed above the middle, apex obtuse. The colours are rather unusual, and attractive. *R. A. Rolfe, Herbarium, Kew.*

Yellow Dendrobium Wardianum.

On p. 714 of last volume, Mr. O'Brien writes of a yellow D. Wardianum, which he thinks may be only an accidental variation. The description he gives corresponds exactly with a plant now in Mr. Corning's collection, and obtained from Mr. Bull under the varietal name of ochroleuca. This plant and its progeny has flowered for five successive years, and retains the yellow colour. It is a grand and distinct variety, and as free-growing as the type. *F. Goldring, Kenwood, U.S.A.*

Orchis hircina (Lizard Orchis).

In Mrs. Brightwen's garden at The Grove, Stanmore, noted for its noble trees and rare and curious plants, a fine specimen of this curious Orchis, which has been grown as a pot plant, is now in flower, its 2-inch long brownish-green flowers spotted with purple at the base, demonstrating the aptness of its name, Lizard Orchis. Mr. J. W. Odell, the gardener, has flowered it before in the open ground, but as it had been doubted whether it could be successfully grown and flowered in a pot, he grew it as a pot plant, and found it thrive equally well. The stout flower-spike is over 1 foot high, and clad for more than half its length with its curious flowers. The plant is all the more interesting, because in Britain, at least, it appears to be almost extinct. *J. O'B.*

Promenæa stapelioides.

There are few of the smaller-growing Orchids prettier or more interesting than those belonging to the genus Promenæa, several species of which flower about this season. The species under notice was introduced from Brazil over forty years ago, but it does not appear at any time to have been common. Next to the popular P. citrina, however, it is the most desirable. The flowers are 1½ inches across, with the broadly ovate sepals and petals of a bright greenish yellow; the petals are prettily marked with transverse lines of deep purple, the sepals less distinctly so. This style of colour and marking much resembles that of some Stapelias, and suggested the appropriate specific name. The lip is extremely handsome; it is three-lobed, the side-lobes being small and erect, the middle one much larger, spreading, almost orbicular, and of the blackest purple, except at the margin, where a narrow border of light green serves to heighten the effect of the dark centre. This Orchid thrives in an intermediate house, and should be grown in a shallow pan of peat-fibre and sphagnum, and suspended near the glass. It is flowering along with P. citrina now at Kew. *W. B.*

Anguloa virginalis.

All the Anguloas as yet introduced are well deserving of cultivation. They are extremely handsome both in foliage and flower, bloom with great freedom, and few other Orchids adapt themselves more readily to artificial treatment. The above species is one of the rarest, and at the same time one of the prettiest. It is of similar habit to A. Clowesii, although scarcely so robust in growth. This Orchid should be grown in well-drained pots in a compost of peat and loam, requiring abundance of water when in full activity. It is a native of Columbia, and may be now seen flowering at Kew. *W. B.*

American Notes.

THE AMERICAN ASSOCIATION OF NURSERYMEN.

The fourteenth annual session of the above Association was held at the Grand Central Hotel, Chicago, on June 5 and 6, under the presidency of George A. Sweet, Dansville, N.Y. Each state sent a delegation with its respective Vice-president. Nearly 300 Associates were present, and the convention was deemed by them to be a great success, looked at from all points of view. The principal objects of the Association are the cultivation of personal acquaintance with others in the trade, including those outside the "Union;" the introduction of new fruits, labour-saving implements and appliances, the improvement of transit, obtaining of reasonable rates for the same, and the prevention of needless exposure of nursery products when in transit.

An exhibition was held, and included samples of trees, forest seedlings, new fruits, and implements, the latter embracing three tree-diggers by different makers—machines, I believe, quite foreign to the old country. It was mentioned at the Convention that such implements produced a saving of labour of 50 per cent., and that could be used also as root-pruners, but were not advocated for all standards. The nature and variety of the trees would exercise considerable weight in the selection of a machine.

Papers of vital interest to nurserymen were read, two of these being on the nursery outlook respectively in England, France, and Russia, by Wm. Fell & Son, Hexham, England; E. T. Dickenson, Chatenay, France; and Leo Weltz, Wilmington, Ohio. Some idea may be given as to the great value of the work being carried out by the Association, when it is stated that the Committee on Transportation, with the Hon. S. M. Emery, Lake City, Minnesota, as chairman, secured a new classification, estimated to save the trade 50,000 dols. per annum. Charles A. Green, Rochester, N.Y., is the able and energetic secretary. *From our New York Correspondent.*

ROSA BERBERIDIFOLIA.

"M. T. M." was under a mistake when he said, about Rosa berberidifolia, "Mr. Ewbank tells us that he has not been able to keep it more than a year or two," see *ante*, p. 8. The very contrary of this is the case, and "M. T. M." must have misunderstood something that fell from my lips. I dare say I said that Herr Max Leichtlin had a fine bush which he lost in a very severe winter, and this perhaps was mistaken for mine. I am thankful to say that Rosa berberidifolia has now been in my garden for three years and a quarter, and it is now in very good condition indeed. It is true that it was in some danger from the deluge of last year; but I expended much trouble upon it, and now I am rewarded for my pains.

According to the instructions which I received at Baden-Baden, and my own observations since then, Rosa berberidifolia stipulates for two things before it will consent to do well. One is, that it should have no root-compression at all; it must run about as it likes. This puts all culture in a pot out of the question, and probably gives the clue to the failures with it in this country. If Dr. Lindley grew this Rose in a pot in a greenhouse, I wonder not that it died. But then comes the question, Will it stand and do well, if unprotected, in the open border in any part of the United Kingdom? I doubt that very much indeed. Herr Max Leichtlin's disappointment was owing to severe frost and rain; and cold here would, I think, soon make an end of Rosa berberidifolia in any part of the country. There is therefore no help for it, but this precious little stranger must either be grown in a sufficiently large border in a greenhouse, or it must have some sort of glass cover if it is trusted to live outside in an ordinary border. One method has been taken at the Royal Gardens at Kew, and the other has been tried here, and both have been successful so far.

I have no border in my greenhouse sufficiently large to plant this Rose in, and so I was forced to let it ramble outside—but I have put a large glass canopy over its head, which it has all to itself, and this can be either opened or shut. I am as sure as I can be about anything that this glass cover saved the life of my Rose last year. It hated the rain. Was ever such a thing known in sunburnt Persia since the time of the Deluge as that continuous downfall? Rosa berberidifolia did not exactly sulk, but it did something very much like it. It went off at the tips of the shoots; there were no buds and no blossoms at all. Every day during that heartbreaking summer it seemed to shrink, and to become miserably less, and had the summer at last not come to an end my Rose would have done so. But constant unremitting care saved its most valuable life, if ever life was saved. I knew it would not do to have the glass-house always closed, for confinement meant ruin for the Rose; neither would it have answered for the glass to be always down, for it never could have stood the rain, so that there was always opening and shutting—shutting and opening—during that miserable time. The plant was shut up when the windows of heaven were opened, and it regained its freedom as soon as the visitation of water ceased; but now it is in blossom for a reward. At Kew they are, of course, very much better off than I am with regard to this Rose, and I doubt not it will do quite well in the raised border in the greenhouse. May the year 1888 never be repeated in my time! My

Rose and I alike pray for that. Certainly it is a very pretty little flower, and what I should call the crimson, rather than the purple spot at the base of the petals sets it off to advantage. Cistus algarvensis resembles it in a way, but if the two were put side by side, no one I think would hesitate in deciding for the Rose; but it comes out rather too intermittently, and its real beauty will be only seen when the bush has acquired some size. If only hundreds of blossoms would sparkle on it instead of two's and three's, it would be a sight to be seen. I hope for this, but it will not be till the dreadful year 1888 A.D. is quite forgotten.

The only person whom I have ever seen who knows Rosa berberidifolia quite well, and is familiar with it in its native haunts, is my kind friend and neighbour, Sir George Hutt. Curiously enough, he used to hunt about for it in different gardens for some time, little thinking where he would find it at last. He says that it will stand great extremes of heat and cold—but rain—rain in the summer months, how can a Rose from the desert regions of Persia and Afghanistan put up with that?

I wish the Shah of Persia could see his old friend. I remember being riveted by a Primrose which I once saw in a pot in the street called Straight in Damascus, and I dare say he would open his eyes wider at the sight of Rosa berberidifolia than at anything else.

The crux with this Rose lies most of all now in the matter of propagation. I think seed can be obtained from Messrs. Dammann, at Naples, but as to layering it, or striking cuttings from it, or being successful with buds, I shall believe it when it is done. *H. E., Ryde.*

The Bulb Garden.

IXIAS.

Frequenters of Covent Garden Market are well acquainted with the great variety and inimitable beauty of these charming flowers, but not so the average gardener, who, knowing little or nothing about them, and caring less, too often makes no attempt to discover their real worth, and therefore, when perchance they find a neighbour doing justice to one of the most delightful groups of bulbous plants, their astonishment knows no bounds. Speaking from experience, I believe I am correct in saying that hardly one gardener in a hundred has ever attempted their cultivation at all, a regrettable fact, notwithstanding, though it is some encouragement to know that those who do know these flowers, and who cultivate them for what they are, never tire of them, but are anxious to increase and extend their culture. The flowers of these Ixias are sent into Covent Garden from foreign sources in almost endless quantity in their season, and the flowers being readily packed, and good travellers also, arrive in the London markets tolerably fresh, and usually sell at reasonable prices, prices which may well be kept at home. There is no reason why these flowers should not be grown in England with a fair amount of success, and in doing so no greater cost would be entailed than in the case of many plants now grown in quantity. They can scarcely be regarded as perfectly hardy in all situations, though I am acquainted with some positions in which they pass the winter uninjured though fully exposed; all that is needed at most is frame protection, or a thick covering of cocoa-nut fibre till severe frosts are past, and the danger of these may be considerably lessened by planting deeper than is usually recommended. There is, however, another way of overcoming the difficulty, and particularly where the flowers are not required before July, and this is in annual lifting and keeping them dry till the first or second week in January, when, if the weather be open, they may be planted in the open ground without further ado. But where cut flowers are in demand, it will not be necessary to plant them in the borders, if the production of bloom be of the first moment, for then frame culture will be exactly what they need, and for this purpose they should be planted early in September, and if introduced into slight heat early in December, an early flowering will result, with successional plantings to keep up a supply of their useful flowers.

Apart, however, from what may be achieved with these Ixias in frames and slightly heated structures, they may still bring up the succession by planting them outside, and to ensure success a warm, sheltered position should be selected for them, and one thoroughly drained. It will be well also if the bed be raised some 4 or 6 inches above the usual level, adding plenty of sharp grit and leaf soil, with a little thoroughly decayed cow manure. They may be planted from September to the middle of January; the earliest planted usually come in flower in the end of May or early in June. Six inches deep will be found a good depth for planting, allowing the bulbs to be about 2 or 3 inches apart. In early spring they appreciate plenty of moisture at the roots, and, as a rule, generally receive it. With care and attention it is surprising how rapidly they increase at the root, *i.e.*, the bulbs, it being quite a common occurrence for three and four bulbs to result from one of fair size when planted, so that it is an easy matter for any one to soon raise a large stock, and certain it is that we have few plants more full of grace and beauty than these, and which wherever seen are sure to be admired.

An illustration of how much these charming flowers are neglected may be gathered from the fact that only one exhibitor came forward with pots of them at the recent show at Old Trafford, where the exhibits are usually varied and generally representative, and these, as aptly pointed out in your report of the show (see vol. v., p. 754), were "much admired, because so rarely seen."

When well grown, it is difficult to conceive a brighter and more effective group, and in any arrangement of natural flowers they are simply unique. While writing, I have before me a charming lot of their flowers, in which the varying shades of rose and scarlet are really delightful; and not less pleasing are those of pinkish hue, some of these being remarkable for their brightness. Very effective, again, are the creams, yellows, and orange—the latter colour, however, none too plentiful; there are also lilac, purple, and mauve shades, some striped and blotched, and others suffused with varying shades; nor must the white-flowered kinds be omitted, these being rendered conspicuous by a well-defined blotch of blue, crimson, or purple at the base of the petals, the same marking being extended to the majority of the varieties, though in some of the rose and scarlet shades the blotch is absent; and, lastly, we find green represented among the many shades of colour which these possess, and while the colour is rarely tolerated among flowers, it appears here as a welcome addition to its group by its decided tone of light green—quaint, it may be, but beautiful withal. Mere description is, however, inadequate, and those who would know more of their intrinsic beauty and worth should lose no time in commencing their culture. *J.*

Treatment of Pot Lilies.

Lilies, like other bulbs, as soon as they have done flowering, often get put aside, and receive little or no attention, and therefore become dry, which causes the tops to ripen off prematurely, instead of which they ought to be kept healthy and green as long as possible; and this is most important, for without fresh leaves and stems the bulbs cannot be maintained in a growing state, or got to a size and strength that will enable them to bloom well again afterwards.

The best way to treat these plants, as soon as they have done flowering, is to stand them at the foot of a wall, or other sheltered spot; keep them watered sufficiently often to maintain the foliage in the condition referred to, till it begins to turn of a yellow tint, when the watering should be less frequent, as then the soil ought to be generally on the dry side; and if heavy rain is expected, or a continuance of wet, it is advisable to lay the pots on their sides, so as to throw it off, otherwise it would be apt to injure the roots. As soon after the tops die down, the earlier the plants are repotted the better, and for this purpose there is no soil equal to good turfy loam, with a small quantity of sharp sand added. If manure be added at all, it should be put below the bulbs, as it ought never to be in contact, or very near to them, and it is an easy matter to give stimulants by way of liquid manure or top-dressing when the plants are growing. To allow for the last-named being done, it is a good plan, when repotting, to keep the bulbs low down, and not fill the pots more than to about three-quarters of their depth, by which means space will be afforded for sods of loam after the stems have reached 1 foot or more in stature. Into this top-dressing the roots at the base of the stem will enter as growth continues. In potting, the small bulbs that have formed round the stems should be removed and potted separately, to be grown on apart from the flowering bulbs; and it is well to sort out the latter into two sizes, and keep the strongest of these to themselves, and which may be grown either singly or in pots of three to five, according to the size of the pots used.

None of the Lilies require much root-space, as has been exemplified again and again; and the fine specimens of L. Harrisii shown by Messrs. Carter at the Crystal Palace show were in 48's; and I have always found that the less root space the bulbs of L. auratum have, the better they do—which is, I think, the experience of most growers of Lilies. After potting the bulbs, the most suitable place in which to place them is a cold frame, where they should stand the whole winter, and be merely protected from frost, and have only enough of water to keep the soil moist. *J. S.*

Lilium longiflorum var. Harrisi.

This Lily seems to be fast coming into favour; and no wonder, for it is a very fine thing for early flowering in greenhouse or conservatory. When it is interspersed with other plants, standing above them, it shows off its white blooms admirably. At the recent show at the Crystal Palace this was well shown in Messrs. Carter's stand, where a group of Lilies with Cinerarias underneath had a striking effect. Lilium Harrisi does not seem to require much soil or root-room, as those referred to were single bulbs in 48-sized pots, and the plants were strong and healthy throughout. *J. S.* [L. longiflorum, of which L. Harrisi is a form, is almost as good, and when it is forced it is nearly as tall. Ed.]

The Herbaceous Border.

HELENIUM HOOPESII.

With the departure of the showy Doronicums, which provide so rich a display of yellow flowers throughout the spring months, our herbaceous beds and borders do not boast of much golden-yellow till late in summer, except it be in the case of Calthas and Ranunculus speciosus, and these, in consequence of their partiality to shade and moisture, are not usually represented in the ordinary herbaceous border. The above plant, which comes in flower at the end of May, and continues for a long time in perfection, fills up the gap to some extent, and the rich orange-yellow of its flowers at once renders it a conspicuous plant. It is nearly 3 feet high, of vigorous growth and compact habit, with a much branched inflorescence; the radical leaves glabrous and coriaceous. The plant requires no staking. The plant is readily increased by division and also by seeds.

Inula glandulosa

is another plant of much beauty, with rich yellow flowers, and generally two or three weeks later in flower than Helenium Hoopesii. It is a striking and desirable hardy plant, long known to cultivation, although still somewhat rare. It is distinct from

all the other members of its genus, and we have no other perennial plant that may be compared to it, either for the singular beauty and form of its flowers, or for their size and colour. The flowers are composed of very narrow, thread-like florets, twisted and irregular, and sufficiently so to give it the appearance of a single-flowered Japanese Chrysanthemum. The plant rarely exceeds 2 feet in height; the flower-stem issues from a sparse tuft of rough, somewhat woolly leaves, and bears on its summit the golden-yellow flowers fully 3 or 4 inches in diameter. It thrives well in rich light loam, and is a plant deserving of every attention. It comes from the Georgian and Circassian Alps.

Lupinus arboreus.

This is probably one of the most useful members of this genus, remarkable for its freedom in flowering, fragrance, and colour, and when large the plant quite eclipses many of our best flowering shrubs. It is really a shrub, and as such it is adapted for association with other plants of a more sombre hue, while, as an isolated specimen, it is not easily matched. It will attain a height of 6 or 8 feet and as much through, producing its charming, fragrant spikes of canary-yellow flowers in profusion. For planting against a west or south-west wall, where it has the chance of 15 feet in height, it forms a remarkable picture, and by attention to nailing it as the growth is made, a large space may quickly be covered. Any ordinary soil, however poor, seems to suit it. Where large rockeries exist it would make a fine subject for unrestrained rambling over blocks of stone. Its hardiness is not so complete in soils over-rich in humus as in those which are the reverse. The plant may be increased to any extent if desired, the small young shoots, about 4 inches long, detached with a heel, rooting readily in a cold frame any time during summer. *J.*

CHINESE WHITE WAX.

The British Consul at Ichang, in his report for the year 1887, which has only recently appeared, thus speaks of Chinese White or Insect Wax:—"The steamer export of white wax (not bleached bees'-wax, but the insect wax produced by the coccus Pe-la) has increased greatly. This curious and beautiful substance, though widely used in China, and though known to science, and repeatedly noticed in books on China, seems to be unfamiliar in our home market. Its high price has been against it, but the price has gone down greatly. According to my information, the price at Kia-tung-Fu (in Sze-ch'wan, on the Min River, some 700 miles up-river from Ichang) has lately been about 1*s.* per pound avoirdupois. At Ichang there is at present no wholesale market for the article, but the wholesale cost, as got for local consumption, is stated at about 1*s.* 3*d.* per pound. Allowing for duty, freight, commissions, &c., the article might be placed on the home market at about 1*s.* 6*d.* per pound. In view of its beauty, hardness, and high melting-point, it might be acceptable in the candle manufacture, to serve as a coating or otherwise. Not knowing whether samples are readily to be got in our country, I think of sending a sample to the Society of Arts in London."

The writer of this report is, perhaps, not aware that the wax has appeared commercially in this country, though only very occasionally.

In Shantung, it seems, especially in the neighbourhood of Lai-yang, where the trees are plentiful, the insects are bred, and the wax produced. The insects are put on in the spring, and the wax is gathered at the end of the summer, after which the insects are collected, and preserved indoors till the following spring. At the Kia-tung-Fu the wax-farmers, about the end of April, convey the very prolific female insects from the breeding districts to the wax district. The journey is performed on foot, and occupies about a fortnight, being performed only at night, as exposure to the heat of the sun would forward the hatching of the eggs, which must not take place till the females have been attached to the trees, which are either those of Fraxinus chinensis, or Ligustrum lucidum. Six or seven of the insects are wrapped together in a Palm-leaf, and attached to the branches, where they soon give birth to a multitude of young ones, and then die. The young insects swarm over the twigs of the trees, which they puncture in all directions, with the result that they are soon completely incrusted with the white wax. No care is necessary while the insects are on the twigs, as nothing ever touches them, not even ants. About the latter end of August the twigs are cut off, and boiled in water, in which the wax melts and floats on the top. It is afterwards re-melted, and poured into pans, where it cools into a translucent, crystalline, somewhat brittle white mass, not unlike spermaceti. The exports of this wax from Shanghai in 1879 amounted to 6542 piculs. *John R. Jackson, Museum, Royal Gardens, Kew.*

ANGRÆCUMS.

So many valuable additions have been made during recent years to this genus, that there are now few others, belonging to tropical Orchids, whose cultivation is of so much interest. The characteristic form, and the beauty of the flowers generally, added to their freedom to bloom, secure their representation in most collections, however small. The genus is largely at home in Madagascar, but several species are found in Tropical Africa, Comoro Islands, &c. It is of interest to note that one species—A. falcatum—occurs in so widely removed a habitat as Japan.

Angræcums have no pseudobulbs, but the leaves, which are always attached in two opposite rows to the stem, are usually thick and leathery. Most of the species have white flowers; some, however, are cream or ivory coloured, and in others, certain parts have a greenish tinge, whilst those of A. Hildebrandtii—a rare, but very small-flowered species—Reichenbach describes as having orange-yellow flowers. The flowers are produced from the axils of the leaves usually on more or less drooping racemes. The sepals and petals are spreading, and generally alike in size and shape. The front portion of the lip is sometimes similar to the petals, thus giving the appearance of an almost regular flower; but, as a rule, the lip is larger, and is furnished at the base with a long and slender spur.

Some species, such as A. eburneum, its varieties, A. sesquipedale, and the small A. hyaloides, are amongst the easiest of warm-house Orchids to grow. They succeed in the same house, and under the same conditions as Aërides and Vandas. Several species, however, have the reputation of not being easy to cultivate; A. Scottianum (see *Gardeners' Chronicle*, n.s., xiv., fig. 30) and A. caudatum, still a rare plant, may be pointed out as examples; but so far as I have been able to form an opinion, if sufficient heat and moisture are afforded them, there are but few which present any difficulty in their cultivation. The treatment which proves the most successful is that afforded to Phalænopsis—that is to say, a warm humid atmosphere throughout the year; no attempt at resting beyond the ordinary lowering of temperature and moisture in the dark months; and, whilst securing a plentiful supply of fresh air, a careful avoidance of draughts. The larger growing kinds like A. eburneum, that root so freely, require large pots, which should be half filled with crocks, and the remainder with good moss and a few pieces of charcoal. Smaller species like citratum and bilobum, are most suitably placed in baskets and suspended from the roof. A. Scottianum grows vigorously on a piece of soft Fern stem, with a little sphagnum attached. In the matter of watering it is not good policy to let these dwarfer kinds ever get very dry. The moss ought to be uniformly moist and fresh, care being taken not to allow it to become sodden, and, above all, in dull weather.

The following species are some of the best in cultivation:—A. bilobum, which was sent to Messrs. Loddiges, of Hackney, in 1841, is a charming little plant. Its flowers are white, with a slight tinge of rose, and are sweetly although not strongly perfumed; they occur in pendent racemes, and measure individually 1½ inch across, the slender spur being about 2 inches long. The specific name refers to the leaves, which are deeply two-lobed at the apex. The variety Kirkii, introduced in 1882, is smaller; the flowers are white, and the brownish spur nearly 3 inches in length.

A. caudatum was originally introduced in 1834 through Messrs. Loddiges from Sierra Leone. The sepals and petals are yellowish-green, and the lip pure white; the spur is the longest of any, with the exception of that of A. sesquipedale. On a plant under my charge which flowered in July, 1886, they were 10 inches long, and of a pale green colour.

A. citratum, owing to large importations, is now one of the most popular of the smaller growing species. Its long, densely flowered racemes have an admirable effect when the plant is suspended. The flowers are white, with a slightly yellowish tint, not sufficiently marked in most instances to justify the name. The spur is three-quarters of an inch long, and somewhat inflated at the tip. The plant is a native of Madagascar.

A. Ellisii, most appropriately named to commemorate the services rendered to horticulture by the late Rev. W. Ellis, who introduced this plant, A. sesquipedale, and other Orchids from Madagascar. It has leaves of a deep green colour, upwards of a foot long, and notched at the ends. The raceme bears about a score pure white fragrant flowers, which possess tails 7 inches long.

A. Kotschyi bears drooping racemes of creamy-white, sweetly-scented flowers, that measure more than an inch in width, and have a twisted spur 6 inches long. It was introduced from Zanzibar in 1880.

A. Sanderianum is one of the latest importations in Angræcums, and was described by Reichenbach in these pages in 1888. It is a native of the Comoro Islands, and is undoubtedly one of the finest species. At Kew there are plants bearing spikes of more than twenty flowers each; these are pure white, and with a spur 3 inches long.

A. Scottianum is a very desirable species, and is interesting because its leaves are terete. It is noteworthy that in several genera of Orchids one or two species occur with terete leaves, thus breaking away from the general characteristics of the remainder. Aërides Vandarum, Oncidium Jonesianum, Vanda teres and V. Hookerii, Dendrobium teretifolium, and Saccolabium gemmatum are instances in point. The plant was sent to this country in 1878, by Sir John Kirk, from the Comoro Islands. The flowers, which are white, the oblong lip large and handsome, occur singly or in pairs. It has become less rare than formerly.

A. eburneum is one of the stateliest of Orchids, with its long, stiff, and leathery leaves, and upright spikes of closely-set green and white flowers. It was introduced by the Horticultural Society from Madagascar in 1826.

A. sesquipedale is well known to most cultivators; it has from time to time been descanted on in these columns. *W. B.*

VEGETABLES.

FIRST EARLY PEAS.

There will always be differences of opinion as to which is the earliest Pea. Soil, position, the conditions under which the seed was saved—all have much to do with the early maturing of Peas. I recently had an opportunity of inspecting the samples growing on the trial grounds of Messrs. Hurst & Son, at Springfield, Chelmsford—in all there were 550 samples—not this number of varieties, but several samples of one variety—First Early, Second Early, Main Crop, and Late. When a large number of varieties are growing together—sown the same

day, in the same soil—a pretty fair opportunity is afforded for instituting comparisons, and drawing conclusions. The samples at Springfield are all of uniform length, and all are supported by sticks. They can, therefore, be seen at their best, provided the season has proved favourable; and it is favourable—a fact acknowledged on all hands.

Among the round-seeded varieties it is a neck-and-neck race with three or four—Improved Sangster's, Eclipse, and Improved William I. The first-named is a remarkably even stock, very early; short-podded, it is true, but a free cropper. It appears to be an axiom with seedsmen that, the earlier a Pea is, the shorter will be the pod. Improved Sangster's Pea is known in France under the name of Caractacus, and is largely grown by the French market gardeners. Harrison's Eclipse is a good Pea for market gardeners; it is now a well-established sort, and keeps true to character. Eclipse, Alaska, and Laxton's Earliest of All average 2½ feet in height, and may be accepted as improved stocks of Kentish Invicta, but with pale-coloured instead of dark green foliage; and they keep truer to character than the old sorts. But I put Improved William I. before either Improved Sangster's No. 1; it grows a few inches taller, and that may make it a trifle later, but it has longer and better filled pods, and it is decidedly of better quality for table. It is a Pea that is kept up to the mark by Messrs. Hurst & Son growing an acre of it every year on sticks, for the purpose of obtaining stock of the truest and finest quality, which is sent out to be grown to supply the large quantities required. Taber's Early Perfection appears to be of the same type as Eclipse. Kentish Invicta is supposed to have been selected from the old Blue Prussian; it has dark foliage.

The English Tom Thumb Pea, or Beck's Gem, is known for its dwarf early character; the American Tom Thumb has finer pods, is more prolific, and rather earlier. Blue Peter is a very dwarf Pea, very good, and useful as an early variety for small gardens; and not improbably a round-seeded selection from Maclean's Little Gem. First Crop Blue appears to be a robust-growing variety of Beck's Gem.

Bishop's Longpod, an old and once popular variety, is not much grown in the country; the bulk goes to France, where it is grown for tinning in a green state. Burbury's Early Kenilworth is a first early Pea of somewhat uneven growth, the dwarf form decidedly the best; it looks like a round blue-seeded small Supreme, and one might suppose its parentage with William I. and Laxton's Supreme. Burbury's Conqueror appears to be a later and taller variety of the foregoing. So much, then, for the round-seeded first early Peas.

Of the dwarf-growing first early wrinkled varieties William Hurst is decidedly the best. It was seen in its truest and best form, very carefully selected. It is of very dwarf growth, with a longer and more curved pod than in the case of American Wonder. Chelsea Gem is the white-seeded form of William Hurst, that of the latter being blue. American Wonder, it is supposed, is a dwarf selection of Little Gem. Here was a few lines of Little Gem, quite true, uniform, and thoroughly good, as I remember it when originally sent out by the late Mr. Charles Turner, of Slough. Little Gem is revived in a good stock of American Wonder, and one need not be surprised gardeners are found growing it for their early crops. Multum in Parvo is the largest podded among the early dwarf wrinkled varieties. This was no doubt one of the seedlings raised by the late Dr. Maclean, of Colchester. It is a capital garden variety, and it is in great demand about Edinburgh. Messrs. Hurst & Son say that out of every 20 bushels of it they sell, fully 19 go to Edinburgh.

Bliss' Abundance is classed with the first early wrinkled varieties, but it is not really so. Its truest designation would be a first early main-crop variety, coming nearest to Advancer in general character; Edinburgh Beauty is like a dwarf selection from Advancer, but of no particular merit.

Dr. Hogg has the habit of William I., but the pods are rather more curved. It is perhaps doubtful if it will maintain its individuality for any great length of time. Burbury's Early Bird does not appear to differ from it, and there is this characteristic about Dr. Hogg, that while the pods were originally of a deep green colour and curved, they appear to be getting back to a paler colour, and straighter in point of shape. Carter's Anticipater is a first early Pea in the way of Laxton's Alpha in growth, but dwarfer, and the seeds are whiter in a dry state. It looks as if it had been originally selected from it.

A first early Pea, as yet unnamed, seems to promise well. It looks like an early form of Telegraph, the seed being similar also; as early as Eclipse. This variety seems as if there is a good future before it. *R. D.*

The Apiary.

SOME USEFUL SEASONABLE HINTS.

With the exception of a few days, the whole of June was fine and warm, and in cases where bees were up to the full strength by June 1, good crops of honey have been secured. The weather now is very dry, and unless rain should soon come the honey-gathering season of 1889 will shortly be over; but should grateful showers fall in time, a further heavy crop of honey may be secured in the present month. But my weather-glass ascends, and there is no sign at present of such good fortune.

Swarms which came out at the end of May, or early in June, have already filled their hives with honey. It is perfectly astonishing sometimes to see how quickly this is done. Extracting will soon be in full swing. Where combs are new, particular care should be taken, or the comb will be broken to pieces. This is at the best a messy job, but when the comb breaks to pieces in the act of extracting, it is very much more messy. Turn the handle very gently at first, and the process, though it may appear to be tedious, is quicker in the end; and it is very much to the advantage of the beekeeper to have whole combs to give to the bees when required.

The great show at Windsor is at an end, and beekeepers have much to be thankful for. Their craft was patronised by the Queen herself, and beekeeping will in consequence be very much advanced. There were hives and hives, and no small work devolved upon the judges to say which was best. Messrs. Edey & Son had a very good stall and show, and their catalogue is worthy of study. They have a new observatory hive with eight frames, a new reversible hive, and a new wax-extractor, which are worthy of attention. Many other manufacturers had also excellent appliances and honey. As the honey crop was *nil* last year, no doubt beekeepers will desire a heavy one now. To secure this, doubling is one of the best plans. There is generally much more honey secured by doubling—that is, putting frames over frames—than using the 1 lb. sections. Extracted honey is also more easily kept than honey in the comb. *Bee.*

Plants and Their Culture.

Ixoras which were Flowered Early.—Any of these plants which have done flowering should be induced to make a second growth by cutting back the stronger shoots somewhat slightly, and placing the plants in the warmest part of the stove, syringing them freely, and giving weak liquid manure liberally. These specimens will make good growth, and set a quantity of bloom that will be useful at the time. A stock of young plants should be raised, or obtained, of the useful I. coccinea. For purposes of propagation, choose clean healthy shoots, free from mealy-bug. No plant is more useful for cutting purposes, where large quantities of good cut flowers are required. The plants are easily grown with a good supply of heat and moisture; and if some kind of insecticide be used carefully, the plants may be grown with but little trouble. It is advisable, when using commercial insecticide, that it should be rather weaker than is stated in the printed directions, the foliage soon suffering if a strong mixture be employed. I employ the syringe three or four times daily whilst the plants are making growth, and it is very rarely that any further cleansing becomes necessary.

Climbers.—Many of these will require frequent attention in tying and regulating growth, so as to admit the light to the other plants beneath. Every opportunity should be taken to clean the plants of insects, otherwise the plants under them will soon get infested also, and disfigured. If thrips are infesting the plants, give a thorough wetting of the foliage with an insecticide, removing the plants under the climbers during the syringing.

Basket Plants.—These will require large quantities of water, especially Ferns; and, to save time, the baskets should, where practicable, be immersed once a week in a tank, and allowed to drain for a short time before hanging them up. A good stock of Panicum variegatum and other trailing plants should be propagated for autumn and winter decoration. *G. Wythes, Sion Gardens, Brentford.*

Fruits Under Glass.

Cucumbers in Pits and Frames.—Keep the plants which are in full bearing well thinned out as regards the shoots, and the fruits cut as soon as they become fit for use. Assistance may be afforded with manure-water made from soot or sheep's dung, a little lime being mixed with it occasionally. It should be remembered that manure-water should be clear when used. Top dress with loam and manure as soon as the roots appear outside the hills, and maintain a genial atmosphere by damping the walls and paths, and syringe the plants when closing the ventilators, or lights, in the afternoons. In the morning, air should be given early, and increased in quantity till about mid-day, shutting up with the thermometer for a short time at 85°. Cuttings may be struck, or seeds put in of the best winter kinds towards the end of the present month.

Pine-apples.—The winter fruiters, after having been rested, will be in a proper condition to start with the aid of a small amount of fire-heat and moisture, being careful not to employ much fire-heat during very warm weather. It will be better to ventilate the pit pretty freely, opening the ventilators at an early hour, and gradually increasing the amount of air admitted as the sun gains in power. Weak manure-water may be sprinkled about occasionally on the paths, and the pit shut up in the afternoon, after syringing the plants and damping the beds, walls, &c. The temperature may then be maintained at 85°, allowing it to fall 10° by the morning following, with a little ventilation on very warm nights. Fruits, which are ripening, may be placed in vineries, where they will ripen slower than in the pine pit, and keep longer afterwards. Suckers may be potted firmly in moderately dry loam, plunged in a bottom-heat of 90°—95°, and kept close and shaded for a few days, not watering them till roots begin to form, but sprinkling with the syringe occasionally on warm days. Examine plants carefully before affording water, for although the surface of the soil may look damp, the plants may yet be suffering from drought. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Treatment of the Summer Shoots.—Still continue the operation of shortening back all young growths to within a few buds of their base, it being of very great importance that all the light possible should reach the fruit and the young fruit-bearing branches. If the crop of fruit on any tree be heavy, do not cripple its bearing-power for another year by over-cropping it; but thin well and early, removing, as a matter of course, all badly placed fruit, and those which are not likely to be of good shape.

Apricots which were attended to early will now be breaking into fresh growth, and these growths should be at once pinched, and the pinching-in repeated whenever it is necessary. Let there be plenty of space allowed for the fruits to swell, and remove any nails that are likely to press against them. Keep the trees clean by the free use of the garden engine, but discontinue syringing as soon as the fruit begins to assume the colour of ripeness. If mildew puts in an appearance, dust with flowers-of-sulphur the affected foliage when it is damp.

Strawberry Plants of the earlier kinds on light soils, and which have borne heavily, should not suffer from want of water at the roots, should rain not fall, and if the runners are not required, all of these, and a few of the lower leaves, should be removed without delay, slightly pricking up the surface of the soil afterwards. Mulch the soil with short dung, and thoroughly deluge the beds with water, thereby encouraging the formation of new foliage and roots, and the due ripening of crowns by the end of the season. *H. Markham, Mereworth Castle.*

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Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

MONDAY, JULY 15—Royal Botanic Society: Feast of Roses.

FRIDAY, JULY 19—Gardeners' Orphan Fund: Dinner at Cannon Street Hotel.

SHOWS.

TUESDAY, JULY 16—Birkenhead. Wolverhampton (three days). Carlton-in-Lindrick.

WEDNESDAY, JULY 17—Bedford.

THURSDAY, JULY 18—National Rose (Sheffield). West of Scotland Rosarians. Salterhebble.

FRIDAY, JULY 19—Ulverstone.

SATURDAY, JULY 20—Manchester Royal Botanic.

SALES.

THURSDAY, JULY 18—Orchids, in Flower and Bud, at Stevens' Rooms.

FRIDAY, JULY 19—Imported and Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—63°.4.

Nomenclature of Orchids.

IN view of a meeting to be held shortly to consider the subject of Orchid nomenclature, we gladly give publicity to the following letter from the Director of the Royal Gardens, Kew. The course that should be followed has, over and over again been laid down, both in the Society's *Journal*, in these columns, and quite recently in the *Journal of Horticulture*, the difficulty is to induce those who are not botanists to conform to the laws:—

"I observe that the Council of the Royal Horticultural Society has summoned a meeting to consider what may be called the Orchid question. As I am about to go abroad in search of a much needed holiday, I regret it will be out of my power to be present. Perhaps I may, therefore, be allowed to say a few words in anticipation. I hope that one result of the Conference will be to obtain some sort of agreement amongst Orchid-growers as to the principles upon which Orchid nomenclature for horticultural purposes should proceed.

"It must, I think, be evident that all the botanist can do is to refer any Orchid submitted to him to some well-defined species which has already been described in intelligible terms, or to describe it as new if this has not already been done. For horticultural purposes it is evident, however, that something more than this is wanted. Within the limits of a species it is known to every one that there are variations of size, colour, and texture which practically elude botanical terminology, and yet are of paramount interest and value to the cultivator. The difference between a fine form and a poor one of the same species can often with difficulty be seized, even in ordinary language, and yet it is recognisable at a glance by every experienced Orchid-grower. It seems to me that it is a great mistake to suppose that a botanist can deal with such forms in any useful way. Their distinctness and merit is a matter for the judgment of experts, just as in the case of any other cultivated plant. Nothing, then, is gained by giving such forms Latin names, which imply that they are well-marked varieties. The proper course is to give them arbitrary names in English or some other language, and these should not be accepted as authoritative till they have received the approval of the Floral Committee of the Royal Horticultural Society.

"If this plan be adopted, as I hope will be the case, one great step will have been taken to reduce Orchid nomenclature into something like order, and to clear the literature of a host of cumbrous and really misleading names.

"As to the determination of species, I may perhaps be permitted to state how we stand. We have at Kew what I do not doubt to be the most extensive Orchid herbarium in the world. With LINDLEY's Orchid collection as a foundation, I believe it to be richer in authentic types than even that of the late Professor REICHENBACH. We have for some time had upwards of 1000 species in cultivation, and from this source the herbarium is constantly being enriched. We have also an enormous collection of original drawings and figures, which have been revised, mounted, and arranged, in a conveniently accessible form. I may add, that for a long series of years, Professor REICHENBACH was in the habit of paying Kew an annual visit, and he spared no pains in assisting us in the elucidation of doubtful points, and the determination of unknown species. Next to his own herbarium, Kew, therefore, probably possesses the best record of his work in existence. Besides this, Mr. BENTHAM expended two years' labour upon the Kew collections in the preparation of the *Orchideæ* for the *Genera Plantarum*, and Sir JOSEPH HOOKER has now under review the gigantic army of the species indigenous to British India. For a long series of years Professor OLIVER has given especial attention to the family; Mr. BROWN has worked up with great care the terrestrial species, especially those of South Africa; and Mr. ROLFE, who now has charge of the collection, has for a considerable period been assiduously occupied in its revision, and in filling up its deficiencies.

"The only serious point in which the Kew Herbarium is badly equipped, is in the types of species described by the late Professor REICHENBACH, espesially in the pages of the *Gardeners' Chronicle*. The great majority of these are probably in cultivation in this country. It is of the greatest importance that Kew should secure specimens of them. Many of them will die out, and unless they are of great horticultural merit, they will probably not be reintroduced. In any case, without authentic specimens, it will be extremely difficult to ascertain precisely what Professor REICHENBACH had in view. I propose, therefore, with the permission of the Editor, to communicate to the pages of this journal, from time to time, lists of the species which are unrepresented by specimens in the Kew Herbarium. And I earnestly hope that cultivators who are in possession of plants of any of these known to be authentically named, will communicate specimens of them to me.

"I may take this opportunity of thanking the numerous correspondents who have already in so many ways come to our assistance. It is almost invidious to single out names, but I cannot but mention Sir TREVOR LAWRENCE, Baron SCHRÖDER, and HENRY LITTLE, Esq. To Inspector ORTGIES, of the Botanic Garden, Zurich, I am indebted for some authentic Reichenbachian memoranda and types. The Rev. C. PARISH has given us a beautiful collection of drawings of the fruits of Indian Orchids from his own inimitable pencil. Finally, we are promised the reversion of a very valuable collection of Orchid drawings, faithfully carried on over a long period of years. I feel every confidence that the Kew staff will be able to effectually aid Orchid cultivators. It only remains that they in turn should co-operate to perfect the Kew collections as a standard of reference.

"W. T. THISELTON DYER,
"*Director, Royal Gardens, Kew.*"

J. Townshend Boscawen.

THE announcement of the death on Saturday last, July 6th, of the Hon. and Rev. J. TOWNSHEND BOSCAWEN, will be received with the greatest concern and sorrow. Little did we think, as we shook him by the hand at the Rose Conference on the previous Tuesday, that this was to be the last occasion. It appears that he was suddenly attacked on Saturday, and died after a few hours' illness.

Mr. BOSCAWEN was in his seventieth year, and had been Rector of Lamorran, Cornwall, for forty years. He was an enthusiastic horticulturist, zealous and active to a remarkable degree. Few men had a better general knowledge of plants, and few could cultivate them better. His seedling Rhododendrons, his Camellias, his Orchids, were things wherewith he was wont occasionally to astonish his friends, while Lamorran was a very treasure-house of rare, beautiful, and interesting plants. He was much consulted as a landscape gardener, and as to the management of gardens and woods. He was proud of his descent from JOHN EVELYN, whose tastes he largely inherited. Mr. BOSCAWEN acted for a time on the Council of the Royal Horticultural Society, but retired when it became evident that his views were not shared by the majority of his colleagues; and to the last he was a most energetic member of the Bath and West of England Society for the promotion of agriculture.

Mr. BOSCAWEN belonged to a class of amateurs with wide knowledge of plants and trees, and with catholic sympathies as regards horticulture generally, a class, unfortunately, so small that his decease will cause a serious deficiency. As a friend he was genial, courteous, considerate, staunch; what wonder then that the news of his sudden death came as a great shock, and that his memory will be cherished with respect and affection by all who had the good fortune to be among his associates and friends.

ONCIDIUMS WANTED AT KEW.—We append a list of species of Oncidium described by Professor REICHENBACH in the *Gardeners' Chronicle*, of which, it appears, there are no specimens in the Kew Herbarium. Specimens of these or of any other species known to have passed through Professor REICHENBACH's hands would be welcome:—

andigenum	exasperatum	phylloglossum
annulare	grandiflorum	plagianthum
aurarium	gyrobulbon	plicigerum
Baldeviamæ	hæmatochrysum	porrigens
Berenyce	Hrubyanum	pyxidophorum
bryopholotum	hyphæmaticum	robustissimum
calanthum	Kienastianum	rostrans
caloglossum	Lansbergii	rotundatum
Carderi	lepidum	rusticum
chrysops	leucotis	saltabundum
crocodiliceps	litum	semele
cryptocopis	ludens	tectum
dactylopterum	macropus	tetracopis
detortum	melanops	tricuspidatum
diodon	meliosmum	ustulatum
elegantissimum	metallicum	vernixium
endocharis	Millianum	virgulatum
euryeline	monachicum	xanthocentron
euxanthinum	peliogramma	xanthodon

SENECIO PETASITES.—The plant figured on p. 47 has long been known to cultivators, having been introduced from Mexico; and plants raised from seeds sent to AYLMER B. LAMBERT, Esq., of Boyton, flowered for the first time in this country in 1813. The lower leaves grow on long footstalks, and exceed in size those of the indigenous Butterbur,

some similarity to which suggested the name given to the plant. The photograph from which the engraving was taken is by Mr. R. V. Sherring, F.L.S., and exhibits the plant standing in winter last year in the open air in a garden near Falmouth, where it formed a conspicuous object in a sheltered spot. The plant is not hardy enough in the neighbourhood of London to withstand the temperature of our mildest winters, but in the milder parts of southern Cornwall and Devon, in the coombs and seaside gardens, the plant remains uninjured. It is a rather coarse-looking subject in a conservatory, but flowering as it does in winter and early spring, it might find a place during the time it is in bloom in a roomy structure where its large panicles of yellow flowers would assist to give brightness at a dull season. When grown in a pot in rich soil, and well fed with liquid manure when it becomes root-bound, the plant will flower more profusely than the engraved plant appears to have done. When the flowering is over the stems may be cut down, and the plant rested for a time in a cold pit, if in a pot, or repotting performed in June and July. Propagation is readiest done by division of the root-stock, or by root-cuttings. It is sometimes found under the name Cineraria platanifolia. Bees are fond of the flowers.



Fig. 9.—Senecio petasites: flowers yellow.

The Rose Conference.—Lest, in the depression occasioned by the relatively small number of visitors, and the abstention of many amateur exhibitors whose co-operation had been counted on, it should be imagined that the Conference was a dismal failure, it may be as well to assure our rosarian friends that, so far from that being the case, for substantial interest, the Rose Conference has not been surpassed by any other that has been held. The information collected in the schedules that were circulated, when it comes to be tabulated, will be found of first-rate importance, practically; while the Conference papers generally are of high quality, and some exceptionally so. For substantial and permanent value, the record of the Conference, therefore, when it comes to be issued, will be found inferior to none—not even to the Apple Congress. In some quarters there is a disposition to undervalue Chiswick as a meeting-place, and the centre of the Society's practical work, and to point to the scanty attendance at the Rose Conference as proving the unsuitability of Chiswick for such purposes. But, on the one hand, the many distractions must be borne in mind, and, on the other, it must be remembered that the public did come in numbers to the Apple Congress; and earnestly do we hope they will do so at the coming Vegetable Conference. Nothing should be left undone to secure the success of this most useful meeting.

Gardeners' Orphan Fund.—This most deserving institution for the benefit of orphans, and which is now in the third year of its existence, will, on Friday, July 19, hold its annual dinner at the Cannon Street Hotel, London. The President of the Institution, Sir Julian Goldsmid, Bart., M.P., has consented to take the chair on this occasion, and a great gathering of gardeners and others interested in the object of the fund will doubtless be got together, and by their donations and subscriptions still further extend its usefulness by helping those who, through no fault of their own, are unable to help themselves. Fuller particulars will be found in our advertisement columns.——Mr. G. W. Cummins, the gardener at the Grange, Hackbridge, writes: The Croydon Horticultural Society provided a tent at their annual show last week, in which to hold a "Rose Fair," in aid of the Gardeners' Orphan Fund, when a sum of over £12 was taken by Mrs. Gunner and Mrs. Dart, who presided, other ladies of Croydon assisting. Several exhibitors kindly gave their spare blooms for sale, many were also received from gentlemen in the neighbourhood, and others from Messrs. J. Walker (Whitton), Cheal (Crawley), Laing (Forest Hill), and Keynes and Williams (Salisbury). The flowers were tastefully arranged in the centre of the tent, and eagerly bought by the admiring spectators.

The Finances of the Royal Horticultural Society.—A phrase in our last issue, wherein we made use of the words "financial difficulties," is likely to be misunderstood if not corrected. We were alluding merely to the unfortunate disproportion which exists between the amount prudently available for expenditure for horticultural purposes on the one hand, and the requirements of the case on the other. We had no desire to imply that the Society was in any financial embarrassment. So far, indeed, is this from being the case, that, as we have frequently stated, the Society is, thanks to the activity of the Council, and the zeal and firm financial grip of the Treasurer, not only free from debt, but has a balance at its bankers; and, better still, a reserve fund. All this may be, and, indeed, has been, already noted with extreme satisfaction and gratitude to the Treasurer. We trust the numbers of new Fellows joining at the guinea subscription, and specially at the higher rates, may be so large as speedily to justify that more liberal expenditure which under present circumstances it may be imprudent to incur.

"Botanical Magazine."—The July number contains coloured illustrations of the following plants:—

Pandanus labyrinthicus, t. 7063.—A handsome species, which flowered and fruited at Kew, the ovoid heads of Pine-apple-like fruits being specially noticeable.

Syringa villosa, t. 7064.—A native of Northern China, as fragrant as the common Lilac, but not superior to it in attractiveness.

Olearia macrodonta, t. 7065.—One of the Daisy trees of New Zealand, constituting in this country a hardy and very ornamental evergreen shrub, of which a figure was given in our columns in 1886, vol. xxvi., p. 304, f. 62.

Disa lacera var. multifida, t. 7066.—A blue-flowered species, illustrated by Mr. N. E. BROWN in our columns, 1888, vol. ii., p. 664.

Eucryphia pinnatifolia, t. 7067.—A very handsome Chilian shrub or tree, with pinnate foliage and large Rose-like, white flowers. See *Gardeners' Chronicle*, 1880, vol. i., p. 337.

"LINDENIA."—Among the plants figured in the last number are:—

Zygopetalum Gibeziæ, t. 181.—A new species, described by Mr. N. E. BROWN. The flower-segments are linear, oblong-acute, white, the side-lobes of the lip shell-like, erect, the central one broadly oblong, with a thick cushion-like process at the base; the lip is white, striped with violet. *Masdevallia Shuttleworthii*, t. 182; *Dendrobium Brymerianum*, t. 183; and *Odontoglossum Halli*, t. 184; a very fine variety, the yellow segments of which are handsomely blotched with chocolate.

PLANT-FOOD.—In reference to this subject, Mr. J. J. WILLIS writes as follows:—"Among the numerous Rothamsted investigations, a series of experiments was commenced in 1857, and conducted for several years in succession, under the management of the late Dr. PUGH and of Dr. J. H. GILBERT, to determine whether our cultivated plants take up and appropriate to their use the free nitrogen of the atmosphere. The conclusion arrived at was that they have not that power by their leaves. In recent years, however, the question has assumed quite a new aspect. It now is, whether the free nitrogen of the atmosphere is brought into combination within the soil, under the influence of micro-organisms (bacteria), or other low forms of vegetable life, thus serving indirectly as a source of fertility and food to plants of a higher order. Considering that the results of HELLRIEGEL and WILGARTH (to which reference was made in this journal, vol. v., March 2, p. 269) on this point were, if confirmed, of great significance and importance, it was decided to make experiments at Rothamsted on somewhat similar lines. Accordingly, a series was undertaken in 1888 under the superintendence of Dr. J. H. N. MILLER, and the results so far obtained seem to indicate that there has been a gain of nitrogen beyond that supplied in the combined form in the soil and in the seed sown. These first experiments are, however, only preliminary, and a new series is now being commenced for the present season of 1889, with Lupins, Peas, Vetches and red Clover."

MEMORIAL OF THE WINDSOR GREAT SHOW.—Her Majesty has graciously expressed Her desire that the Abies Albertiana, exhibited by Messrs. LITTLE and BALLANTYNE, Nurserymen and Seedsmen of Carlisle, in their collections of Conifers, should be planted in the Great Park at Windsor as a memorial of this Jubilee Exhibition, and SIR JACOB WILSON has made arrangements for this being carried out.

TREE PLANTING IN SWEDEN.—We read in the *Deutsches Garten Magazine* for June, that in Sweden a society has been five years in existence, every member of which is bound to plant each year 8 acres of land with red or white Spruce. The seed comes from high latitudes. It would be a good thing if some such society were formed in Ireland and other treeless parts of these islands, so that in time to come we should be provided with sufficient home-grown timber for all ordinary purposes, and the land, moreover, rendered more productive and pleasant to live in.

LINDLEY AND HOOKER.—In the life of JOHN FRANCIS, publisher of the *Athenæum*, vol. ii., p. 182, the following anecdote is given:—King WILLIAM IV. once inquired abruptly of Sir WILLIAM HOOKER, "Sir WILLIAM, which is the greater botanist, you or Dr. LINDLEY?" "Dr. LINDLEY, your MAJESTY." "That is said like a gentleman, at any rate, retorted the King; and we'll leave the question for the botanists to settle."

STRAWBERRIES.—Mr. GEO. BUNYARD, Maidstone, desires us to state that the Strawberries, King of the Earlies, Pauline, Vicomtesse Hericart du Thury, and Bicton Pine are amongst those which are good for general cultivation, but not the best market varieties, as was stated in our report of his paper read at the Drill Hall, on the occasion of the last meeting at that place. See p. 807 in our last volume.

EFFECTIVE BEDDING.—A very beautiful example of effective arrangement of flower garden is now at its best in the gardens of T. F. BLACKWELL, Esq., The Cedars, Harrow Weald. The centre is a large raised bed with vase of flowers, with Ivy-leaved Pelargoniums hanging over; around this are green Cannas, then a broad band of Coleus Verschaffeltii, edged with variegated Mesembryanthemum and Echeveria. The larger beds around are of Pelargonium Flower of Spring, mingled with Viola Admiration and P. Crystal Palace Gem, edged with Iresine; while at intervals appear beds of dwarf scarlet Tropæolum, mixed with blue Lobelia and various other pretty combinations, the corner ones and those near the edge being mixed carpet and flowering bedding plants. The yellow Pyrethrum used in edging the darker beds gives a pattern to the whole, which, viewed with a backing of Roses on arches, the neat foliage of Ampelopsis Veitchii on the lofty conservatory, the bright green of the Ivy on the massive arches beside the flower garden, the lovely Roses and herbaceous perennials in the long side border, fronted with beds of pink, scarlet, and crimson Pelargoniums, forms a happy combination highly creditable to Mr. J. DINSMORE, the gardener at The Cedars.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—Their Royal Highnesses the Prince and Princess of WALES have signified their intention of being resent on Monday next, July 15, at these Gardens, on the occasion of the 50th anniversary of the Society's existence. The Society proposes to celebrate the event by holding a Special Exhibition of Roses, and a Floral Parade.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The quarterly meeting of the above Society was held on Monday evening last, at the Caledonian Hotel, Mr. E. BERRY in the chair. The death of one of the members has occurred since the last meeting (Mr. A. BARKER, of Hindlip). The amount standing in the ledger to the late member's credit (£8 7*s.* 4½*d.*) has been paid to the widow. Four new members were elected, and the usual business having been gone through, a vote of thanks to the Chairman ended the meeting.

GREMLIS' "SWISS FLORA."—Those of our countrymen who are contemplating a visit to Switzerland, especially those who have experienced the utility of the German edition of the work above mentioned, will be pleased to hear that an English version, translated from the fifth German edition by M. L. PAITSON, has just been published by DAVID NUTT, 270, Strand. Very little previous information is needed, but in that reprint to which we look forward it would not add much to the bulk of the book, while it would add greatly to its utility, if a glossary of technical terms were added for the use of those not familiar with botanical language.

ILLUSTRATIONES FLORÆ MARIS PACIFICI.—M. DRAKE DEL CASTELLO'S series of illustrations published under this name by GUSTAV MASSON has progressed as far as its fiftieth plate. The plants mentioned are mainly of botanical interest, but some, such as Cyrtandra induta and C. vestita, would form handsome stove shrubs.

FLORISTS' FLOWERS.

THE CALCEOLARIA.

ON July 5, I sowed the seed of the herbaceous Calceolaria, but this date needs not to be regarded as the only one, as seed may be sown both before and after that. It is found that if the seeds should vegetate prior to the longest day, the plants have a hard struggle for life during the succeeding warm weather. A half-crown packet of seed is such a small quantity that the sowing may be made in a 4 or 5-inch pot. The soil should be of a kind light and porous, and the upper portion of it must be finely sifted. Before sowing make the surface level and water it thoroughly with a very fine rose can, standing the pot aside till the soil is again firm, when the seed may be evenly distributed and covered slightly with fine sandy soil or sand alone. At this season of the year the seeds will vegetate freely in any position that the sun does not reach, and when the seed pots cannot be placed in such position they must be carefully shaded from the sun, for should the soil become dusty-dry during the germination of the seeds most of them would perish, and the seedsman would probably have to bear the blame. The tiny seedling plants themselves will not bear exposure to the direct rays of the sun. Even the application of water to the plants must be done in a careful manner, and rather than apply it through a rose, I would immerse the pot in water nearly to the rim, letting the water ascend from the bottom of the pot. The pot should not be held in the water more than a few seconds, as it is easy to make the soil too wet. The plants may be pricked out when they are quite small into small pans or pots; and until they have grown considerably, direct sunshine is injurious to them, and yet in the effort to keep the plants safe they may be shaded too much, the leaves becoming thin in texture, and in that state very liable to the ravages of green-fly and thrips. After the seedlings have made a few leaves, they commence to grow rapidly, and like all free-rooting plants they soon get pot-bound, unless shifted as fast as they require it. The Calceolaria, when once fairly under weigh, likes as rich a compound to grow in as the Cinerarias and Chinese Primulas. A suitable compost consists of loam three parts, leaf-mould one part, the same quantity of decayed manure, and sharp white sand as much as may be required to keep the same open. With the Calceolaria the right thing to do is to ventilate the frame freely, and not to shade it unless such is really necessary to prevent injury to the plants; and until frosts set in, a frame or cold pit is the best place to grow them in; and in fine weather the lights may be altogether removed—especially is this desirable at night when the weather is fine.

Plants that have been propagated by layers or cuttings will do as well as seedlings when once they get established, and the treatment is essentially the same as for seedlings; and a warm, close atmosphere will be found injurious even for cuttings. The best method of propagation from old plants of choice varieties is to bank up the stems with sandy soil until roots form, which they do freely. For ordinary purposes, seedlings make the best plants. *J. Douglas.*

HOME CORRESPONDENCE.

LATHYRUS DRUMMONDI.—I do not know how far it may help to elucidate the query raised by "D." (p. 803 of the last volume), as to the origin of the appellation of this Everlasting Pea, to mention that an old gardener called here recently, who, seeing the Pea growing and flowering, recalled the fact that fifty-two years ago—that was in 1837—when working at Peper Harrow, Lord Middleton's place in Surrey, Captain Mangles, or Captain Sterling, he is not certain which, brought both the Pea and the red Rhodanthe—probably Manglesi—home from the New Swan River, and gave seed to Lord Middleton. Seeds of the Pea were sown in the Pine-stove, and the plants bloomed the same year. My informant is positive that the variety in question and Drummondi are

identical. Captain Drummond, who is probably the collector of that name, lived then at Alstead, and used to take frequent journeys to China, bringing many plants home. It is therefore possible that in that way the Pea became identified with his name. Perhaps "D." may be enabled to trace the connection of the form with the locality given; but if it be found that this Lathyrus is in no way an Australian product, the information will be of little value. As to the identity or otherwise of Drummondi with rotundifolius, I may say that I found seeds of the latter to resemble dried-up brown French Bean seed, whilst those of Drummondii were smaller, much rounder, and of a pale hue. I have seedling plants of rotundifolius and rotundifolius giganteus, whatever that form may be, also seedling plants of Drummondii to bloom together next year. Plants in the seedling stage show little or no diversity. It will probably be found that these two kinds and Sibthorpi are but varieties of the same species. *A. D., Bedfont.* [Sibthorpi flowers much earlier.]

DELPHINIUMS.—"J. S." does well in drawing attention to Delphiniums. Probably there will be a great demand for the new varieties, as they will not only add another attraction to the herbaceous border, but be of great value to those circumstanced like myself, in having to meet a constant demand for cut flowers. What a pretty addition they will be to the contents of flower boxes sent to London! We have a charming single variety not named by your correspondent, which we received from Mr. Lowe, Shirnewton Court, and which I believe he told me he raised. It is named Lady Francis Russell, and in colour it is blue of a delicate soft hue, with a white and yellow lip. The colours blend most harmoniously, and make it very attractive. *Thomas Coomber, Hendre Gardens, Monmouth.*

GROWING ASPARAGUS IN SCOTLAND—Four years ago we planted a bed of this vegetable on soil which had been well prepared, but instead of the plants getting stronger, as was expected, they get weaker year by year. As we are situated in a late part of Scotland, and at an elevation of about 400 feet above the sea-level, would it be worth continuing the attempt to grow Asparagus. Perhaps some of your many correspondents will kindly give me advice. *T. H.*

AMORPHOPHALLUS TITANUM.—Your accounts and figures of the above plant, which has lately bloomed at Kew, are most interesting. Amongst other singular changes and appearances, I suppose it was not noticed whether any heat was produced at the time of the inflorescence? In Sir James Smith's *Botany*, an old standard work, we read (p. 91):—"The most remarkable account of the production of heat in plants is that given by Lamarck, in his *Flore Françoise*, by the Arum maculatum, the flower of which, at a certain period of its growth, he asserts to be, for a few hours, 'so hot as to seem burning.' The learned M. Senebier, of Geneva, examining into this fact, discovered that the heat began when the sheathe was about to open, and the cylindrical body within just peeping forth, and that it was perceptible from about 3 or 4 o'clock P.M. till 11 or 12 P.M. Its greatest degree was 7° Réaumur above the heat of the air. The phenomenon is well worthy of attention, and may probably not be confined to this species of Arum." I see, also, that Dr. Lindley, in his *Vegetable Kingdom*, p. 128, says:—"The Arum campanulatum, now Amorphophallus, is much cultivated in the Northern Circars of Bengal, where it is highly esteemed for the wholesomeness and nourishing quality of its roots." He speaks of the huge and hideous Amorphophalli of the Indian Archipelago; these spadixes have a fœtid, putrid smell, and are found to disengage a sensible quality of heat at the time they are about to expand, &c. I fear it may be some time before the plant at Kew will repeat its flowering. *W. W. Rowland, Bishop's Castle Vicarage, Salop.*

ULMUS CAMPESTRIS VAR. TRICOLOR.—There is growing in a garden by the side of Ealing Green, a very fine example of the variegated Elm, known as tricolor, in which the leaves are green, yellow, and white. This tree is known to be over fifty years of age, and it must be as many feet in height, the leaves are much larger than in the cases of those of the ordinary golden and silver variegated Elm. Singular to relate, this tree—one of the prime arboreal features of the place—has only recently been discovered to be so finely variegated; but old inhabitants are found testifying that it was so variegated forty years ago. It is not a grafted tree, but on its own roots, as all the suckers sent up from round the base of the trunk are as variegated as any branch. Is the tricolored variety a scarce form of the common Elm? The size and vigour of its foliage is a marked characteristic. *R. Dean, Ealing, W.*

A NEW PLAGUE ON STRAWBERRIES.—There is now carried on in my neighbourhood a very extensive cultivation of Strawberries, chiefly Marguerite Lebreton. The market gardeners are sorely plagued by a small weevil, which pricks with its snout the petioles of the recently flowered fruits, and these dry up straight off. Do you know that plague? [One of the commonest weevils.] Is there any remedy for it? Change of variety, or giving the run of the gardens or fields to the chickens, or what? *Volxem, Trois Fontaines, Vilvorde.* [Deeply trenching the soil. Ed.]

A NEW STRAWBERRY.—A day or two ago I strayed into the market garden of Mr. John Brown, of Mattock Bank, and there saw the best prolific Strawberry I have ever seen, and I know nearly all the varieties that are grown, and have seen them growing in nearly all kinds of soils throughout the kingdom, but this one surpasses all others I have seen. It has been in gathering a fortnight, and will last three weeks longer. It is of immense size, fine colour, and the flavour is all that could be desired. I am of opinion that the produce of this variety would be quite double that of any other Strawberry grown. If any one of your readers in that district will go and see it, they will find Mr. Brown a most genial man, and willing to furnish information. The Strawberry is named Brown's Goliath. *Fruit.*

ODONTOGLOSSUMS IN COOL-HOUSES.—I enclose you two photographs of Odontoglossum-houses, from which it will be seen that the plants are in full bloom at present (June 24). The houses, which are 22 feet by 11 feet, have a north aspect, and contain about 300 spikes of bloom. My employer, Thomas Statter, Esq., has spared no expense in getting together what I consider to be one of the choicest collections of this fine species, which in general estimation takes the first rank amongst Orchids. My treatment is as follows:—Plenty of pure water at all seasons, with as little artificial heat as possible. One of my Odontoglossum-houses never had the heat turned on the whole of last winter, and the plants speak for themselves as to what treatment is the best. In fact, I know of no other class of plants that can be grown with as little expense in fuel. *R. Johnson, gr., Stansh Hall, Whitefield, Manchester.* [The Odontoglossums seen in the photographs sent appear to be very vigorous plants, and well furnished with blossoms. Ed.]

SEWAGE.—The valuable manurial property of urine from horses, &c., is generally acknowledged, but how seldom do we find this valuable fertiliser utilised? In many places it is looked upon as a nuisance, and treated accordingly, by being got rid of in the most expeditious way possible—carried by a sewer in most cases to the nearest river or stream, where it is not only wasted, but is made to be in reality a nuisance, and very possibly a poison. Whereas, if a tank had been placed in or conveniently near to the garden, what a boon it would prove to be, and how soon the cost of tank and drain would be reimbursed in the increase of crops? The latest acquisition in this garden has been a manure-water tank and pump. A sanitary engineer has recently inspected and rectified the drains, &c., and although I am somewhat sceptical about the "improvements" made in gardens by some classes of scientific gentlemen, I am ready to acknowledge the benefit gained in this instance. The tank, which is in the kitchen garden, is one of Messrs. Winn & Co.'s, and draws the liquid through a tube by means of a continuous chain, furnished with buckets, which revolve over a large wheel, and thereby not only cast the sewage in a rapid and constant stream, but also thoroughly stir the whole body of water in the tank. The dry condition of the ground (we have only had 0·16 of rain since June 2, and that came in dribblets) has been favourable for estimating the value of this manure. It has been applied in a diluted form to plantations of Raspberries with grand results, while such crops as runner Beans and French Beans, Cauliflower, Lettuce, &c., are improved in a remarkable degree. The improvement of these crops from the use of the sewage is manifested in the colour of the foliage and the acceleration of growth. But the beneficial effects of this manure in garden and farm, where it can be used in various ways, is well known to many cultivators, and I would advise all who have this valuable manure at present running to waste to turn it to profitable use, especially as the outlay for tank and fittings would soon be covered by the increase in the value of the productions of the garden. My only regret is that there is not just now a greater quantity of it, but most of the horses are now in town for the season, and the drainings into the tank are limited in consequence. *T. Coomber, Hendre Gardens, July 6.*

NEW AND OLD VARIETIES OF PEAS.—There are now many excellent Peas for the exhibition-table, of which I will name a few that gardeners pin their faith to, and dare not be without, because of the ridicule or pity of their fellow-craftsmen of the neighbourhood. These are Telephone, Telegraph, Omega, Surprise, Ringleader, and so forth. The pods are large, and so are the seeds, but do we get the amount not of pods, for that might tell in their favour, either by weight or measurement, but of seeds? and that is the cook's test, from these latter-day monsters that were obtainable from Champion of England, Paradise Marrow, Auvergne, Scimitar, and some others of good repute. It is to be doubted, but it is a matter that could be easily decided one way or the other, not this season, but next, by some gardeners undertaking to sow an equal amount of ground at various times during the season, simultaneously with old and new varieties, and weighing the shelled Peas, gathered from each, carefully tabulating the results. If we ate the pods of Peas as well as their contents, I should stick to Telephone, &c., but as that is not the fashion, let us grow the finest Peas to yield, and not the biggest pods. *Pulse.*

A HEAVY NOBLESSE PEACH.—On Saturday, June 28, I gathered a Noblesse Peach weighing 15½ oz., and measuring 12½ inches in circumference. Have you any record of a heavier or finer fruit? *T. B. Wilson, Alscot Park, Stratford-on-Avon.* [No Noblesse, but Dr. Hogg was grown to a weight of 23¾ oz. by Mr. Goodwin, Maidstone. See *Gardeners' Chronicle*, August 27, 1881. Ed.]

ROSE THE PURITAN.—No doubt there will be many who will have watched with interest the behaviour of this new Rose during the present summer, on account of the disappointment met with last season. According to a limited trial made with it, it would seem to be a variety which is liable to be attacked with mildew. But one season is not enough to establish the character of any plant, as it will often happen that different characteristics will show in the third and fourth year after their introduction, which were not apparent earlier. According to my experience, late pruned plants of Her Majesty do not get so infested with mildew as those which are pruned early—say in March; but whether late pruning will have had any good effect on Puritan in averting mildew has, as yet, not been ascertained. *J. C. Clarke.*

SOCIETIES.

THE NATIONAL ROSE.

July 6.—Saturday, July 6, was one of those typical July days which occur all too seldom in England—warm, without wind, and sunny, but tempered with light fleecy clouds, which made the warmth endurable. For the collections of Roses arranged in the tents placed at the east end of the Crystal Palace, the warmth was more than enough, and by the middle of the afternoon it had begun to tell on all but the more robust blooms.

There were two large tents, forming a T figure, the head of the letter being longer than the stem, In the latter, which was entered from the Palace, were placed chiefly the exhibits of nurserymen, these occupying benches of considerable breadth ranged along the sides, whilst the middle was free for onlookers, or, rather, would have been, had not the police raised needless obstruction. Here were Begonias in flower from Messrs. Laing, of Forest Hill, and Messrs. Cannell, Swanley; these were mostly new varieties, and of vivid colours, which assorted with the Roses badly, as as did also the parti-coloured tent-poles; indeed, the scarlet and white of the latter gave a glare inside the tent, which, with the backwork of Begonias, did much to destroy the effect of the Roses. In the background of the boxes of Rose blooms and dwarf Roses, &c., stood rows of Palms and Chrysanthemums in flower,

lanky things, with white and yellow blooms—and creating unnecessary rivalry between Queens of different seasons.

As a whole, the blooms as regarded size, were inferior to some previous years, and perhaps in substance too, but in colouring there was nothing to be desired. Some Roses, notably light-coloured Teas, were better from the cooler north, and as was proved by the chief prize going to a northern exhibitor; the flowers generally were better.

Nurserymen's Classes.—In the large class for seventy-two distinct single trusses, the 1st prize and trophy was carried off by Messrs. J. Harkness & Sons, Bedale, Yorks, and a very grand lot of blooms they were too—uniform in size, fresh and bright; the positions were, however, closely contested right through this class. Some of the best specimens in list prize list were:—Ulrich Brunner, Mrs. J. Laing, Duc de Rohan, Etienne Levet, Lord F. Cavendish, B. Joubert, Benoit Comte, Heinreich Schultheis, Paul Neron, Her Majesty, Niphetos, Madame Montet, Princess of Wales, Captain Christy, Countess of Rosebery, Annie Wood, and Madame H. Jamain. The 2nd place was accorded to Mr. F. Cant, Colchester, who was not far behind, having very bright blooms of such well-known varieties as Madame de Watteville, Reynolds Hole, Caroline Kuster, Countess of Oxford, Duke of Teck, Ulrich Brunner, Princess of Wales, Star of Waltham, Madame Cusin, Her Majesty, Comtesse de Paris, Baroness Rothschild, G. Baker, and Niphetos. Messrs. R. Mack & Son, Catterick Bridge, Yorks, were a good 3rd, having flowers of fair dimensions: Ulrich Brunner (premier bloom), Horace Vernet, Marie Baumann, Dupuy Jamain, Mr. Baker, Etienne Levet, A. K. Williams, Dr. Andry, Ch. Lefebvre, Madame Rodocanachi, Madame Hausmann, Pride of Waltham, Duchess of Bedford, and Horace Vernet being worthy examples. In the 4th place was Mr. B. R. Cant, Colchester, whose blooms were of a uniform fresh appearance: Her Majesty, Magna Charta, Ulrich Brunner, Madame G. Luizet, Merveille de Lyon, Comtesse de Nadaillac, La Boule d'Or, Ethel Brownlow, and Madame Cusin being the finest.

Messrs. Paul & Son, Old Nurseries, Cheshunt, were the leading exhibitors of forty-eight in triplets, staging a pretty lot, with the colours well-balanced, the blooms being fairly uniform in size and of excellent quality; Madame S. Rodocanachi was specially fine, and other noticeable blooms were Merveille de Lyon, Her Majesty, Duchess de Morny, S. Reynolds Hole, Star of Waltham, Etienne Levet, Pride of Waltham, Madame de Watteville, Alfred Colomb, and M. P. Wilder. Mr. F. Cant was a capital 2nd, following closely with Comtesse d'Oxford, Ulrich Brunner, Baroness de Rothschild, Madame Cusin, Comtesse de Nadaillac, Her Majesty, The Bride, and Marie van Houtte as the chief examples in the stands. Mr. B. R. Cant was a close 3rd, with fine types of Comtesse de Nadaillac, Paul Neron, Ulrich Brunner, The Bride, Comtesse d'Oxford, M. P. Wilder, Baroness Rothschild, Duke of Edinburgh, Marie Finger, Merveille de Lyon; 4th, Messrs. J. Cranston & Co., Hereford, with Madame Cusin, Merveille de Lyon, Alfred Colomb, Ulrich Brunner, Madame Ch. Wood, and Etienne Levet in good condition.

In the three following classes, exhibitors in the two former were not allowed to compete.

Messrs. J. Cooling & Sons, Bath, showed a stand of nice blooms of uniform quality in the class for forty-eight single trusses, distinct, and secured the chief award. The blooms were perhaps a trifle smaller than some of those already mentioned, but the stand, as a whole, was of first-rate quality. The following blooms may be selected:—Baroness Rothschild, A. K. Williams, Pride of Waltham, Merveille de Lyon, Louis Corbie, Star of Waltham, Ulrich Brunner, Duchesse de Morny, François Michelon, The Bride, Her Majesty, Madame Eugène Verdier, Black Prince, and Madame H. Jamain. Messrs. Keynes, Williams, & Co., Salisbury, followed closely, with the H.P. blooms of large size; the best examples in this lot were to be seen in Marie Baumann, Benoit Comte, Marie Finger, Her Majesty, Madame A. Lavallée, Alfred Colomb, Reynolds Hole, and Captain Christy. Messrs. G. & W. Burch, Peterborough, was placed 3rd, Her Majesty being a very attractive bloom in this stand, and others were Ulrich Brunner, Etienne Levet, Madame de Watteville, Souvenir d'Elise Vardon, Fisher Holmes, Reynolds Hole, and Comte Raimbaud; 4th, Messrs. J. Jeffries & Son, Cirencester, Marie Verdier, Silver Queen, Ed. André, Ulrich Brunner, and Star of Waltham being the best, but all were of good quality.

The best twenty-four distinct, single trusses, came from Mr. G. Prince, Oxford; they were clean, and of good substance, with good specimens of A. K. Williams, Madame G. Luizet, Marie Rady, Baron Hausmann, and Madame de Watteville. The 2nd place fell to Mr. J. Walker, Thame, Oxon, who had Her Majesty, A. K. Williams, R. Laxton, Duke of Edinburgh, Duke of Teck, and Madame M. Verdier as his best; Mr. J. Mattock, who also hails from Oxford, was 3rd, with Madame Ch. Wood in a fine example.

In the class for twenty-four in threes, Messrs. G. & W. Burch came to the front with a stand of neat and solid flowers, the best being A. Colomb, Her Majesty, H. Vernet, Ulrich Brunner, Madame Cusin, Comtesse d'Oxford, Innocente Pirola, and La France. Messrs. Keynes, Williams, & Co. came 2nd with creditable flowers—A. Colomb, Her Majesty, Fisher Holmes, Merveille de Lyon, Queen of Queens, the Bride, Captain Christy, and Abel Carrière being some of the best. Messrs. J. Jefferies & Sons, who were 3rd, followed well, having good blooms of Madame de Watteville, Baroness Rothschild, Souvenir d'un Ami, and Her Majesty.

In the *Tea* and *Noisette* division the nurserymen made a fairly good display, but some of the collections were in a sorry condition by the time the show closed, owing to the heat of the tent, and in one or two classes the 4th prize was withheld. The leading class in this section was for twenty-four distinct single trusses; Mr. G. Prince was the successful competitor, with good fresh flowers of average size—Comtesse de Nadaillac, Madame de Watteville, Madame Cusin, David Pradel, Madame A. Jacquier, Princess of Wales, Marie Van Houtte, and Niphetos being worthy of mention. The 2nd prize lot was from Mr. F. Cant, who had larger sized blooms, but a trifle old, and, moreover, the sun pouring on to them soon spoilt their appearance. Devoniensis, Madame Lambard, Adam, and Souvenir d'un Ami were the only ones in condition when we saw them. Mr. B. R. Cant was 3rd, having Maréchal Niel, Jules Finger, Comtesse de Nadaillac, Niphetos, and Madame Cusin, as his leading examples.

Messrs. J. Burrell & Co., Home House Nurseries, Cambridge, was a very good 1st for eighteen distinct Teas, single trusses, with neat and bright specimens of moderate size, Madame Cusin, Caroline Kuster, Niphetos, D. Pradel, Luciola, La Boule d'Or, Adam, and Madame de Watteville, were the best. Messrs. J. Jeffries & Son, were a close 2nd, showing blooms which were not so well finished, Niphetos, Souvenir d'un Ami, Comtesse de Nadaillac, Madame Berard, and Madame de Watteville, being the chief. Mr. J. Mattock, Oxford, was 3rd, having creditable examples of Souvenir d'un Ami, Madame Cusin, Innocente Pirola, and Miss E. Brownlow.

Prizes for the best twelve trusses of any Tea or Noisette (Maréchal Niel excepted), brought a good lot of blooms, and a close competition, in which Mr. Prince led with Comtesse de Nadaillac (premier bloom), fresh, of fine size and good colour. Mr. F. Cant was 2nd with the same variety, and Mr. B. R. Cant followed with Madame de Watteville, both presenting fine flowers.

Eighteen triplets, distinct, were best from Mr. F. Cant, who led with a fine lot, Edith Brownlow, Marie Van Houtte, Madame de Watteville, Catherine Mermet, Madame Cusin, Francisca Kruger, Madame A. Jacquier, and others being noticeable. Mr. G. Prince was a close 2nd with good examples of Madame Cusin, Comtesse de Nadaillac, Marie Van Houtte, Madame de Watteville, J. Ducher, and M. Furtado. The third place fell to Mr. B. P. Cant, who had generally small blooms, the larger and finest being Madame Cusin, Madame de Watteville, Ethel Brunlow, Perle des Jardins, and La Boule d'Or.

Amateurs' Classes.—A collection of forty-eight was the chief class here, Mr. W. J. Grant, Ledbury, leading with a very fine lot of large-sized blooms, bright and clean, in which the following were conspicuous:—Marie Baumann (premier bloom), Etienne Levet, Dupuy Jamain, Merveille de Lyon, Xavier Olibo, Ulrich Brunner, Duke of Wellington, Madame S. Rodocanachi, and Beauty of Waltham. The Rev. J. H. Pemberton, Haveringatte-Bower, Essex, followed well with richly-coloured and fresh blooms, in which the following varieties were well shown:—Madame de Watteville, Ch. Lefebvre, Niphetos, Souvenir d'Elise Vardon, Comtesse d'Oxford, Ulrich Brunner, Victor Hugo, and M. P. Wilder. Mr. S. P. Budd who was 3rd, had smallish blooms but good, Ulrich Brunner, Merveille de Lyon, Madame Cusin, Dupey Jamain, and Duke of Teck, being some other best.

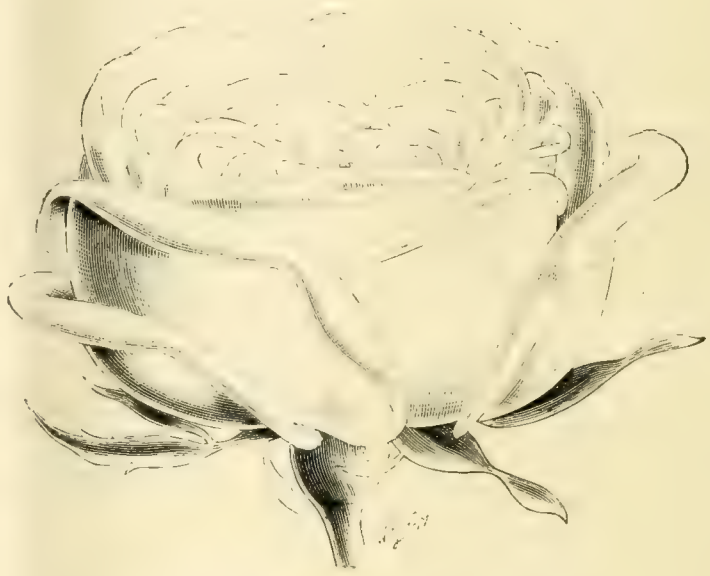


Fig. 10.—Ideal rose: cupped form. (see p. 40.)

Twenty-four distinct varieties in triplets were represented by very large blooms from Mr. W. J. Grant, who was awarded the foremost place in the competition, Ulrich Brunner, La Havre, Madame S. Rodocanachi, Louis van Houtte, and Her Majesty being excellent examples; 2nd, Mr. S. P. Budd, Bath, with smaller and less uniform blooms, the Teas being poor; Etienne Levet, Ulrich Brunner, and Captain Christy were his best blooms.

The next two classes formed a division by themselves, from which competitors in other divisions were excluded. For thirty-six distinct single trusses, Mr. E. B. Lindsell, Hitchin, was to the fore, with very fine even blooms; and he again took 1st in the class for eighteen trebles, without competition, and here again he contributed blooms of good order; this exhibitor's leading blooms were Ulrich Brunner, Her Majesty, La Boule d'Or, Dr. Andry, Prince Arthur, Xavier Olibo, Catherine Mermet, Madame de Watteville, Caroline Kuster (premier bloom), Marie Baumann, Duchesse de Caylus, Merveille de Lyon, and A. K. Williams. Mr. Lindsell was followed in the first-named class (for thirty-six) by Mr. J. Brown, gr. to Mrs. Waterlow, Great Doods, Reigate, who had bright, but decidedly smaller blooms; Star of Waltham, Etoile de Lyon,

Comtesse de Nadaillac, Cheshunt Hybrid, Edward Morren, Her Majesty, and Dupuy Jamain, may be named. 3rd, Mr. R. E. West, Reigate, bright red blooms being very freely used here, the most noteworthy being seen in Duke of Edinburgh, Dr. Andry, and Alfred Colomb.

In the class for twenty-four distinct singles, and again for twelve trebles, distinct, 1st and 2nd prizes fell to Mr. G. Christy, Buckhurst Lodge, Westerham, and to Rev. A. Foster Melliar, Sproughton Rectory, Ipswich, respectively, in each instance; Mr. Christy, had Ulrich Brunner, Merveille de Lyon, Jean Soupert, Marie Rady, Dr. Andry, Captain Christy, and Éclaire, in good form. The 2nd prize lots were also composed of popular varieties, and were shown with plenty of foliage.

Eighteen single trusses.—The blooms in this class were of great merit, and the competition moderately strong. 1st, Rev. L. Garnett, Christleton, Chester. We noticed the following as being some of the best blooms:—Mrs. J. Laing, Beauty of Waltham, Dupuy Jamain, Horace Vernet, Star of Waltham, Prince Arthur, Madame A. Lavalle, Her Majesty, &c.; therefore, as will be noticed, the winning lot consisted of a few new and well tried old varieties. Mr. E. Mawley, Great Berkhamstead, was 2nd, some good blooms of Camille Bernardin, Marie Baumann, Caroline Kuster, Alfred Colomb being noticeable. 3rd, Mr. J. E. Backhouse, Harworth, Grange Croft, Darlington, with some large fresh blooms.

In the twelve single trusses class, 1st, Lieut.-Col. Standish Hore, Rose Hill, St. Asaph, with excellent blooms of Marie Finger, Marie Verdier, C. Darwin, Belle Lyonnaise, &c.; 2nd, Osmond G. Orpen, Hill Side, Colchester; some few fine blooms were noted—amongst them, A. Colomb, Captain Christy, Marie Baumann.

Nine distinct single blooms.—1st, Mr. Le E. Times, Hitchin.

Six distinct, single blooms.—1st, Mr. Ed. Horne, Park House, Reigate.

Six distinct, in trusses of three.—1st, Mr. J. Mallender, gr. to Miss Mellish, Hadsock Priory, Worksop.

Turning now to the amateurs' Teas and Noisettes, we find them generally of high quality. The best eighteen distinct singles, for which cash and a Silver Cup was offered, were from Mr. Grant, who had neat and bright blooms of fair size, Comtesse de Nadaillac, Madame Cusin, Jean Ducher, Madame Margottin, and Souvenir de Thérèse Levet being the finest. The Rev. F. R. Burnside, Birch Vicarage, Hereford, was a close 2nd, with medium-sized bright flowers, having as his best Jean Ducher, Comtesse de Nadaillac, Rubens, Catherine Mermet, Etoile de Lyon, Innocente Pirola, and Souvenir de P. Neron.

The leading twelve triplets were those of Mr. Lindsell, who showed well, Madame Cusin, Niphetos (large), La Boule d'Or, and Jean Ducher; Mr. Osmond G. Orpen, Colchester, was 2nd, with neat and bright examples, including Marie Van Houtte, Catherine Mermet, and Etoile de Lyon.

The Rev. L. Garnet, Chrisleton Rectory, Chester, led for nine Teas and Noisettes, having Comtesse de Nadaillac, Madame Cusin, and Perle des Jardins good. 2nd, Miss F. Baker, Holmfels, Reigate, with a good bloom of Souvenir d'un Ami.

In the minor class for six, Lieutenant-Colonel F. Standish Hore, Rose Hill, St. Asaph, showed a very bright, highly creditable lot, with Madame Cusin in good style.

For twelve triplets, the 1st place was taken by Mr. W. J. Grant, with a really fine lot—Madame Cusin, Niphetos, Anna Ollivier, J. Ducher, and Comtesse de Nadaillac being the strongest examples. The 2nd lot, from the Rev. J. H. Pemberton, were not so even. Caroline Kuster, Souvenir d'un Ami, and Catherine Mermet were some of his best. Neat and small flowers from the Rev. F. R. Burnside were 3rd, the most popular varieties being included, and the last named exhibitor led in a large competition for six trusses of any Tea or Noisette, showing excellent specimens of Comtesse de Nadaillac.



Fig. 11.—Ideal Rose: Globular Form. (See p. 40.)

Extra classes, of which there were four, consisted of quite small exhibits, viz., six distinct single trusses, by amateurs who had not won a prize at an exhibition of the National Rose Society.—1st, Mr. Whittle, 56, Avenue Road, Belgrade. Leicester, who showed fairly good blooms of La France, Captain Christy, Louise Van Houtte, Her Majesty, and Françoise Michelon; the 2nd was awarded to Mr. C. J. Grahame, Coombe Road, Croydon.

For Roses grown within eight miles of Charing Cross.—1st, Mr. J. Bateman, 72, Twisden Road, N.W., a nice lot of blooms of popular show Roses; 2nd, Mr. Otto Frederici, Oncot, Muswell Hill, N., medium-sized blooms; 3rd, Mr. W. Northover, 20, Queen's Road, Wimbledon, small blooms.

Six new Roses, distinct, brought well-known Rose fanciers to the fore. 1st, Rev. J. H. Pemberton, with Her Majesty, Earl Dufferin, Lady H. Stewart, Ethel Brownlow, Vicomtesse Folkestone, and Sir Rowland Hill; 2nd, T. W. Girdlestone, Esq., Sunningdale, with Scipion Cochet, a very dark bloom; M. Cæsar Brunier, like La France; Lady Alice, Duchess of Albany, and Madame Hoste. Rev. A. Foster Melliar took 3rd, Grand Mogul, Mrs. J. Laing, and Puritan being amongst the varieties shown by him. Four competed.

Six single trusses of any H.P. brought ten competitors, the veteran showman, Rev. J. H. Pemberton, as in the previous class, being 1st; his Earl Dufferin was a well-grown fine bloom. Mr. Geo. Christy, Buckhurst Lodge, Westerham, was 2nd, with fine Marie Baumann.

Open Classes.—Except in the three classes for garden Roses, species, &c., the exhibits in the classes were of small numbers, none exceeding twelve trusses of three flowers, or twelve single flowers. Taking them *seriatim*—twelve single trusses of any yellow Rose excepting Maréchal Niel, there were four entries, and none was so good as to get a 1st prize; the 2nd prize fell to Mr. F. Cant, Colchester, with Comtesse de Nadaillac, fresh and good, with more pinkiness in them than was visible in the 3rd prize lot of Mr. G. Prince, 14, Market Street, Oxford.

The best twelve of any white Rose, excepting Niphetos, was shown by Messrs. Harkness & Sons, Bedale, a beautiful stand of Merveille de Lyon. Of this variety there were no less than nine stands in this competition, and the total number of entries were fourteen; 3rd, Mr. B. R. Cant, with The Bride, small blooms, or rather buds.

Twelve of any crimson Rose other than Marie Baumann and A. K. Williams.—This competition brought seven competitors, the 1st prize falling to Messrs. Cooling & Sons, Bath, with Alf. Colomb—a splendid stand, with only one weak flower in it. Messrs. J. Cranston & Co., King's Acre, Hereford, was placed 2nd, with A. Colomb—a very nice lot; and Ulrich Brunner of Messrs. Harkness & Sons took the 3rd. This was a fine and even lot of blooms, with scarcely a weak bloom.

Twelve velvety crimson Roses, excluding Prince Camille de Rohan, brought Messrs. Paul & Son, Old Nurseries, Cheshunt, to the front, with that good but not very large variety—Reynolds Hole; Messrs. Keynes, Williams & Co., Salisbury, took the 2nd place, with the same variety. The blooms in the last-named exhibit were smaller, and some spoilt with double centres. Mr. J. Grant, Ledbury, was 3rd, and would have been 2nd probably, but for two exceedingly weak blooms.

The next class, for twelve blooms of Maréchal Niel, lacked entries.

In the next, twelve trusses of Marie Baumann, there were five entries. The 1st fell to Mr. Mount, Exotic Rose Nursery, Canterbury, for a stand of blooms of fine substance, large, and typical of the variety, and just a little past their best; 2nd, Messrs. Paul & Son, Cheshunt, with blooms of the finest colour, but not correspondingly good in other points; 3rd, Messrs. G. Bunyard & Co., Maidstone, with medium-sized blooms, showing of a more decided purplish-mauve than others observed.

Twelve blooms of Lady Mary Fitzwilliam.—1st, Messrs. J. Cocker & Sons, Aberdeen, N.B., with flowers thick of petal, but, like all the other stands of the variety, of irregular size and of different ages; 2nd, Mr. B. R. Cant, with flowers having a deeper tint, but less substance than the preceding; 3rd, Mr. F. Cant, with small flowers. It may be remarked that the season for this variety is now past.

Twelve blooms of A. K. Williams.—1st, Messrs. Paul & Son, Cheshunt, nice, symmetrical, fresh-looking blooms; 2nd, Mr. B. R. Cant. Two lots only.

Twelve blooms of Niphetos.—This was one of the strong classes, the entries numbering ten. Here Mr. F. Cant took the 1st prize with well-developed blooms, very even in size, but rather thin in the petal; Mr. G. Prince took 2nd, and Messrs. Paul & Son, Cheshunt, 3rd, both nice stands.

Twelve blooms of that grand Rose, Her Majesty.—Here Messrs. Paul & Son, Cheshunt, were placed 1st, hard run by Mr. W. J. Grant, who secured the 2nd prize, with blooms of medium size and good substance. It was substance only which decided the competition in Messrs. Paul's favour. Her Majesty was certainly one of the finest Roses, if not the finest, in the show. In the any Rose competition, Mr. F. Cant was 1st with Madame de Watteville; 2nd, Mr. W. J. Grant with Ulrich Brunner, very large, fresh, and no weak ones; 3rd, Mr. G. Prince, with Madame de Nadaillac. Six entries.

Twelve blooms of any new Rose excepting Her Majesty: 1st, Messrs. J. Cocker & Sons, with Lady Alice, splendid blooms for size and substance. That small bouquet rose, The Bride, was shown by Mr. B. R. Cant, and secured for him the 2nd prize; 3rd, Messrs. Paul & Son, Cheshunt, for Queen of Autumn, a medium-sized crimson flower. Five entries.

Twelve new Roses, distinct, single trusses: 1st, Mr. F. Cant, with Viscountess Folkestone, M. Mat Baron, Her Majesty, Grand Mogul, The Bride, Primrose Dame, Miss Ethel Burnside, Duchess of Leeds, Silver Queen, and Earl Dufferin. Space does not allow us in this place to descant on their merits, but

which will be noticed shortly. Messrs. Paul & Son, Cheshunt, took 2nd place with Madame Marie Treyve, a nice bright crimson H.P.; Madame Josef Desbois, a flesh pink, Tea-scented variety; Madame Selves, crimson and rose, &c.

The finest new Rose was Souvenir de S. A. Prince, described recently in our columns, and shown by Mr. G. Prince, who was awarded the Society's Gold Medal.

A collection of garden Roses, excluding all H.P.s, and all T. and N. mentioned in the National Rose Society catalogue of exhibition Roses, brought ten competitors, and amongst them were exhibited most of the old-fashioned varieties. The 1st prize fell to Messrs. Paul & Son, Cheshunt, and the 2nd to Messrs. J. Cranston & Co.

Mr. G. Prince was 1st in the class for twelve Moss and Provence Roses, and Messrs. Paul & Son, 2nd; with Mr. House, Peterborough, 3rd.

There was nothing very new, but many of those pretty varieties were observed in the various boxes, that are all too rare in our gardens. We mention White Provence, Vivid, Saltet, Blanch Moreau, Nuits d'Young, J. Veitch, Baron de Wassenaer.

The competition in button-hole Roses was not severe, but it brought many varieties into view that are not often seen. A few of these we give below, viz.:—Homer, Souvenir de P. Neron, W. A. Richardson, M. Capucine, Niphetos, Marie Van Houtte, W. F. Bennett, dark crimson; Innocente Pirola, Comtesse de Nadaillac, Eugéne Fürst, David Pradel, Bouquet d'Or, and Souvenir de Thérèse Levet.

The prizes fell to Mr. J. Mattock, of New Headington, Oxford; Messrs. G. Bunyard & Co., and G. Cooling & Son, in the order of their names.

Baskets of Teas and Noisettes.—Mrs. Mawley, the wife of the Society's Secretary, took 1st prize for the most beautifully arranged basket of Roses; the 2nd being taken by Miss Agnes Bloxam, Eltham.

The premier blooms, for which the Society's Silver Medals were awarded, were as follows:—

Nurserymen.—H.P., Ulrich Brunner, from R. Mack & Son; Teas, Comtesse de Nadaillac, from Mr. G. Prince.

Amateurs. — H.P., Marie Baumann, from Mr. Grant; Teas, Caroline Kuster, from Mr. Lindsell.

Special prizes were offered by Messrs. J. Carter & Co., 237 and 238, High Holborn, London, for a dish of twenty pods of their Peas Anticipation, Telephone, and Stratagem; and for the best fruit of Carter's Blenheim Orange Melon.

In the Peas Competition, 1st, Mr. J. Coombs, gr., Sheen House, Mortlake; 2nd, Mr. A. Gibson, gr., Halsted Place, Kent; 3rd, Mr. C. J. Waite, gr., Glenhurst, Esher; the last-named exhibitor being also 1st for the Melon, with Mr. Chettleburgh, gr., Worstead House, Norwich, 2nd.

Special prizes were offered by Messrs. Sutton & Sons, Reading, for two dishes of twenty-four pods each of Peas from seed supplied by them. 1st, Mr. C. J. Waite; 2nd, Mr. T. A. Beckett, Cole Hatch Farm, Amersham; 3rd, Mr. A. Gibson.

Messrs. Sutton & Sons' prizes for a fruit of Hero of Lockynge Melon were secured by, 1st, Mr. Chettleburgh and Mr. C. J. Waite—fine-looking fruits in both instances.

ROYAL HORTICULTURAL.

July 9.—The meetings of the committees of this Society were held in the gardens at Chiswick, last Tuesday, when there was a good attendance of exhibitors and committeemen. At this season of the year there is always a falling off, and as the local horticultural society held its show in the gardens on the same day, visitors were also numerous.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. W. Goldring, S. Hibberd, J. Walker, H. Herbst, Ch. Noble, H. Turner, L. Castle, B. Wynne, J. O'Brien, T. Baines, J. Dominy, J. Douglas, J. Fraser, W. Holmes, F. Ross, and Dr. M. T. Masters.

Mr. J. Walker, Thame, Oxon, sent a collection of Sweet Williams in a variety of colours, mostly light varieties, and all showing very pleasing combinations. Everlasting Peas, in which were a good red and also a good white, as well as a dozen fine blooms of Zinnias in a variety of colours, also came from him.

Mr. C. Turner, Royal Nurseries, Slough, contributed twenty-four Carnation blooms of high quality, including Dorothy, rose-flake, and Dorothy, yellow ground; Purple Emperor, Mrs. Reynolds Hole, Harrison Weir, Amber Almira, and Sarah Payne. Other exhibitors of Carnations were Mr. J. Douglas, Great Gearies, Ilford, who sent Felicity, white with flakes of pink and purple carmine; and Messrs. Hooper & Co., Limited, who had The Shah, deep bright red self, and Princess Louise, yellow with brown-red flakes at the tops of the petals.

A fine double white Begonia with a number of flowers was sent by H. Little, Esq., The Barons, Twickenham (gr., Mr. S. Watts), but it received no award.

One of the most attractive objects shown was a group of plants in 48's of a new Capsicum, Coral Red, from Mr. S. Mortimer, Farnham Nursery, Surrey. It is most decorative, bearing conical bright red fruits, about 1 inch long, in profusion, and, moreover, carries them upright.

Calceolarias of a medium quality were sent by Mr. A. R. Brown, Handsworth, Birmingham; and from M. Lemoine Nancy were a few Pelargoniums, Ivy-leaved and zonal. Berthelot, rich rose; and a large double flower was a good variety of the former class; and of the zonals Souvenir de Mirand, pale scarlet, with whitish upper petals, may be selected. Others were bearing fine trusses of bloom, but were not of striking appearance.

Mr. W. Gordon, Twickenham, sent a few cut blooms of Iris Kaempferi varieties, and also a handsome variety of Lilium auratum, white with a lemon yellow mid-rib to each segment.

A very fine and elegant Japanese Iris came from Mr. Ross, gr. to Sir G. Macleay, Pendell Court Gardens, Bletchingley, who, we believe, has imported a number of forms direct in this, which was certificated as White Banner, the falls are 5 inches by 4 inches, and the whole flower white with a suspicion of blue on the falls, which lends a very pleasing effect, it is one of the largest Irises we have seen.

Messrs. Wm. Paul & Son, Waltham Cross, N., sent a few cut blooms of Roses, bright, and of good substance, the best being Spenser, represented by large specimens—Marchioness of Lorne, Baroness Rothschild, and the new Corinna.

A collection of cut blooms of hardy herbaceous plants came from Mr. T. S. Ware, Hale Farm Nurseries, Tottenham; Liliums formed the major portion, and Pentstemons, Eryngiums, Gaillardias, &c., were plentiful; Lilium pardalinum luteum, indian-yellow, with brown spots; and an ivory-white double Carnation, named Mrs. S. Watts, were good objects.

Cut flowers of Sweet Peas from Mr. Eckford, Boreaton Park, were, as usual, very pleasing, the individual blooms being of fine size; Purple Prince is a purple-red variety; Empress of India, white, with rose standard; Mrs. Gladstone, pale pink; Miss Hunt, pale carmine-rose; and Ignea, deep ditto, were the most noteworthy.

From Messrs. J. Veitch & Sons, Chelsea, S.W., came a small collection of cut specimens of shrubs; Genista capitatus was represented by flowering shoots, as was Hypericum coris, and the Pea-flowered Notospartium Carmichaelæ, the pink striated flowers of which are very elegant. Other specimens were Cupressus nutkaensis, with white tips to the shoots; C. Goveniana, with very minute foliage; and Retinospora filifera aurea, the gold variegated tips to the shoots giving a pleasing effect; Rhodanthe maculata fl.-pl., deep rose, and a white form of the same, as well as single and double forms of Campanula calycanthema, with fine large flowers, were also shown.

From the collections of annuals which are this year being grown in the Society's gardens, there was a selection of cut flowers, including a variety of Sweet Peas and Poppies, and of the others Candytufts, Clarkias, &c., were well represented. Linaria reticulata aureo purpurea is very pretty, the lip of the flower being bright yellow, and contrasting well with the purple-brown hues prevailing elsewhere. Lavatera trimestris, rose and a white form, were also noticeable, as well as Calliopsis coronaria and C. Drummondi, Lupins, &c.

Orchid Committee.

Present: Dr. M. T. Masters, in the chair; and Messrs. T. Baines, J. Douglas, L. Castle, J. Dominy, H. J. Veitch, and J. O'Brien.

There were only a few exhibits here to occupy the small committee. Mr. Charlesworth, Heaton Bradford, contributed cut spikes of Oncidium crispum grandiflorum, laden with large-sized flowers; Cattleya Mendelii, with a fine coloured lip, and the rest of the flower faintly tinted; and a good piece of C. gigas Sanderiana.

Mr. Whillans, gr. to the Duke of Marlborough, sent a variety of Cattleya Mendelii, white, with pale traces of pink on the sepals, petals pure white, and the lip also white with lemon-yellow in the throat.

A small group containing some good quality plants arranged with Adiantum, was shown by F. G Tautz, Esq. (gr., Mr. Cowley), Shepherd's Bush, Cypripedium Stonei, Odontoglossum Harryanum, Phaius Humbloti, Lælia callistoglossa, and Miltonia vexillaria superba, small flowers with a very dark base to the lip, on the side of which is a zone of white, the rest of the lip and other parts of the flower being rosy lilac; and a curious little object, Physosiphon Loddigesii, with a loose spike about 6 inches long, bearing minute flowers, the sepals form a tube which is green, and spread into three equal segments coloured red.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. J. Wright, W. Wildsmith, W. Bates, W. Denning, J. Smith, G. Wythes, W. Warren, and P. Crowley.

Exhibits before this Committee were more numerous than usual. Mr. Goodacre, Elvaston Gardens, Derby, showed fruits of a new seedling Melon named Countess (American Musk × Cashmere), the fruits are large, white flesh, very tender, and sweet, and the skin thin and of a pale yellow colour. It is moreover a prolific bearer, and was thought very well of.

Mr. C. Turner had fruits of a yellow Tomato, a sport from Perfection, which it resembles; referred for trial in the gardens.

Excellent, luscious fruits of Cherries were sent by Messrs. T. Rivers & Son, Sawbridgeworth, one named Olivet, of much the same colour as the Morello, is a fine flavoured fruit for culinary purposes.

The white Grape, a seedling from Monukka, called Mrs. Eyre, was shown by Mr. C. Ross, Welford Park Gardens, Newbery.

Messrs. J. Veitch & Sons sent specimens of Cabbage Lettuce, La Grosse Paresseuse was certificated as a good lasting sort, which does not bolt. It was stated by the exhibitors to be the longest laster in a collection of fifty-eight sorts.

Mr. Allen, Gunton Park Gardens, Norwich, sent fruits of Strawberries of fine size and good general appearance. There were specimens of Waterloo, Dr. Hogg, Amateur, Unser Fritz, Crimson Queen, British Queen, Countess, Loxford Hall, and John Rowell. Several seedlings were also shown.

From the Society's collections there were: specimens of Chicory Asparagus (certificated last year), which is not of very handsome appearance; fruits of a seedling Strawberry (F. lucida × The Hautbois), with numerous moderate sized fruits, having a distinct pine flavour, which was very pleasant. Fruits of Waterloo were also shown. Tomatos, of which a large collection is being grown at Chiswick again this year, were represented by Advancer, Tennis Ball, and Horsford's Prelude, all of which are prolific varieties and handsome.

The committee inspected the trial grounds and awarded certificates to Raspberry Hornet (Rivers), an old variety of large size, and worthy of cultivation, and to Pea Consummate from Mr. Eckford.

Awards were made as follows:—

BY THE FLORAL COMMITTEE.

First-class Certificates.

Retinospora filifera aurea, from Messrs. J. Veitch & Sons (unanimously).

Rhodanthe maculata fl.-pl. and R. alba, from Messrs. Veitch & Sons (9 votes to 1).

Lilium pardalinum var. lutea, from Mr. T. S. Ware (4 votes to 3).

Iris White Banner, from Mr. Ross (unanimously).

Awards of Merit.

Campanula calycanthema, double and single, from Messrs. J. Veitch & Sons (9 votes to 1).

Carnation Mrs. Frank Watts, from Mr. T. S. Ware (unanimously).

Capsicum Coral Red, from Mr. Mortimer (unanimously).

Sweet William strains, Mr. J. Walker (7 for).

BY THE ORCHID COMMITTEE.

First-class Certificates.

Oncidium crispum var. grandiflora, from Mr. Charlesworth (4 votes to 1).

Cattleya Mendelii Duchess of Marlborough, from Mr. Whillans (unanimously).

Botanical Certificate.

Physosiphon Loddigesii, from F. G. Tautz, Esq., (unanimous).

BY THE FRUIT COMMITTEE.

First-class Certificates.

Melon Countess, from Mr. Goodacre.

Lettuce La Grosse Paresseuse, from Messrs. J. Veitch & Sons.

Raspberry Hornet, from Messrs. T. Rivers & Sons.

Pea Consummate, from Mr. Eckford.

ROYAL CALEDONIAN SUMMER SHOW.

July 10 and 11.—The summer show of the premier Scottish Society was opened on Wednesday, July 10, in the Waverly Market, Edinburgh. For this season the entries were numerous, over 900 having been received in all the classes; but it is an undoubted fact all the same, that from one cause or another, the spacious Market hall had not the same filled and finished aspect which it usually presents on a Caledonian show day. The weather, too, was most unpropitious. Farmers, nurserymen, and gardeners, all stand very much in want of rain for their fields and gardens, on which the drought was beginning to tell heavily; but the Committee of Management of the Show would not have been displeased if the grateful rain had not commenced to fall until the evening of the second day of the show.

The prize money offered for competition amounted to £223, which was very well distributed over the schedule.

Roses.—On this occasion Roses, of course, formed the chief feature of interest, and the entries, both in the nurseryman and gardener classes were numerous, there having been no fewer than 800 entries in all. In the chief competitions there was a good muster of distinguished Rose-growers from the North and South of Scotland, and from the North of Ireland, and the Roses, as a rule, were shown in very good condition. The season, however, though one in which brilliant sunshine has prevailed, has not been too favourable for Rose culture. The heat has brought on the blooms too soon, and while giving them colour has robbed them somewhat of substance, this being notably the case with many H.P.'s, which were distinctly undersized.

For the best forty-eight, Mr. Hugh Dickson, Belmont, Belfast, carried off the blue ribbon. From this famous nursery better Roses perhaps have been seen before; all the same, the stand was a very even one, and could not be beaten. Among other notable Roses in it we observed Captain Christy, Reynolds Hole, and the Baroness Rothschild. Messrs. Cocker & Son, Aberdeen, were an excellent 2nd. In the north of Scotland where they hail from, Roses are hardly come into full maturity yet, but their stand was a very attractive one, colour and quality being studied. Among the cream of a very nice lot may be mentioned Merveille de Lyon, Gabriel Luizet, Marie Verdier, Lady Mary Fitzwilliam. This firm, though they have only come to the front in recent years as Rose growers, deserve every commendation for their enterprise—they being the only Scotch growers that exhibited at the Crystal Palace last week, and with much success. Another firm that have been steadily making their way is that of Messrs. D. & W. Croll, Dundee, which, though only placed 3rd in this competition, had an extraordinary run of luck with Roses under other headings of the schedule. In this stand they were strong in Teas—a pre-eminence which did them every credit. A second Irish competitor, not often seen at Edinburgh—Messrs. Samuel McGredy & Son, Portadown—exhibited a very fair forty-eight, but failed to get into the prize list.

For the best twenty-four, Messrs. Cocker & Son had a decided victory. There were fewer weak blooms here than in any of the forty-eight cases. Her Majesty, Alphonse Soupert, and Mrs. John Laing, were the leading Roses. The 2nd honour went to Messrs. D. & W. Croll, in whose collection Marie Baumann and A. K. Williams were the gems. 3rd place was accorded to Messrs. Smith & Sons, Stranraer, a firm that has done much to stimulate Rose culture in the South of Scotland.

For twenty-four Tea Roses, Messrs. D. & W. Croll had 1st honours, and Messrs. Cocker & Sons 2nd. The gems of the former collection were Madame de Watteville, Madame Cusin, Niphetos, and Rubens; and of the latter, Grace Darling, Marie van Houtte, Edith Gifford, and Vicountess Folkestone.

Messrs. D. & W. Croll staged a superb lot in the competition for twelve trusses of Roses, the group being all Teas; and in the same competition, Mr. Hugh Dickson came 2nd, with trusses of H.P.'s; while Messrs. McGredy & Son were 3rd. A special award was given in this class to Messrs. Cocker & Sons, who had a charming lot, very daintily displayed.

In the competition for twelve Roses sent out since 1887, Messrs. Thomas Smith & Sons had an easy 1st. The stand included Caroline d'Arden, a superb new Rose, the result of a cross between A. K. Williams and Marie Baumann; Lady Alice, with creamy-white flowers; Louis Lille, Madame Richeau, Madame F. Heine, and Gloire de Margottin, the last-mentioned a dazzling red, which promises to be as free flowering and useful as the well-known General Jacqueminot. Mr. Belmont's stand was placed 2nd, and in it we observed Louis Donadine, Mr. Rowland Hill, and Caroline d'Arden.

In the gardeners and amateurs class, Mr. Alexander Kirk, gr. to Mr. J. Thomson Paton, Norwood, also had an easy win for the best thirty-six Roses. They were on the whole a very nice lot; among conspicuous blooms being Etienne Levet and General Jacqueminot. Mr. Kirk had also 1st honours awarded to him for the best twenty-four. The Rev. W. Thorndin, Kinglurrie Manse, Fife, had a very nice lot of six Roses, which got him 1st ticket. Some very nice lots were staged in the open competitions. Here Messrs. Smith & Son were to the front for the best new twelve Roses—a specialty being Silver Queen, which might be best described as a white Victor Verdier. The Belmont eight Roses were placed 2nd. For the best yellow Roses Mr. Hugh Dickson, Belmont, was 1st, with Gloire de Dijon, but the stand was only a moderate lot.

The best lot of white Roses was a stand of Merveille de Lyon, which was shown by Messrs. McGredy & Son, Portadown; alike in colour and size, they left little to be desired.

Messrs. D. & W. Croll were placed 1st for the best stand of crimson Roses (Mr. E. Y. Teas); Mr. David Robertson, Helensburgh, was 2nd, with Marie Baumann.

Mr. Hugh Dickson got the first ticket for any dark Rose, with La Rosière; Messrs. McGredy & Son being 2nd, with Horace Vernet.

The award for the best twelve single blooms of any Rose went to Messrs. D. & W. Croll, with Lady Fitzwilliam; Messrs. Cocker & Sons showing in this competition a very fine lot of Mrs. John Laing, which, however, did not get placed.

Messrs. McGredy & Son were 1st in the competition for Merveille de Lyon—a lot shown in grand order.

Miscellaneous.—To the nurserymen of Edinburgh the show was, as usual, indebted for many attractive features—not the least important of which were the fine tables of plants shown by Messrs. Laird & Sons, Ireland & Thomson, Dicksons & Co., and Thomas Methven & Sons. The two former firms competed for the best tables of plants, 40 by 10 feet, for effect, and it was really a toss up between them. Ultimately the 1st prize was given to Messrs. Laird, whose arrangement was considered the better of the two. Ireland & Thomson, whose table was laden with valuable plants, came 2nd. Messrs. Laird made admirable use for decorative purposes of the graceful Eulalia japonica, and the firm had also a fine display of Crotons, including Neumanii, Warrenii, and Flambeau, a good specimen of Alocasia Sanderiana, and some fine Orchids and Heaths. The newer plants on Ireland & Thomson's table were:—a new bright crimson Gloxinia (Flambeau), new Ivy-leaved Pelargoniums Flourens and Cuvier, Amasonia punicea, with bright stem and flowers; Leea amabilis, with graceful drooping green leaves of soft texture, with white vein; Ataccia cristata, and a number of the finer Crotons and Dracænas. Messrs. Methven's table was also embellished with a fine selection of Crotons and Dracænas, among which appeared to great advantage the chaste and beautiful Bermuda Lily.

Messrs. Dickson & Co., showed a fine collection of herbaceous plants, among which appeared Tropæolium polyphyllum, with its rich golden flowers. They had also a capital lot of Pansies, French Marigolds, and white Pinks (Mrs. William Welsh), and a couple of majestic tree Ferns.

Messrs. James Dickson & Sons, exhibited a choice collection of twelve Coniters which included fine specimens of Retinospora obtusa nana aurea, Cedrus atlantica glauca, Cupressus Lawsoniana lutea, and Retinospora plumosa aurea.

In the competition for the best table of plants open to gardeners and amateurs, Mr. R. Grossart, of Oswald Road, had to lower his colours to a new exhibitor—Mr. R. B. White, Arddarroch, Garelochhead, the chief feature on whose table was a fine collection of Orchids. The same competitors ran neck and neck in the competition for Orchids, but in this case the decision was reversed. Mr. White was also 1st for the best twelve trusses of cut flowers of stove and greenhouse plants. The first four Orchids in Mr. Grossart's collection were Cattleya Imperialis, Lælia purpurata, Vanda suavis, and Cypripedium Stonei.

Messrs. Munro & Ferguson put up an interesting table of plants in competition for the Society's prize for "a collection of alpine and herbaceous plants in flower, not less than fifty species," consisting of Liliums, Campanulas, Gentians, Triteleia laxa, Sedums, Saxifragas, &c., which was much admired and took 1st prize; and Mr. Gordon of Conelly Park, Falkirk, who tabled only the fifty species stipulated for by the schedule, was placed 2nd. In his fifty we noted well-bloomed specimens of Silene pusilla, Erythræa diffusa, and Edrianthus dalmaticus. Among other nurserymen's exhibits were a fine lot of perennial Delphiniums from Mr. Irwine, of Jedburgh, the best of which—all were very superior—were the following three:—Wm. Douglas, enormous spikes of very large blooms, azure suffused with red; Miss Veitch, violet, with broad red margin to petals; Provost Boyd, violet shaded red, semi-double, with white central petals.

Fruit.—The fruit was exceptionally good for the season, though we might have expected that the competition for Strawberries would have been keener. Mr. McHattie, gr. to the Marquis of Lothian, Newbattle, and Mr. T. Boyd, Callander Park, Falkirk, had the chief prizes for Grapes. Mr. McInnde, Hutton Hall, Guisborough, was 1st for a collection of eight dishes of fruit; and the leading prize for Strawberries went to Mr. Malcolm McIntyre, The Glen, with dishes of President, Keen's Seedling, Laxton's Noble, and The Captain.

Among other noteworthy exhibits were Mr. R. Grossart's prize lot of stove and greenhouse plants; and the same gentleman's exotic Ferns, which were shown in a delightfully fresh condition; Mr. Paterson, Millbank, excelled in Heaths; Fuchsias also were in good repute, Mr. D. Plenderlein, who was 1st, showing a grandly flowered pot of Lord Beaconsfield. For a new scarlet-fleshed Melon, a First-class Certificate was awarded to Mr. L. Dow, gr. to Sir David Baird, Newbyth, after whom the Melon has been named.

In *Vegetables* there was a very gratifying increase, both in the entries and in the quality of the stuff, although that has always been a well maintained feature in the vegetable exhibits at these shows for many years past. The exceptionally fine spring and early summer which has been experienced in Scotland no doubt has had much to do, not only with the quantity, but the superior quality of vegetable and other outdoors garden products.

Later, the judges and others were entertained at dinner in the Waterloo Hotel, under the presidency of Mr. Ireland, of Messrs. Ireland & Thomson. Mr. Milne (Dickson & Sons) was croupier. Mr. James Syme gave the toast of the "Royal Caledonian Horticultural Society," and mentioned that they were that day celebrating its eightieth anniversary. The Secretary, Mr. Young, responded. "The Health of the Judges," was given by Mr. Methven, and replied to by Mr. George McKinnon, Melville Castle.

CHISWICK HORTICULTURAL.

July 9.—The ninth annual show was held in the gardens of the Royal Horticultural Society, on the same day as the meetings of the Committees referred to in another place. The general tone of the show was not up to that of former years, plants being only of average quality, the groups not so numerous, and showing much sameness.

For a group arranged for effect, Mr. Brown, Richmond, who has led for the two previous years, again was placed 1st, and consequently takes the Challenge Cup as his own property. Liliums, Palms, Crotons, Odontoglossums, and Adiantums were freely used in a light and graceful arrangement. Messrs. W. Fromow & Sons, Chiswick, ran him very closely, but their group was too crowded in the centre; the materials and their arrangement were almost the same as in Mr. Brown's.

The Veitch Memorial trustees offered a Medal for a group from amateurs, and here again the same

style of group was contributed by Mr. A. Wright, gr. to E. H. Watts, Esq., Devonhurst, Chiswick, who was the successful competitor. Hydrangea paniculata, Orchids, and Crotons were good here.

Non-competing groups were sent by Mr. May, gr. to the Marquis of Bute, Chiswick House, who had a very elegant arrangement of miscellaneous plants, in which Coleus and Carnations were good; and Mr. W. Gordon, Twickenham, sent a group of Lilium auratum vars., and Japanese Maples. Messrs. J. Veitch & Son, Chelsea, sent a large collection of cut herbaceous plants, including Iceland Poppies, Shirley Poppies, varieties of single and double Campanula calycanthema, Phloxes, and double Rhodanthe maculata, bright rose; and a white form of the same, which were awarded Certificates by the Royal Horticultural Society.

Mr. W. Rumsey, Joyning's Nursery, Waltham Cross, N., led for twenty-four Roses, with fine and bright blooms of popular varieties; and Mr. Langdon, Ealing, had the best twelve.

York and Lancaster Roses [not true to name, the sort shown being Rosa mundi] were well shown, the 1st place being awarded to Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill, Ealing.

Prizes were offered by F. G. Tautz, Esq., for a collection of Orchids, which brought a good lot from H. Little, Esq., Twickenham, Cattleya Sanderiana, Dendrobium Pierardi, and Lælia purpurata being good plants. Mr. J. C. Cowley, Studley House Gardens, Shepherd's Bush, was 1st and 2nd for cut specimens; and Mr. Little again led for three plants, showing specimen Cypripediums; and other prizes were also taken by him for cut zonal and Ivy-leaved Pelargoniums, and for Begonias. Mr. Wright led for Gloxinias, specimen Fuchsias, Selaginellas, Ferns, and Begonias. Caladiums were best from Mr. Harding, gr. to W. E. Tautz, Esq., Chiswick, in fine specimens.

Mr. W. Bates, gr. to J. T. Nicholson, Esq., Poulett Lodge, Twickenham, had the best stove and greenhouse plants, leading easily with a good Clerodendron Balfourianum and Plumbago capensis; and Mr. J. S. Waite, gr. to the Hon. Colonel Talbot, Glenhurst, Esher, led for hardy Ferns in fair specimens and for cut Gloxinias.

In the fruit and vegetable sections, cottagers contributed largely and very well. For the large collections of fruit, Mr. Bates led with good Queen Pine, Melon, and Grapes; with Mr. Osman, gr. to L. J. Baker, Esq., Chertsey, 2nd, having well grown Grapes. Specimen bunches of black and white Grapes were good from Mr. Baker, who took 1st for each. Messrs. Bates, Wright, Ward, Chadwick, and Palmer were successful in other classes. For vegetables, Mr. Waite swept the board in many classes. Mr. Chadwick had 1st for a collection. Messrs. Waite, Coombe, Stickler, and Palmer took the special prizes offered by Messrs. Sutton and Messrs. Carter. Mr. Waite scoring heavily.

THE SCOTTISH HORTICULTURAL ASSOCIATION.

This Association held its usual monthly meeting in 5, St. Andrew Square, Edinburgh, on the 2nd inst., Mr. Milne, of James Dickson & Sons, Vice-President, in the chair. Mr. Fraser, gr., Arddarroch, read a paper on the genus Cypripedium, and gave an interesting history of the introduction of the various species to cultivation in Britain, along with remarks in passing on the peculiarities of the habitat of each, which served to illustrate their individual requirements from a cultural point of view. The paper concluded with concise and clear remarks on the chief points to be observed in the culture of the various species. On the subject of compost, it was recommended to use only peat fibre of the best quality and live sphagnum in equal proportions for all except C. insigne, which preferred a loamy compost. The paper was illustrated by plants and cut flowers of C. Parishii, C. Veitchii, C. barbatum biflorum, C. ciliare, C. superciliare, C. nævium, C. bitatulum, and others, and also by numerous coloured plates.

Of exhibits, Mr. Lewis H. J. Watson, Falkirk, had a very distinct and pecular form of crested Lastrea filixmas, was bearing the name Watsoni, which received a First-class Certificate. The plant is five years old, occupied a 6-inch flower-pot, and the tallest frond only stands about 6 or 7 inches above the rim of the pot. The fronds have a fine dark green lustrous appearance, elegantly crested at the apex, and every panicle is also crested. It will become a favourite with hardy Fern fanciers when it becomes better known; a consummation, however, which is likely to be deferred for some time, as the plant has hitherto proven to be infertile.

Mr. Rushton, gr., Corstorphine, exhibited a flower of a new double seedling Tuberous Begonia, which was greatly admired, and was also awarded a First-class Certificate. It is a beautiful primrose colour; the flowers are about 3 inches across, very full, compact, and closely resembling a Hollyhock in appearance.

Mr. John Downie, Beech Hill Nursery, exhibited a very superior collection of Delphiniums of the perennial sections.

Mr. Mungo Temple, The Gardens, Carrow House, near Falkirk, exhibited a sample of Black Alicante Grape, cut and bottled in October last, the fine condition of which as regard flavour, and texture or plumpness of berry was favourably commented upon. In a letter from Mr. Temple, read by the Secretary of the Association to the meeting, it was stated that the Grapes had lost nothing in either weight, bloom or flavour since they were cut and placed in the bottles, and certainly the sample before the meeting was fine, and appeared to bear out this statement.

Messrs. Jas. Dickson & Sons exhibited a miscellaneous collection of hardy flowers, including some fine Delphiniums, Pæonies, and Iris. Mr. Henderson, Clermiston, exhibited Chrysanthemum Mrs. Burrell, well-bloomed in a 6-inch pot; and Mrs. Sprague, March Bank, Davidson's Mains, Edinburgh, sent a beautiful plant in flower of Campanula barbata collected by herself, in 1887, on the Chamossaire Mountain, near Bex, Switzerland.

A remarkable fine form of Cattleya Mendelii Whitei was also exhibited by Mr. Fraser, Arddarroch, the parts of the flowers of which were of unusual size even for this fine species, and the lip was unusually deeply coloured about three-parts of its length, and the sepals deeply suffused on the margin with bright rose-purple. It received a First-class Certificate.

TWICKENHAM HORTICULTURAL.

July 3.—A somewhat cloudy but still warm pleasant day greeted the usual summer exhibition of this Society, held in the grounds of Powlett Lodge, close to the town, on the above date. Mr. Bates is the well-known gardener here, the property being now in the possession of J. T. Nicholson, Esq. The show was an excellent one, although there was not that remarkable competition in the open classes for fruit seen last year, due doubtless to varying causes, for fruit seems to be in few cases nearly as usual. Several effective honorary plant groups were staged.

Messrs. Hooper & Co., of Pine-apple Nursery, and formerly of Twickenham, staged a brilliant collection of Caladiums; Mr. W. Gordon, Twickenham, showed a not less effective, but for the most highly perfumed group of his fine Lilies, especially auratums and dwarf deep-coloured forms of Thunbergianum. Messrs. Rulling & Co., also of Twickenham, had a very pretty group of plants. Mr. Henry Little staged a charming lot of Orchids, forming a delightful feature.

Of the usual decorative groups a very charming arrangement was set up by Mr. H. E. Fordham, a local florist, whose taste was of a high order, the entire base being admirably furnished and clearly visible from any point.

In stove and greenhouse plant classes, Mr. Bates, as usual here, did not compete, but had some capital plants in the show.

Mr. Parsons took 1st place in the competition with the best six plants, having a huge tub nearly 3 feet over of Oncidium sphacelatum in full bloom, a big scarlet Anthurium, and a fine Allamanda Schotti. Mr. Munro, gr. to C. D. Paul, Esq., Twickenham, was 2nd, with Clerodendrons Balforianum and fallax, Bougainvillea glabra, &c. Mr. Munro, however, came 1st, with six foliage plants, and also had the best six Fuchsias.

For Begonias, Mr. Little was well 1st, with a dozen well-bloomed plants; he had also the best six zonal Pelargoniums; and was the only exhibitor of six Orchids, having the three fine pans of Cypripediums exhibited at Richmond, Lælia purpurata, Dendrobium Mawsonianum, and Miltonia vexillaria.

Roses were finely represented by a large and very fresh collection from Messrs. Veitch & Sons; and also by a smaller lot from Mr. W. Taylor, of Hampton, who had a back row of Her Majesty in most exquisitely beautiful blooms.

In the class for twenty-four cut Roses, Mr. Warwick, gr. to J. P. Hitchin, Esq., Hampton, was, as usual, invincible; as he was also with twelve blooms, and farther with twelve Gloxinias in bunches.

Mr. Bates showed a lot of the Shirley Poppies, which were greatly admired.

Fruit was moderately represented. In the class for black Grapes, Mr. Thompson, gr. to Messrs. W. & E. Wells, Hounslow, was 1st, with excellent Hamburghs; Mr. Waite, gr. to the Hon. Colonel Talbot, Esher, coming 2nd, with very good Madresfield Court.

Mr. Waite came 1st in the class for whites, with very good Myton Muscats.

Mr. Thompson had the finest Peaches in Violette Hâtive. Mr. J. Goody, the best Strawberries, in very fine Jas. Veitch; Legrosse Sucrée coming 2nd, and President 3rd. Mr. W. Mann, market grower, showed a basket of wonderful Paxtons, and Mr. G. Parker had some superb Presidents and Napiers.

The best Tomato was found in a fine dish of Dedham Favourite, from Mr. Truefit; Mr. Thompson having the 2nd best in the Large Market Red.

Mr. Waite was, as usual, invincible with a collection of ten kinds of vegetables, all of the best, and handsomely arranged.

Mr. J. Filsell, gr. to J. Bowyer, Esq., had the best brace of Cucumbers in Improved Telegraph.

There was a large competition in local and cottagers' classes also. *A. D.*

KETTERING HORTICULTURAL.

July 1.—Kettering always keeps holiday on Feast Monday, which is always the first Monday in July; and for the space of one week this rapidly extending town gives itself up to holiday keeping. It is supposed that this custom, which has continued for many years, dates back to one of the old festivals of the Roman Catholic Church.

The leading open classes were for Roses. In that for forty-eight varieties, Messrs. G. & W. Burch, Rose nurserymen, of Peterborough, were placed 1st, with a very fine lot, fresh, full, and well-coloured, and such varieties as Heinrich Schultheis, Star of Waltham, Duchess of Bedford, Mrs. J. Laing, Duchesse de Vallombrosa, Mrs. Baker, and Alfred Colomb, were particularly fine among the H.P.'s; also The Bride, Catherine Mermet, Innocente Pirola, and Madame de Watteville among the Teas. Mr. Henry Watt, gr. to G. L. Watson, Esq., Rockingham, was 1st with twenty-four varieties. Mr. Watt also had the best twelve Teas and Noisettes. Amateurs and cottagers also exhibited good Roses.

Groups of plants arranged for effect were a good feature, though in every case the plants employed were overcrowded. The best of the largest groups came from W. C. East, Esq., Kettering, variegated foliaged plants in good condition being a leading feature.

Groups were also shown by amateurs. Mr. W. C. East had the best four stove and greenhouse plants. Among them Ipomœa Learii and Swainsonia galegifolia alba, two old-fashioned plants not often seen at flower shows; Fuchsias, Begonias, Gloxinias, double and single zonal Pelargoniums, and Petunias made up the remainder of the flowering plants.

Foliage plants were represented by Ferns, Mr. W. Toseland having the best four in the open, and Mr. W. C. East in the amateurs' class; Mr. J. Bryan being a good 2nd in the latter. Coleus were in the form of nice, well-grown and flowered plants.

The best box of twelve bunches of cut flowers came from Mr. H. Watt; Messrs. W. & J. Brown, nurserymen, Stamford, being a good 2nd.

Bunches of double and single zonal Pelargoniums were remarkably good. Messrs. W. & J. Brown were 1st, with a very fine lot, of high quality.

Bunches of hardy flowers were a good feature also. In the amateurs' division, Mr. J. Loake had some excellent cut blooms of Ivy-leaved Pelargoniums, and a very pretty feature they made.

The cottagers' division was full of interest. The term cottagers is somewhat widely interpreted, and includes the operatives in the shoe trade, and not a few of these are owners of the houses in which they live, and have a small greenhouse. Their window plants were very good; and their cut flowers of hardy plants, also Antirrhinums, Sweet Williams, and Stocks particularly fine.

Fruit was but sparingly represented—the principal, Strawberries, of which some very good fruits of Sir J. Paxton especially, were exhibited.

BOSTON HORTICULTURAL.

July 2.—This, the nineteenth annual show of this Society took place as usual in a spacious field in the heart of the town; and an exhibition of horses, dogs, poultry, &c., is held in connection with it, consequently it has a great interest for the country people, who flock to it in large numbers.

Here, as at Kettering, Roses were the leading feature, the principal class being for twenty-four varieties, three blooms of each. Messrs. Harkness & Son, nurserymen, Bedale, were 1st, with a very fine lot indeed, showing grand substance and richness of colour. Star of Waltham, Madame G. Luizet, Mrs. John Laing, Queen of Queens, Ulrich Brunner, and Auguste Rigotard among the H.P.'s were conspicuously fine; and some excellent blooms of Tea-scented varieties were finely developed. Mr. J. House, nurseryman, Peterborough, was 2nd. Messrs. Harkness & Son, were also 1st with twenty-four varieties, single blooms; Mr. H. Norton, Rose Nursery, Louth, being 2nd. So strong were Messrs. Harkness & Son, that they were also 1st with twelve blooms; Mr. H. Norton being again 2nd.

Mr. T. Dolby, nurseryman, Boston, had the best stand of twelve bunches of cut flowers of stove and greenhouse plants, and he was also 1st with twelve bunches of hardy flowers; Mr. Z. Ingold being 2nd. Mr. T. Dolby also had the best bouquet of Roses; Mr. Z. Ingold being 2nd; indeed, in all the bouquet classes Mr. Dolby took a decided lead. Bouquets, baskets, and stands of wild flowers made a very good feature also; plants both flowering and foliaged were small, and it can be noticed at country, as well as at the London exhibitions, that large plants are not nearly so much grown as they used to be. Some good Selaginellas were shown by Mr. T. D. Garfit. Mr. Dolby had the best six foliaged plants. Mr. T. D. Garfit had the best six Ferns, as well as the best six plants, in or out of flower; among these was a good piece of Justicia carneæ, Dracæna Veitchii, Pandanus Veitchii, &c. Mr. J. Aldred was 2nd with Ferns; and Mr. T. C. Dolby with six plants. Mr. Aldred had the best six Fuchsias, nicely grown and bloomed; Mr. T. D. Garfit being 2nd. The best four Achimenes, six zonal Pelagoniums, and six Begonias also came from Mr. Dolby.

Fruit was somewhat sparingly represented, except in the classes for Strawberries, Currants, Gooseberries, Cherries, &c.

Vegetables were numerous, and on the whole very good; the fine fertile soil round Boston appears to grow these to perfection. Some excellent Potatos were shown by Mr. H. Graves and others. Peas were very fine; such sorts as Duke of Albany, Telephone, Telegraph, Triumph, &c., being finely developed.

Several prizes were awarded to Messrs. C. Wilkinson for a collection of fruit, foreign and English; and Mr. H. Norton for a collection of cut Roses. Mr. John House, of Peterborough, had a box of the yellow William Allan Richardson, which he grows to such perfection at his nursery in Peterborough.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending July 8, is furnished from the Meteorological Office:—

"The *weather* continued fair and dry in all parts of the kingdom until towards the close of the period, when it became unsettled, and rain fell in many places, chiefly, however, in the north and east of Scotland, and the south-west of England. A thunderstorm occurred at Scarborough during the evening of the 7th.

"The *temperature* has been a little below the mean in most of the "Wheat-producing districts," but elsewhere it has not differed materially from the normal. The highest of the maxima were recorded at most stations either on the 5th or 6th, and ranged from 74° in 'England, N.W.,' and the 'Channel Islands,' to 81° in 'England, S.W.,' and 83° in the 'Midland Counties.' The absolute minima, which were (except in some parts of Scotland) generally registered during the early morning of the 8th, were decidedly low for the time of year. At Armagh the sheltered thermometer fell to the abnormally low value of 32°, and an instrument exposed on the grass descended to 27°; while at Edgeworthstown the sheltered thermometer registered 31°, and that on the grass 30°. Over Scotland the lowest readings varied from 36° to 38°, and over England from 37° in the north-west, to 47° in the south. In the Channel Islands the minimum was 55°.

"The *rainfall* has been rather more than the mean in 'Scotland, N.' and the 'Channel Islands,' but less in all other districts. Over Ireland and the greater part of England the fall has been extremely slight.

"*Bright sunshine* has been less prevalent as a whole than it was last week, but shows an increase in Ireland. The percentage of the possible amount of duration ranged from 32 to 50 over England, from 38 to 53 in Scotland, and from 44 to 47 in Ireland; in the 'Channel Islands' the percentage was 61."

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending July 8.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 1, 1889.	Below 42° difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	84	0	+ 210	+ 4	1 +	125	19.5	38	25
2	1 —	99	0	+ 112	+ 5	4 —	97	10.9	38	31
3	1 —	113	0	+ 79	+ 6	4 —	87	10.1	36	29
4	2 —	118	0	+ 41	+ 112	5 —	91	11.1	33	30
5	1 —	125	0	+ 67	+ 60	6 —	85	14.0	36	28
6	1 +	137	0	+ 94	+ 75	2 —	90	11.1	32	29
7	1 +	114	0	+ 136	— 23	6 —	102	18.4	53	33
8	1 —	116	0	+ 101	— 1	6 —	92	13.1	50	32
9	0 av.	130	0	+ 33	+ 88	1 —	90	15.8	36	36
10	0 av.	113	0	+ 82	— 53	6 —	113	16.1	47	28
11	0 av.	121	0	+ 55	— 14	6 —	102	16.4	44	34
12	1 +	138	0	+ 97	— 16	3 +	99	12.9	61	39

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, July 11.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

No alteration. Trade steady. *James Webber, Wholesale Apple Market.*

Vegetables.—Average Retail Prices.

	s. d.	s. d.
Asparagus, English, per 100	8 0	—
— French, bundle	2 0	8 0
Beans, Jersey French, per lb.	2 6	—
Beet, red, per dozen	1 0	2 0
Carrots, per bunch	0 6	—
Cauliflowers, each	0 6	—
Celery, per bundle	1 6	2 0
Cucumbers, each	0 6	0 9
Endive, per dozen	2 6	—
Green Mint, bunch	0 4	—
Herbs, per bunch	0 4	—
Leeks, per bunch	0 3	—
Lettuce, per dozen	1 6	—
Mushrooms, punnet	1 6	—
Mustard and Cress, punnet	0 4	—
Onions, per bunch	0 5	—
Parsley, per lb.	0 6	—
Peas, French, per qt.	2 6	—
Potatos, new Jsy., lb.	0 3	—
Rhubarb, bundle	0 6	—
Shallots, per lb.	0 6	—
Spinach, per bushel	2 6	—
Tomatos, per lb.	2 0	—
Turnips, per bunch, new	1 0	—

Potatos.—Supply of new Potatos not quite so heavy, and prices for sound samples rule firm at 5*s.* 6*d.* to 6*s.* 6*d.* for Kidneys and Flukes; French, 5*s.*; Rounds 4*s.* to 5*s.* 6*d.* Home grown selling at 7*s.* to 9*s.* Kidneys, and 5*s.* to 7*s.* for Beauties. Supplies short. *J. B. Thomas.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.
Cherries, ½-sieve	5 0	8 0
Currants, Black, ½-sieve	4 0	6 0
— Red, ½-sieve	3 6	4 0
Gooseberries, ½-sieve	3 0	3 6
Grapes, per lb.	1 0	3 0
Lemons, per case	12 0	21 0
Peaches, per doz.	6 0	15 0
Pine-apples, Eng., lb.	1 6	2 0
— St. Michael, each	2 0	6 0
Strawberries, per lb.	0 2	0 9

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0
Arum Lilies, p. doz.	6 0	12 0
Begonias, dozen	4 0	12 0
Cactus, per dozen	9 0	18 0
Calceolarias, dozen	4 0	9 0
Crassula, per dozen	12 0	30 0
Cyperus, per dozen	4 0	12 0
Dracæna terminalis, per dozen	30 0	60 0
— viridis, per doz.	12 0	24 0
Erica, various, doz.	12 0	30 0
Euonymus, in var., per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., doz.	4 0	18 0
Foliage plants, various, each	2 0	10 0
Ficus elastica, each	1 6	7 0
Fuchsias, dozen	3 0	8 0
Hydrangea, per doz.	9 0	18 0
— paniculata, p. doz.	24 0	36 0
Lilium lancefolium, per dozen	18 0	30 0
— auratum, doz.	12 0	30 0
— longefolium, doz.	12 0	24 0
Lobelias, dozen	3 0	5 0
Marguerites, doz.	6 0	12 0
Mignonette, doz.	3 0	6 0
Musk, dozen	2 0	4 0
Nasturtiums, doz.	3 0	5 0
Palms in var., each	2 6	21 0
Pelargoniums, per dozen	6 0	15 0
— Ivy-Leafed, doz.	3 0	4 0
— scarlet, doz.	2 6	6 0
Rhodanthe, per doz.	4 0	6 0
Stocks, dozen	4 0	6 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0
Arum Lilies, 12 blooms	2 0	4 0
Bouvardias, per bun.	0 6	0 9
Cactus blooms, doz.	1 6	2 0
Carnations, 12 bun.	3 0	6 0
— 12 blooms	1 0	3 0
Cornflowers, 12 bun.	1 0	4 0
Delphinium, 12 bun.	3 0	6 0
Eucharis, per dozen	3 0	6 0
Gardenias, 12 blooms	2 0	4 0
Gladioli, 12 bun.	2 0	9 0
— 12 sprays	1 0	2 0
Heliotropes, 12 spr.	0 6	1 0
Iris, 12 bunches	4 0	12 0
Lilac, white Fr., bun.	3 0	5 0
Lilium, vari., 12 bls.	1 0	5 0
— candidum, bun.	1 0	2 0
— 12 blooms	0 6	1 0
Maiden Hair Fern, 12 bun.	4 0	9 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	2 0	4 0
Pansies, 12 bun.	1 0	3 0
Pelargoniums, 12 spr.	0 6	1 0
— scarlet, 12 spr.	0 3	0 6
Primulas, dbl., 12 sp.	0 9	1 0
Rhodanthe, 12 bun.	4 0	6 0
Roses, Tea, per doz.	0 6	3 0
— coloured, dozen	2 0	4 0
— red, per dozen	0 4	1 0
— Safrano, dozen	0 6	1 0
— Moss, 12 bun.	6 0	12 0
Pinks (var.), 12 bun.	2 0	4 0
Spiræa, 12 bun.	4 0	8 0
Stephanotis, 12 spr.	2 0	4 0
Stock, 12 bunches	4 0	8 0
Sweet Sultan, 12 bun.	4 0	6 0
Sweet Peas, 12 bun.	2 0	6 0
Tuberoses, 12 blms.	0 6	1 0

Orchid bloom in variety, fairly good supply.

SEEDS.

London: *July* 10.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that to-day's seed market, as might be expected, was bare alike of buyers and of business. Although new French Trifolium is coming in cheap, buyers appear reluctant to operate. In Rapeseed the tendency continues downwards. There is no alteration in Mustard. For Birdseeds the inquiry is small. Blue Peas are scarce, and realise full rates. Haricot Beans keep firm.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, for the week ended July 6:—Wheat, 28*s.* 4*d.*; Barley, 20*s.* 9*d.*; Oats, 19*s.* 7*d.* For the corresponding week in 1888:—Wheat, 31*s.* 5*d.*; Barley, 25*s.*; Oats, 18*s.*

FRUITS AND VEGETABLES.

Spitalfields: *July* 10.—Black Currants, 5*s.* to 5*s.* 6*d.* per half-sieve; Red Currants 4*s.* to 4*s.* 6*d.* do.; Raspberries, 24*s.* to 26*s.* per cwt.; Strawberries, 2*s.* 6*d.* to 3*s.* per peck; Tomatos (foreign), 1*s.* to 1*s.* 3*d.* per box; Gooseberries, 3*s.* 3*d.* to 3*s.* 9*d.* per half-sieve; black Cherries, 5*s.* 6*d.* to 7*s.* 6*d.* per half-sieve; Cabbages, 2*s.* to 3*s.* per tally; Radishes, 3*s.* to 5*s.* 6*d.* do.; Broad Beans, 2*s.* per bushel; Peas, 1*s.* 6*d.* to 2*s.* 6*d.*, do.; do., 3*s.* 6*d.* to 4*s.* 6*d.* per sack; Turnips, 2*s.* 6*d.* to 3*s.* per dozen bunches; Carrots, 2*s.* 6*d.* to 3*s.* do.; spring Onions, 3*s.* 6*d.* to 4*s.* 6*d.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* to 1*s.* 6*d.* do.; Rhubarb, 1*s.* to 1*s.* 6*d.* per dozen bundles; Seakale, 1*s.* to 1*s.* 3*d.* per punnet; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 1*s.* 6*d.* to 1*s.* 9*d.* per score; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Vegetable Marrows, 2*s.* to 2*s.* 6*d.* per dozen; frame Cucumbers, 2*s.* to 4*s.* do.; natural do., 6*d.* to 1*s.* do.; Beetroots, 1*s.* to 1*s.* 3*d.* do.

Stratford: *July* 9.—There has been an excellent supply of all kinds of produce at this market during the past week, and with a good attendance of buyers, a brisk trade was done at the undermentioned quotations:—Cabbages, 2*s.* to 5*s.* per tally; Mangels, 17*s.* to 22*s.* per ton; Swedes, 17*s.* to 22*s.* do.; Onions, Dutch, 5*s.* to 5*s.* 6*d.* per bag; Tomatos, 1*s.* 3*d.* to 1*s.* 6*d.* per box; Strawberries, 3*s.* 6*d.* to 4*s.* per basket; Raspberries, 1*s.* 6*d.* to 2*s.* do.; Gooseberries, 4*s.* to 4*s.* 6*d.* per sieve; Cherries, English, 8*s.* to 9*s.* half-sieve; do., foreign, 1*s.* 9*d.* per basket;

Cucumbers, Dutch, 1*s.* per dozen; do., English, 3*s.* to 4*s.* do.; Lettuce, 1*s.* to 1*s.* 6*d.* per score; red Currants, 5*s.* per half-sieve; black Currants, 6*s.* 6*d.* do.; Green Peas, 4*s.* to 5*s.* 6*d.* per bag; Watercress, 6*d.* per dozen.

POTATOS.

Borough and Spitalfields, *July* 9.—The trade is quiet, and the business passing is at seasonable prices. Old Magnum Bonums, 60*s.* to 80*s.*; French and new Jersey Flukes, 100*s.* to 120*s.*; rounds, 90*s.* to 100*s.* per ton.

Spitalfields: *July* 10. — Quotations:—New: Jersey rounds, 4*s.* 6*d.* to 5*s.* 6*d.*; do., kidneys, 5*s.* to 5*s.* 6*d.*; do., flukes, 5*s.* 6*d.* to 6*s.*; Cherbourg rounds, 4*s.* 9*d.* to 5*s.*; do., kidneys, 5*s.* to 5*s.* 3*d.*; do., flukes, 5*s.* to 5*s.* 6*d.*; St. Malo, rounds, 3*s.* 9*d.* to 4*s.* 3*d.*; do., kidneys, 4*s.* 6*d.* to 5*s.* 6*d.* per cwt.

Stratford: *July* 9.—Quotations:—New: Jersey kidneys, 120*s.* to 130*s.*; do., Cherbourg, 100*s.* to 110*s.*; do., rounds, 100*s.* to 105*s.*; English Hebrons, 100*s.* to 106*s.*; do., Early Rose, 90*s.* to 100*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime old Clover, 120*s.* to 144*s.*; new, 85*s.* to 110*s.*; inferior, 45*s.* to 75*s.*; best hay, 78*s.* to 112*s.*; inferior, 20*s.* to 50*s.*; straw, old, 40*s.* to 45*s.*; do. new, 24*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

Begonia: *W. P.* Most unusual. We never saw anything like it before, and propose to examine it carefully at our leisure.

Broccoli: *A. B., Kelso.* The plant is making an attempt to form flowers.

Dahlia Juarezi: *J. O.* The variety has been in commerce for several years. The flower sent was a monstrosity.

Echeveria: *J. G.* Fasciation is not uncommon in this plant.

Eucharis Dying: *A. U.* Your bulbs are infested with the bulb mite, together with the fungus.

Foxglove: *F. L.* A very common malformation, often figured and described in these columns. No doubt it could be perpetuated, but it would take a long time to fix, and scarcely worth the trouble, but that is a matter of opinion.

Insects: *C. F. P.* Your Potato tubers have been gnawed into by large numbers of one of the smaller species of Rove-beetles (Staphylinidæ) of the genus Oxytelus. These insects are generally formed in decaying fungi and other vegetable matters in a decomposing state. The tubers may have been previously attacked by the caterpillars, one of the moths (Agrotis), which led to their being selected by the beetles. It is a new fact in the history of the Potato growth. *I. O. W.*

Medical Plants and Mosses: *A. C.* The specimens of mosses you send are not to be made out from such specimens, and are of no horticultural value. Papaver somniferum (Opium Poppy), narcotic; Aconitum Napellus, Aconite acrid poison; Conium maculatum (Hemlock), irritant poison; Hyoscyamus niger (Henbane), narcotic; Digitalis purpurea (Foxglove), sedative; Colchicum autumnale (Colchicum). Any good book of reference on botany would give you what you want.

Melon Flowers Falling Off: *L. B.* If the flue be sound—that is, that there is no escape of the fumes of combustion into the Melon pit—it will not be the cause of the blooms falling. The bottom-heat should certainly be as high as 85° to 90°, and if it is much less than that Melons will not succeed. The night warmth should be 68° to 70°, and that of the day 10° to 15° higher. Melons do best with the least possible amount of shading. Some growers never shade. Shading induces soft growth, and spoils flavour. If the flue runs under the bed, the latter will require heavy waterings with warm water weekly, or nearly so, and sometimes manure-water may be afforded when the plants are in bearing; and a vessel containing water should, if possible, be placed on the flue beneath the Melon-bed, or large quantities of water thrown into the chamber, to counteract the dryness caused by the flue. The gardener should ventilate freely, if the day be warm, between 9 or 9.30 A.M., and 3 or 3.30 P.M., gradually increasing the amount of ventilation until the maximum point for the day is reached—say at 1 o'clock. Of course in dull or rainy weather less air is required. The flowers falling, points either to dryness of the soil, or want of the necessary bottom-heat. It will be easy to ascertain if these are right.

Names of Plants: *T. S.* 1, Cryptomeria Lobbi; 2, a Cedar, but whether Lebanon Atlas or Deodar it is impossible to say; 3 and 5, Juniperus virginiana (Red Cedar); 4, Thuia plicata; 6, Acer Negundo, variegated form.—*K.* 1, Dianthus, next week; 2, Spiræa Aruncus; 3, Vincetoxicum officinale; 4, Eriogonum umbellatum.—*J. W.* Aloe vulgaris, probably.—*D. H.* 2, Lonicera tatarica; 3, L. Ledebourii; 4, Spiræa Douglasi; 8, Cornus sibirica. Others next week.—*T. P. Allan.* The broad-leaved specimen is a Polygonum, but we are unable to name either of your specimens without flowers.—*E. C. C. D.* Gilia capitata.—*Mungo Chapman.* 1, Inula grandiflora; 2, Ornithogalum narbonense; 3, Thalictrum flavum; 4, Erigeron multiradiatum; 5, Anaphalis margaritacea; 6, Saxifraga diversifolia.—*A. W.* 1, Phyllyrea latifolia; 2, Quercus Ilex—one of the evergreen Oaks, but it is not possible to say which.—*G. F. W.* Berteroa incana.—*W. Smith & Sons.* Lilium pyrenaicum.—*S. A.* Alstromeria aurea. Alström was a Swedish botanist.—*Camjee.* The Dendrobium is chrysanthum, probably—we cannot be certain in the absence of flowers. The leaf sent is covered with scale insects, and besides it bears evidence of bad cultivation—probably too much heat, too little moisture, and want of proper shading. Such dirty, sickly plants, in view of the welfare of the other inmates of the house, would be better if destroyed forthwith.

Photograph: *H. A. Bunyard.* Many thanks. It will appear shortly as an ink-photograph.

Potatos Diseased: *A. B. Dryden.* Your tubers are attacked by a form of the ordinary disease.

Snail: *C. B.* The shell was originally introduced, we believe, from the West Indies, and has now made itself at home in our Cucumber houses. It is called Bulimus Goodalli, and has been frequently figured in our columns.

Strawberry Latest of All: *T. L.* We could see that the fruit was large, but that was all; for, owing to loose packing, they had got completely smashed in transit.

Strawberry: *F. F.* Myatt's Eleanor. Fruit arrived in bad condition.

Suckers from Geranium: *H. B.* What you take to be a sucker is a parasitical plant called Broomrape, or Orobanche minor. It feeds on the roots of the Pelargonium, and was probably introduced with the peat.

Tomatos: *B. S., Hull.* Your Tomatos are attacked by the black spot fungus (Cladosporium lycopersici), illustrated in our issue for October 1, 1887, p. 409.

Violas: *Collins Bros. & Gabriel.* The twenty varieties forwarded for our inspection we take to be among the best now grown, the colours being good and distinct, and all are continuous bloomers.

CATALOGUES RECEIVED.

Ant. van Velsen & Co., Haarlem, Holland—Dutch and Cape Bulbs.

L. Späth, Rixdorf, bei Berlin—Flower Roots.

E. H. Krelage & Son, Kleinen Houtweg, Haarlem—Flower Roots (Wholesale).

Seeger & Tropp, 12, Lordship Lane, East Dulwich, London, S.E.—Orchids.

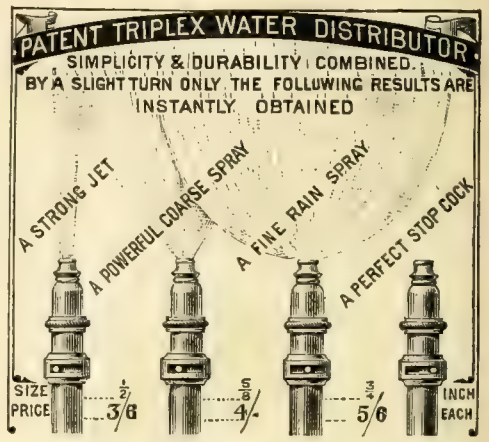
T. Laxton, Bedford—Strawberries.

J. M. Thorburn & Co., 15, John Street, New York, U.S.A.—Potatos and Wheats.

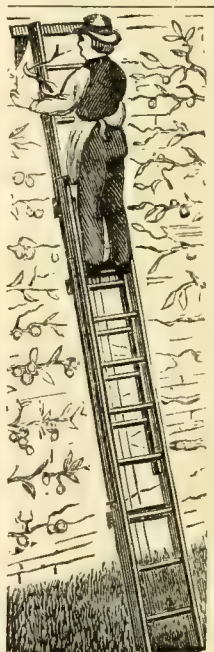
John Laing & Sons, Forest Hill, London—Novelties (Abridged List).

Communications Received.—W. S.—C. R. H.—Prof. Crepin of Brussels.—H. T.—P. S.—E. M.—Oodeypore.—B. F.—P. L. S., Paris.—H. E.—U. D.—G. C.—J. J. W.—A. de la D.—H. J. R., Florence (flowers quite withered, "sad coloured.") W. P.—T. R. B.—B. & Co.—J. W.—D. T. F.—Agricultural Bureau, Adelaide.—Danzig.—G. & B.—W. R.—J. L. & Sons.—J. G. Baker.—N. E. Brown.—R. A. R.—W. C.—W. M. Gilbert.—J. H. M.—A. W. Edwards (correction duly noted).

☞ *Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect in all cases to obtain an answer to their enquiries in the current week.*



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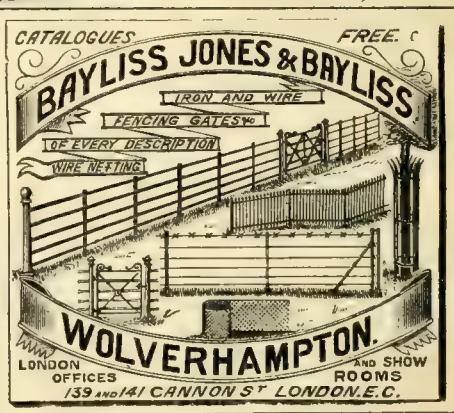
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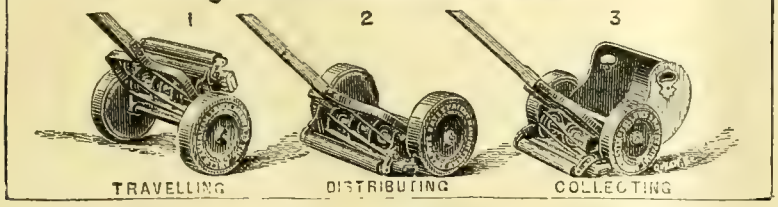
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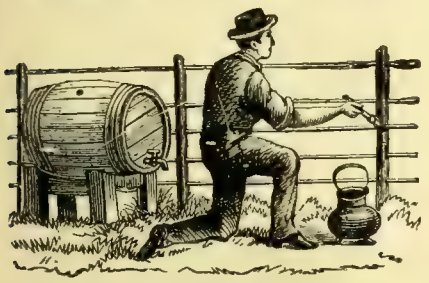
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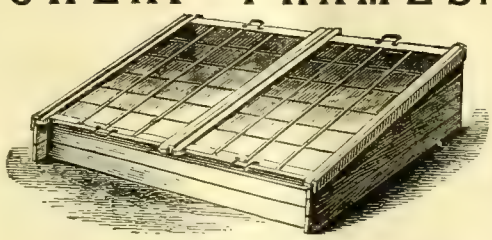
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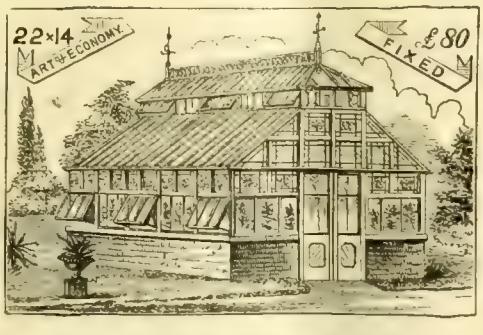
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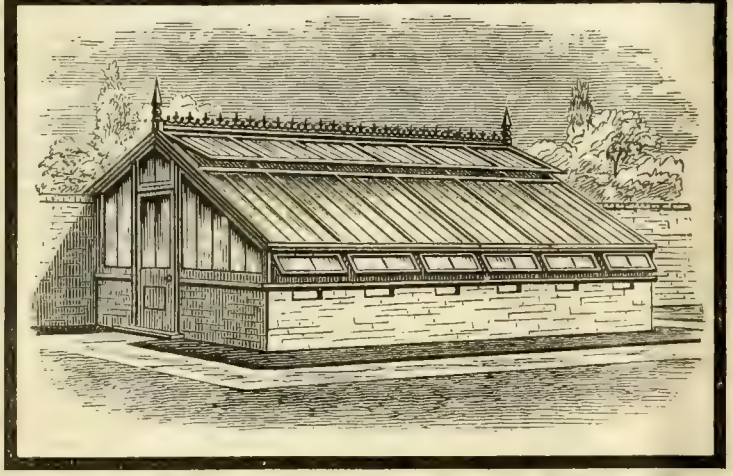
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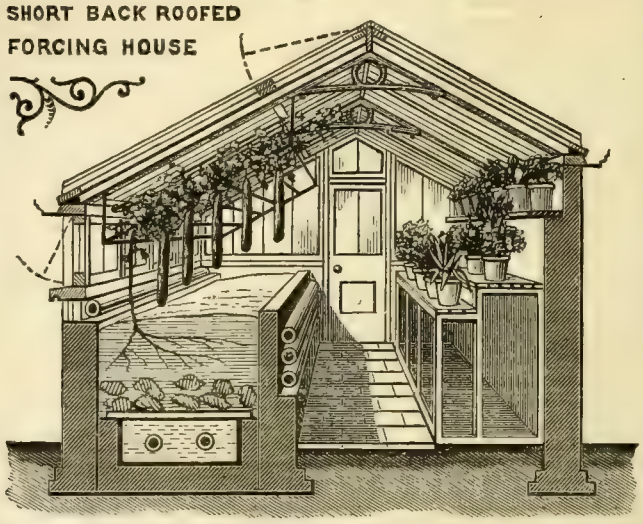
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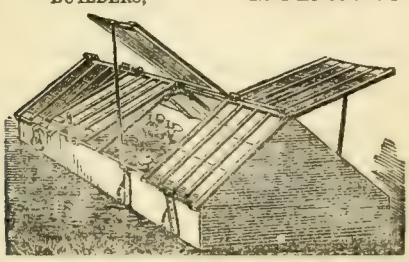


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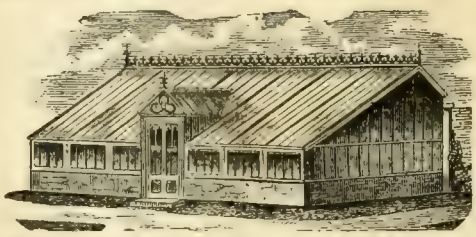
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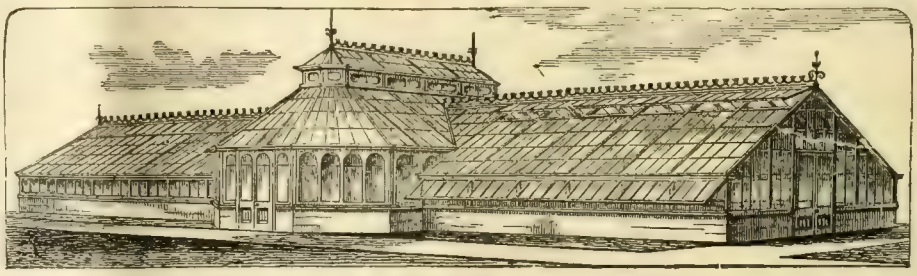


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The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2534.

No. 134.—Vol. VI. {Third Series.} SATURDAY, JULY 20, 1889. {Regt. as a Newspaper. WITH SUPPLEMENT.} {PRICE 3d. Post-Free, 3½d.}

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The TENTH SUMMER EXHIBITION of PLANTS, FLOWERS, FRUITS, and VEGETABLES, Grand Gymnastic display, Naval Tournament, and Exhibition of Bees, will be held on the Police Cricket and Athletic Grounds, Fairfield, on SATURDAY and MONDAY, August 3 and 5. Entries close, July 27. Schedule of Prizes on application to
EDWARD BRIDGE, Sec., Tarbock Road, Huyton.

CLAY CROSS HORTICULTURAL SOCIETY.—The ANNUAL SHOW of the above will be held on TUESDAY, August 13. Entries close August 5. For Schedules, apply to
G. LAMB.
Clay Cross, Chesterfield.

CARTERS' "TESTED" SEEDS FOR PRESENT SOWING.

CABBAGE.—CARTERS' HEARTWELL MARROW, acknowledged to be the finest early Cabbage in cultivation, price 1s. 6d. per ounce, 6d. and 1s. per packet, post-free.
CARTERS' MAMMOTH BEEFHEART, the best main crop Cabbage, price 1s. 6d. per ounce, 6d. and 1s. per packet, post-free.

LETTUCE.—CARTERS' GIANT WHITE COS, price 2s. 6d. per ounce, 6d. and 1s. per packet, post-free.
DUNNETT'S GIANT WINTER COS, price 2s. 6d. per ounce, 6d. and 1s. per packet, post-free.
ALL THE YEAR ROUND, price 1s. 3d. per ounce, 6d. per packet, post-free.

ONION.—CARTERS' GOLDEN GLOBE TRIPOLI, price 1s. and 2s. 6d. per packet, post-free.
CARTERS' GIANT WHITE TRIPOLI, price 1s. per ounce; 6d. per packet, post-free.
CARTERS' WHITE EMPEROR, price 1s. and 2s. 6d. per packet, post-free.

CARTERS', ROYAL SEEDSMEN by Sealed Warrants, 237 and 238, HIGH HOLBORN, LONDON.

ORCHIDS.—Clean, well-grown plants, at low prices. Specimen Orchids a specialty. Price List free, JAMES CYPHER, Exotic Nurseries, Cheltenham.

LAXTON'S NEW STRAWBERRIES Must be grown by all.
Descriptive LIST, with prices of "Latest of All" (new, 1889), "Noble," "A. F. Barron," "Commander," &c., now ready. Six First-class Certificates.
THOMAS LAXTON, Seed Grower, Bedford.

AUSTIN ROBERTS is prepared to RECEIVE CHOICE FLOWERS for Disposal at best Market Prices. Quick Sales, prompt returns, and Weekly Settlements. Good references. Boxes and Labels supplied.
26, Russell Court, Catherine Street, Strand, London, W.C.

HOOPER AND CO. (Limited), are in a position to guarantee the highest Market Prices for EUCHARIS, LILY of the VALLEY, ROSES, ORCHIDS, ARUM LILIES, and every description of Cut Flowers. Communicate with Commission Department.
HOOPER AND CO. (Limited), Covent Garden, London, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

J. W. BARNHAM (late of Squelch & Barnham) RECEIVES ON COMMISSION, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

HENRY SQUELCH (late Squelch & Barnham) RECEIVES CONSIGNMENTS of good Black Grapes, Muscats, Cucumbers, Tomatos, and Beans; also all kinds of choice Hothouse Flowers. H. Squelch's trade being especially for First-class Hothouse Produce, and he having a connection amongst the best Houses in London and Country, is able to command highest Market Prices. Account Sales furnished daily, and accounts settled weekly, or as desired.
Empties and Labels Supplied. Bankers' and other references.
North Row, Covent Garden Market, W.C.

PEACHES, FIGS, MELONS, GRAPES, CUCUMBERS, TOMATOS, &c. Highest Market Prices guaranteed. Prompt Cash.—HENRY RIDES, Covent Garden.

Manetti Stocks.—Cash on Delivery.
WANTED, free well-grown stuff. Quantity for sale, with price per 5,000 or 10,000, to
P. H. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, ROSE BUDS, of all the best kinds, must be true—in EXCHANGE for Seedling BRIARS—Cuttings of all kinds of Bedding ZONAL PELARGONIUMS and STRAWBERRY WATERLOO.
H. CANNELL AND SONS, Swanley, Kent.

For Autumn Sowing.
SUTTON'S FLOWER OF SPRING CABBAGE, the best for autumn sowing, dwarf compact habit, firm heart, and stands well, 1s. 6d. per ounce, Post-free. SUTTON'S MAGNUM BONUM CAULIFLOWER, undoubtedly the finest of all the Cauliflowers, 2s. 6d. per packet, Post-free. SUTTON'S WINTER WHITE COS LETTUCE, one of the most valuable Lettuces yet offered, especially prized for winter use, 1s. per packet, Post-free.
SUTTON'S SEEDS GENUINE ONLY DIRECT FROM SUTTON AND SONS, The Queen's Seedsmen, READING.

Dutch Bulbs Direct from the Growers.
ANT. ROOZEN AND SON'S CATALOGUE for 1889, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (94 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents.
Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

ROMAN HYACINTHS, NARCISSUS, LILIUMS, TUBEROSES, and many other FRENCH BULBS, grown and offered by LOUIS BREMOND, fils, Ollioules, France.
WHOLESALE LIST on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, London, W.C.

PRIMULAS—PRIMULAS—PRIMULAS.—Twentieth year of distribution. Williams' Superb Strain, 1s. 6d. per dozen, 10s. per 100. CINERARIAS, same price; also double white PRIMULAS, 6d. each. Carriage free for cash with order.—JOHN STEVENS, The Nurseries, Coventry.

NATIVE PLANTS, FERNS, and SEEDS, of New Zealand:—Ranunculus Lyalli, R. Buchanani, R. Godleyanus, Cordylinis, Clematis, Celmisias, Ourisias, &c.—Can be supplied in any quantity at low rates by GEORGE MATTHEWS, Nurseryman and Seedsman, Dunedin, New Zealand.

KAFFRARIAN PALM. — Fresh Seeds in July of PHŒNIX RECLINATA.
Apply to Messrs. HURST AND SON, 152, Houndsditch, E; or to J. C. NELSON, Cambridge Nurseries, Kaffraria, South Africa. Nurserymen's CATALOGUES desired.

PUBLIC DISTRIBUTION of CHOICE DAFFODILS.—Bulbs now ready (and better for early plantation), being surplus from the finest private collection in the kingdom. Some good LILIES in September from same gardens. Lists—WOOD'S Hardy Plant Club, Kirkstall, Leeds.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey, and Flower Market, Covent Garden, W.C.

LILIES OF THE VALLEY! English-grown!
The best for early forcing, finest large flowers, and superior in every respect to German crowns. Price per 1000, 10,000, to 100,000 on application.
T. JANNOCH, Lily of the Valley Grower by Special Appointment to H.R.H. The Prince of Wales, Dersingham, King's Lynn, Norfolk.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. £1 per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.

Strawberries.
CHARLES TURNER'S New and Descriptive LIST is now ready, and may be had free on application.
The Royal Nurseries, Slough.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
DICKSONS (*Limited*), The Royal Seed Warehouse, CHESTER.

NICOTINE SOAP.—An effectual eradicator of all insect pests affecting plants, without injury to foliage. Jars, 1s. 6d., 3s., 5s. 6d.; Tins, 15s. 6d., 25s., 95s.
All Seedsmen and Florists.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Thursday Next.—(Sale No. 7957.)
CHOICE ESTABLISHED ORCHIDS and TREE FERNS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street Covent Garden, W.C., on THURSDAY NEXT, July 25, at half-past 12 o'Clock precisely, a choice COLLECTION of ESTABLISHED ORCHIDS, including many fine varieties in Flower and Bud, rare Cypripediums, &c. Also IMPORTED ORCHIDS, TREE FERNS from New Zealand, &c.

On view morning of Sale, and Catalogues had.

Friday Next.—Cypripediums.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, July 26, a very fine COLLECTION of CYPRIPEDIUMS, including amongst many others Cypripedium Arthurianum, C. Arthurianum grandiflorum, C. regale, C. Winnianum, C. Godefiianum, C. Buchananum, C. caudatum Luxembourg variety, C. pavonianum, C. javanico superbiens; also a large quantity of various ESTABLISHED ORCHIDS, together with a few splendid pieces (imported), of the beautiful SCHOMBURGKIA CORINATA GRIES, flowers in large heads, white and prettily marked with bright rose; also the pure white EPIDENDRUM INDIVISUM, and other ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.
DENDROBIUM NOBILE ALBUM.
CYPRIPEDIUM SAVAGEANUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, July 26, at half-past 12 o'Clock, by order of Messrs. Seeger & Tropp, the entire Stock, consisting of Three Plants only of the new DENDROBIUM NOBILE ALBUM, the first and only of its kind in existence. The sepals and petals of this novelty are wholly pure white, and the lip creamy-white, with a dark rose blotch in centre. At same time will be offered the only remaining Plant of the new and beautiful CYPRIPEDIUM SAVAGEANUM; also the New CYPRIPEDIUM SEEGERIANUM, C. PAGEANUM, CATTLEYA CALUMNATA MAGNIFICA, and other New, Rare, and Valuable ORCHIDS.

On view morning of Sale, and Catalogues had.

Acton.
Important to Builders, Florists, Speculators, and others.
An exceedingly CHOICE FREEHOLD ESTATE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, July 31, at 2 o'Clock, in one Lot, the VALUABLE FREEHOLD NURSERY or BUILDING ESTATE, known as the Priory Nursery, Acton Lane, Acton, situate within a few minutes walk of Acton, South Acton, Acton Green, and Turnham Green Railway Stations.

The Estate comprises an area of about 4 Acres, with 28 well-built Greenhouses, containing nearly 40,000 feet of Glass, heated by 9000 feet of Hot-water Piping, Stabling for 4 Horses, Coach Houses, and Numerous Trade Buildings. The Property possesses great advantages for being continued as a Nursery, but the Land is thoroughly ripe for Building Purposes, and, with the important frontages of 383 feet, affords ample scope for development for Building Purposes. The Subsoil is fine Sand. Possession will be given on completion of the purchase.

Particulars, with plan, may be had on the Premises; at the Mart, E.C.; of Messrs. FORD, LLOYD, BARTLETT AND MICHELMORE, Solicitors, 4, Bloomsbury Square, W.C.; of W. H. HUDSON, Esq., Solicitor, 1, Furnival's Inn, E.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C.; and Leytonstone.

Special Sale.—Friday, August 2.
Instead of July 30, as announced last week.
ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SALE of ORCHIDS in FLOWER will take place as above, for which they will be GLAD TO RECEIVE NOTICE OF ENTRIES AS EARLY AS POSSIBLE.

To Nurserymen, Florists, and Others.

SILVER HALL NURSERY, Isleworth, about ¼ acre, comprising 10 Houses, well stocked with Cucumbers, Tomatos, Ferns, &c.; very fine Azaleas, Solanums, Bouvardias, and miscellaneous Bedding Plants, Pear Trees, Apple Trees, Plums, Currants, Gooseberries, &c.

MESSRS. WALPOLE, LEWIN AND CO. will SELL the LEASE and GOODWILL of the above BUSINESS by AUCTION, at the Mart, Tokenhouse Yard, E.C., on WEDNESDAY, July 24, 1889, at 1 o'Clock precisely.

Particulars and conditions of Sale may be had of J. F. DAVIES, Esq., Solicitor, 26, Putney Bridge Road, S.W.; at the Mart, E.C.; on the Premises, and of the Auctioneers, 41 and 41A, Wilton Road, S.W.

To be Sold.—A Great Bargain.
West of England.

FOR SALE, on particularly advantageous terms, a genuine NURSERY BUSINESS. An exceptional opportunity to any one with capital.

Full particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

TO BE SOLD, an extensive Wholesale and Retail NURSERY BUSINESS, situate in Richmond, Surrey. Established in 1802. Now being sold in consequence of the declining health of the proprietors, in whose hands it has been for the last 50 years. For further particulars, apply to WATSON BROS., 6, Charlotte Street, Portland Place, W.

FOR SALE, a FLORIST and MARKET GARDENER'S BUSINESS, 20 miles from London. A good chance for an active man. £900, with Crops and Plant. Address by letter, KAPPA, care of Crosse, Moir, & Co., 57, Coleman Street, E.C.

Snaresbrook, N.E.—To Nurserymen and Florists.

TO LET or for SALE, a commodious Freehold HOUSE, with Outbuildings, 4 Glass-houses, and about half an acre of Land. A first-class opening for an energetic man.
SUTTON ABBOTT, Auctioneer, The Mall, Wanstead, N.E.

To Nurserymen.—A good opportunity.

TO LET, VICARAGE NURSERY, Vicarage Road, Lower Tottenham, consisting of double-fronted House of 9 rooms, and 5 Glass-houses in rear of house. Rent £45 per annum; or could be Purchased, payment to extend over a term of years.

Apply to CARETAKER on Premises to view.

FLOWER MARKET.—Commodious PREMISES, with spacious Ground Floor, facing the Wholesale Flower Market, TO LET, suitable for a Wholesale Trade. Rent moderate. Upper portion all let off if not wanted.—Apply, SIMMONS, 35, Haymarket, S.W.

TO BE LET, from Michaelmas, DYSON'S FARM, at Edmonton. Comprising a comfortable House, ample Stabling, Bunching Sheds, and other Buildings; and 38 acres of Market Garden Land, now occupied by Mr. Hollington.
Apply to Messrs. PHILIP D. TUCKETT AND CO., Land Agents, 10A, Old Broad Street, E.C.

Ponder's End, Middlesex (8 miles from London).
To NURSERYMEN and FLORISTS.

TO BE LET, on Lease, one to twenty acres of rich MEADOW LAND for 21, 60, or 80 years at £10 to £12 per acre, with option of Purchasing the Freehold during the first 9 years.
Apply to A. AND G. GUIVER, Land Agents, Ponder's End, Middlesex.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Make SPECIALTIES of the following:—

ORCHIDS, of which they have an immense stock, and they are constantly receiving fresh importations from various parts of the world.
ORCHID BASKETS, made of the best Teak and Copper Wire.
COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.
ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.
TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.
FERNS, a large and fine stock of the leading kinds.
GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.
STOVE and GREENHOUSE PLANTS, suitable for table and other purposes, in great variety.

The Company offer all the above at the lowest possible prices. Descriptive PRICE LISTS, post-free, on application to

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.

"GEMS"—"GEMS"—"GEMS"
of Choice Stove Plants.

OXERA PULCHELLA—dense clusters, 8 to 10 inches across, of pure white, funnel-shaped flowers, about 2 inches long and 1 inch across. Flowers in winter very lasting, graceful and beautiful, 5s.

SCHUBERTIA GRANDIFLORA—flowers white with delightful, almond-like fragrance, produced in large trusses, similar to Stephanotis. Excellent for cutting. 2s. 6d. and 3s. 6d.

STEPHANOTIS FLORIBUNDA—the finest variety in cultivation, and freest bloomer, flowering at every joint, and blooms in a lower temperature than any other variety we know. 1s., 1s. 6d., 2s. 6d., 3s. 6d., 5s.; and fine specimens, 21s., 31s. 6d., and 40s. each.

STIGMAPHYLLUM CILIATUM (Golden Vine)—flowers rich orange, similar to the lovely Orchid Oncidium flexuosum. Very distinct. 2s. 6d. each.

TOXICOPHLÆA SPECTABILIS (Winter Sweet)—large dense sprays of white flowers, sweetly perfumed. Beautiful winter-flowering plant. 2s. 6d. and 3s. 6d. each.

GLONERA JASMINIFLORA—one of the most beautiful white-flowering plants for either cutting or decoration. Blooms in the winter or early spring, and worthy of a place in the most select collection. 2s. 6d. and 3s. 6d.

CATALOGUES of these, and all you want for a Garden free, by post from
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

YEWS (Golden and Seedling Variegated).—Now is the time to see these lovely Trees in their glorious splendour of colour. Nothing can exceed their magnificent beauty, and no place, however small, should be without them. Purchasers are invited to inspect our unrivalled stock. Come and select your plants for removal next autumn; also all kinds of Ornamental Trees in every shade and tint. ROSES and CLEMATIS in pots in large quantities.
H. LANE AND SON, Nurseries, Great Berkhamstead.

16 VARIETIES of STRAWBERRIES, which R. Gilbert considers the cream. They include all the modern varieties, but the good old Standards are not forgotten. In pots for forcing, and ordinary hand layers.
Send for R. G.'s STRAWBERRY LIST, where all are described and priced, with Hints upon Culture. Warranted true to name.
R. GILBERT, High Park, Stamford.

NORTHAMPTONSHIRE HORTICULTURAL SOCIETY'S GREAT SUMMER SHOW, Abbey Park, Northampton, August 21 and 22. TWO HUNDRED and FIFTY POUNDS in PRIZES. For best 12 Plants, £15, £10, £5, £2 10s. Central Group for Conservatory Decoration, £9, £6, £2 10s. 24 Roses, £2, £1 10s., £1. Collection of Vegetables, 12 varieties, selected, Veitch Memorial Medal and Prize, £5, £1 10s., 15s., 7s. 6d. Entries close, August 9. Schedules and full particulars from
W. B. TROUP, Secretary, Northampton.

SHREWSBURY GREAT FLORAL FÊTE, WEDNESDAY and THURSDAY, August 21 and 22.—For Twenty Plants, £25, £20, £15. For Grapes, £60. Collection of Fruit, £10, £6, £3. Collection of Vegetables, £5, £3, £2. Messrs. Webb's Prizes for a Collection of Vegetables, £5, £3, £2, £1. Valuable Prizes offered by Messrs. Sutton & Sons. Schedules may be had from
Messrs. ADNITT AND NAUNTON, Hon. Secs., Shrewsbury.

INTERNATIONAL CHRYSANTHEMUM CENTENARY EXHIBITION, to be held in Edinburgh, on NOVEMBER 21, 22, and 23, 1889. Prizes offered in Money and Silver Cups, to value over TWO HUNDRED and FIFTY POUNDS, including the "City of Edinburgh" Cup, value £20.
Prize Schedules and Rules to be had on application, to Messrs. MUNRO and FERGUSON (Joint Hon. Secretaries), 6, South Saint Andrew Street, Edinburgh.



NATIONAL CO-OPERATIVE FLOWER SHOW, to be held at the Crystal Palace on August 17, in connection with the Great Co-operative Festival and Exhibition. FIVE HUNDRED POUNDS in Prizes and Medals. Entries close August 7. Schedules free on application to the Agricultural and Horticultural Association (under whose auspices the Show is held).
EDWD. OWEN GREENING, Secretary.
3, Agar Street, Strand, W.C.; Creek Road, Deptford, S.E.

KENT STRAWBERRIES. — Swanley has again this season far excelled all other localities. We have 8 acres in 40 best kinds, specially for runners, and can supply any quantity at once. Send for a CATALOGUE.
H. CANNELL AND SONS, Swanley, Kent.

PRIMULAS, Double White, 5s. per doz., 35s. per 100. Prices for quantities on application. Terms cash with order.
TAYLOR AND CO.,
Nurserymen, Timperley, Cheshire.

SPECIAL SURPLUS OFFER.—A few large PALMS, DRACÆNAS, CROTONS, CYCAS REVOLUTA, PANCRATIUMS, &c., also CYPRIPEDIUM INSIGNE, YUCCA ALOEFOLIA VARIEGATA, and Y. FILAMENTOSA VARIEGATA. Double PRIMULA ANNIE HILLIER, strong plants, 9s. and 12s. per dozen; 70s. per 100. Strong CLEMATIS, in best vars., do. do. AMPELOPSIS VEITCHII, very fine, do. do. Tea-Scented ROSES, very fine bushy plants on Sweet Brier, leading varieties, 12s. per dozen; 80s. per 100. LISTS free. Terms cash, packing free.
EDWIN HILLIER, The Nurseries, Winchester.

The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

EAST LOTHIAN INTERMEDIATE STOCKS.

THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz, Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., and 5s. each colour. Price to the Trade on application.
By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

W. GORDON, Importer of ORCHIDS.

AN IMMENSE STOCK of recently imported plants compels a SALE of the ESTABLISHED PLANTS to make room. They have not yet flowered, but are all flowering plants, and must be sold at a GREAT SACRIFICE. Very valuable varieties are certainly to be obtained, and great bargains. See Public Journals for high prices recently obtained. The SPECIAL OFFER affords a PAYING INVESTMENT to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the Public and Trade. GOOD ESTABLISHED PLANTS:—

25 in	25 species and varieties ...	...	£3 3 0
50 in	50 " " " ...	...	5 5 0
100 in	100 " " " ...	...	10 10 0

CATALOGUE of the above large stock held on application to
W. GORDON,
The Nurseries, Amyand Park Road, Twickenham, Middlesex.

LILY OF THE VALLEY.
First-class German flowering Crowns.
Any quantity.
H. DAMMANN, Jun.,
Breslau.

To Seedsmen.

FOR SALE, a NEST of 56 DRAWERS, nearly new.—Apply, 25, Catherine Street, Covent Garden, W.C.

NEW SEASON'S ARCHANGEL MATS. First shipment just arrived.—RAFFIA FIBRE. Bright and prime quality, all plaited. Prices on application.
JAMES T. ANDERSON, 135, Commercial Street, London, E.

GARDEN REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each.

GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Cloth or Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c. Write for Price List.

Terms strictly Cash with order.

CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Union Bank of London.*

GENUINE GARDEN REQUISITES, as supplied to the Royal Gardens. All Sacks free. Cocoa-nut Fibre Refuse, fresh, 1 sack, 1*s.* 3*d.*; 10 sacks for 12*s.*; 15 for 17*s.*; 20 for 20*s.*; 30 for 28*s.*; 2 ton truck free on rail, 30*s.* Best Brown Fibrous Kent Peat, 5*s.* per sack; 5 for 22*s.* 6*d.*; 10 for 35*s.* Best Black Peat, 4*s.* 6*d.* per sack; 5 for 20*s.* Coarse Bedfords' Sand, 1*s.* 6*d.* per bushel; 14*s.* half ton; 25*s.* per ton. Potting Composts, 5*s.* per sack. Genuine Peruvian Guano, Crushed Bones, Fertilisers, &c. Fresh Sphagnum Moss, 2*s.* 6*d.* per bushel; 6*s.* per sack. Charcoal, 2*s.* 6*d.* per bushel; 8*s.* per sack. Flower Sticks, painted and unpainted; Labels, and Bamboos. Best Raffia, 1*s.* per lb.; 7 lb. for 5*s.* 6*d.* Pure Leaf Mould, Peat Mould, and Yellow Fibrous Loam, each 1*s.* per bushel; 3*s.* per sack. Spécialité Tobacco Paper, and Cloth, 1*s.* per lb.; 28 lb. for 26*s.* Mushroom Spawn, best quality, 4*s.* per bushel. Russia Mats, 10*s.* to 18*s.* per dozen. Virgin Cork, 28 lb., 5*s.* 6*d.*; 56 lb., 10*s.*; 1 cwt., 17*s.* Write for free Price List.—W. HERBERT AND CO., Hop Exchange, Southwark Street, London, S.E. (near London Bridge).

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.* each, or 1 cwt. Bags, sealed, 13*s.* By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

CLAY'S FERTILISER OR PLANT FOOD

Sold in Packets, 6d. and 1s. each, and in *SEALED BAGS ONLY,*

7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
2/6	4/6	7/6	12/6	20/-

CLAY & LEVESLEY,
TEMPLE MILL LANE,
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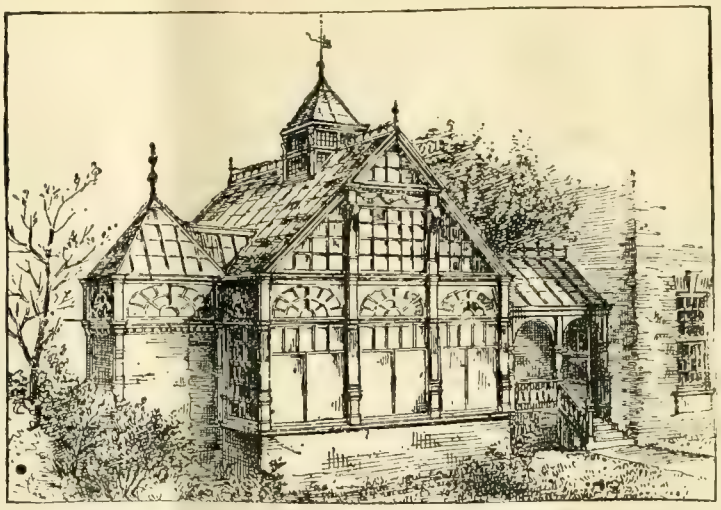


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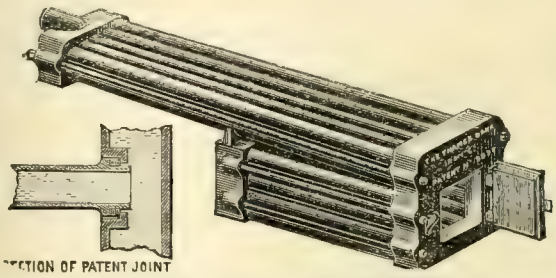


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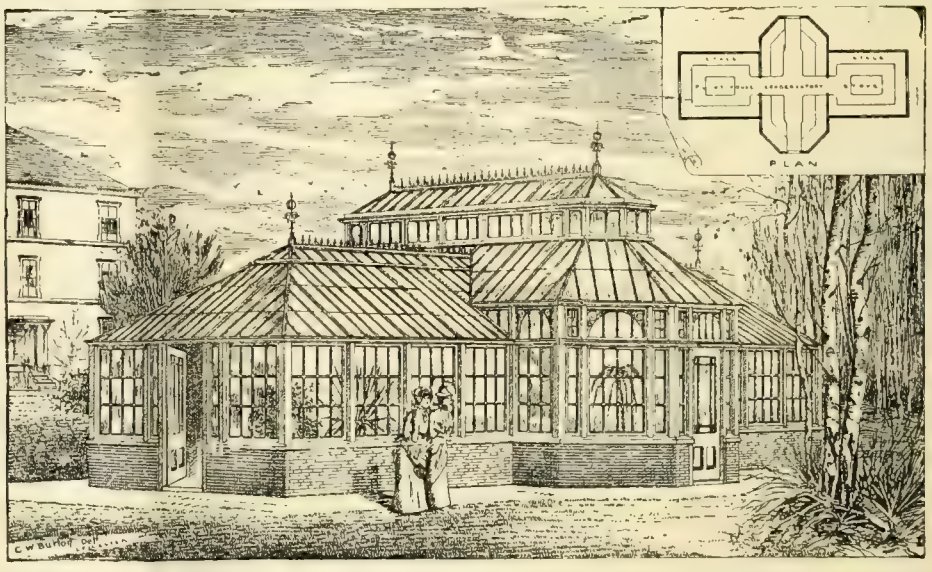
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FOR
Next Week, July 27,
WILL CONTAIN A
REPORT ON THE CONDITION
OF THE
FRUIT CROPS
FOR 1889.



THE
Gardeners' Chronicle.

SATURDAY, JULY 20, 1889.

THE NOMENCLATURE OF ORCHIDS AND OTHER PLANTS.*

THE now popular Orchids may well serve as a convenient illustration by which to discuss the principles of a general system of nomenclature for all the plants cultivated in our gardens, but of course no system of naming can be adopted and restricted to Orchids alone. We may on this occasion use what I may call the Orchid argument, but any right and proper rules as applied to Orchids will be equally right and applicable to all other natural orders or divisions of plants whatever.

1. The first and main point we have to strive for is "a regular system of nomenclature," so clear and simple in its principles as to command the adherence of the great majority of botanists and horticulturists of all countries.

2. De Candolle expressly states in his second article that "the rules of nomenclature should neither be arbitrary nor imposed by authority. They must be founded on considerations clear and forcible enough for everyone to comprehend, and be disposed to accept."

If De Candolle's view as above is to be here accepted, it follows that clear and forcible logic as to right principles or rules of any assembly must carry more weight than any which may seem to be imposed by its authority. In other words, right nomenclature, like all other matters of importance, simply depends on our avoiding not only what seems to be wrong, or is generally acknowledged to be wrong, but what really is wrong.

3. Thus, it is manifestly wrong to use any names, new or old, that may create error, ambiguity, or confusion; and no established custom, if illogical or wrong, can ever become a law worth respecting, although De Candolle maintains the contrary. (See Art. 4.)

* 1. See *Laws of Botanical Nomenclature*, by Alphonse de Candolle, Paris, 1867. English Translation, published by Reeve & Co., Henrietta Street, W.C., 1868.

2. The *Nomenclature of Garden Plants*, by Dr. Masters, *Journal of the Royal Horticultural Society*, 1878.

3. Dr. Wittmack's Essay in *Mémoires du Congrès d'Horticulture*, Paris, 1887.

The principles and forms of naming should be as similar as possible, *i.e.*, the same in plan and application (not only in botany and zoology, as De Candolle maintains in his Art. 5), but in all the other sciences. "All scientific names should be in Latin," says De Candolle, and for cosmopolitan convenience it is a good rule; but some popular or vernacular names are often most expressive, and in all ways preferable when most different from the mere translation of the Latin name. For example, "Daisy" is not a translation greatly resembling "Bellis," nor is "Plantain Lily" an imitation in English of the Latinised-German name Funkia.

When our dealings as botanists are confined to the wild genera or species so-called, the mode of procedure is simple enough, since, if after due precaution and careful search they are found to be unknown (*i.e.*, undescribed and unfigured), they are figured and described in some fairly accessible publication, and if they really are new (*i.e.*, previously unrecorded, or illustrated in a systematic manner), this first publication ends the matter, or in other words we all ought to agree to accept the name or names as thus originally rightly given. Had this rule been strictly and systematically adhered to, much trouble would have been saved; but various causes have fought against such a consummation. Thus, in some cases the original figure or description of a species has been overlooked, and the plant re-named by a second, or third, or by more authorities, hence that array of synonyms some of us know too well! Or, again, other complications have arisen, such as inexact illustration, be it in word or picture, ending as before, in other synonyms or surplus names. The ambiguity of words, illustrations, and specimens more or less perfect, have accounted for much, but now and then one botanist has differed from another, and, imposing his authority, has re-named plants, both genera and species, which were tolerably well known before; and so, again, we have had to harvest a crop of Tares among the corn—in a word, more synonyms. Other negligences and ignorances have been at work, too numerous for me to mention, but all directly or indirectly the result of our having meandered on without any well-marked chart or plan of procedure.

Much of this illogical wandering or aberration has been due in modern times to the enormous influence or authority imposed upon us (in direct opposition to De Candolle's article 2, observe!) by now nameless and honourable dead! This weight of authority being now removed, however, we should, as I take it, lose no time in at once deciding on a clear, right, and straightforward plan of naming all the new plants henceforth to be added to our gardens. Of the past we may say "Kismet," since accomplished facts (and botanical records) "will na ding," as Burns has it; but let us not rest contented except in the sure and certain hope of a brighter future! Now comes the main question of a clear and generally acceptable plan. What I venture to propose is as follows; but I, of course, hold myself open to the fullest and freest alteration or correction in such an important matter:

1. That a list be drawn up by the Royal Horticultural Society, and published in the Society's Journal, of the names and addresses of the botanists and horticulturists who are Fellows of the Society, and whose special knowledge of plants, such as Orchids, Ferns, Palms, Conifers, Roses, Lilies, Narcissi, Iris, &c., is known.

2. That specimens of all plants about which there is or can possibly be any doubt, when brought before this Society, be submitted to the experts before mentioned.

3. That the National Herbaria at Kew and the British Museum be applied to by this Society, as the final botanical courts of appeal, and that all critical and doubtful specimens be deposited therein for future public reference.

4. By referring doubtful specimens, &c., to acknowledged experts or authorities in the first instance, as here suggested, many initial difficulties will be avoided, as only such specimens and questions will be submitted to the public herbaria as are worthy of preservation and elucidation by the officials of those institutions.

The available material in the way of books, published descriptions, and actual preserved specimens, now exists at Kew, or in the botanical department of the British Museum.

So far as Orchids are concerned at the present moment, it is a matter of regret, and in many ways actually a public loss, that we have two national herbaria instead of one. We must, however, make the best of existing circumstances, seeing that, in case of unforseen accidents, it may yet be well that all our national eggs are not contained in one basket!

Since the above was penned, I have read Mr. Dyer's admirable letter in the *Gardeners' Chronicle*, July 13, p. 46; and, as above shown, I quite agree in his main points, viz., that all wild species of Orchids should be named in Latin by any botanical specialist who is best competent to deal with these plants, and that all variations of a species be named by the raiser or owner in a popular way in good English, such popular names to receive the sanction of the Royal Horticultural Society's Floral Committee, or Orchid Committee, before they be passed on to the press or published in any way.

As I cannot hope to be present at the meeting of Orchid growers on Wednesday, July 24, I hope you will publish my convictions on this question.

We are told that the object of the meeting is "to consider the best course to pursue under existing circumstances, with regard especially to Orchid nomenclature."

Were it possible to me to attend, the following are the resolutions I should propose, viz.—

1. That this meeting of Orchid growers is of opinion that all wild genera and species of Orchids be named in Latin, and that they be figured and described by botanists in the usual manner.

3. That all variations not attaining to the usually acknowledged botanical rank of species be treated as mere specific variations, and that such be named in English, or in a popular manner.

3. That all bi-generic hybrids be named on a uniform plan in Latin—viz., by combining the names of the parent genera in the most simple and euphonious manner.

4. That all specific hybrids, whether natural hybrids, presumed to be such on good grounds, or well-known garden hybrids, be also named on a uniform plan in English (preceded by a sign of a ×), in the most simple and euphonious way.

5. That all mere cross-bred variations (= variety-hybrids of Sachs) and seedlings, varying as they do but slightly from their parents, be named in a popular manner—*i.e.*, in English (preceded by two crosses, ××), and not in Latin, as has heretofore too often been the rule.

6. That all names of all new plants shown before the Royal Horticultural Society be established or rejected at their discretion, and that no certificate or other award be granted to any plant not correctly named in accordance with the wishes of the Society's Floral or Orchid Committees.

There is one final point to which I should like to allude, and that is the great waste of energy which has and still results from our having had no definite central plan of registering our plant names. The most simple A.B.C. list of the plants as exhibited before the Royal Horticultural Society from its foundation until to-day would be invaluable, and I propose that henceforth such a list should be compiled on the same plan as that now generally adopted in cataloging the books added to our great libraries.

Another waste of brain force is less amenable to correction, viz., the continual re-figuring and re-describing of plants already well and definitely known, such as is continually going on in our periodical literature. Of course, private enterprise and competition cannot be interfered with, so that at present there seems no help for this superfluous overflow, as we may call it of figures and descriptions of precisely the same species and varieties.

I would finally like to suggest the more systematic use of the photographic lens in securing light and shade records of all the species and varieties of special interest, as brought before the Royal Horticultural Society, and more especially of all those to which any awards are made. Such records are quickly and readily obtained, and are also easily reprinted or multiplied; and if this method of obtaining records were systematically employed, I believe the sale of copies would fully recoup the Society for any preliminary outlay, even if ultimately absolute profits did not ensue. *F. W. Burbidge, M.A.*

THE CHISWICK ROSE SHOW AND CONFERENCE.

"Rosa" desires to thank you for your notice of the gratifying facts and yet greater possibilities of this epoch-marking event among Roses and rosarians. Those who went to see a first-class Rose show of the ordinary sort were necessarily disappointed. That was neither the desire of its promoters nor of those most anxious for a new start, and wider and further development of Rose beauty and culture. Even the big collections of all sorts, species, and conditions of Roses invited, and produced so liberally by so many of our larger growers, sufficed to break up the usual monotony of Rose shows, and produce something much more stimulating and profitable in their stead.

In addition to the stirring, almost startling, information conveyed in the papers and discussions brought before the Conference, which it is hoped may speedily be placed in the hands and heads of rosarians, this great muster of Roses new and old, common and rare, will mark a new departure in Rose growing and showing. Already it has had a twofold influence, which may be most briefly defined as the retention of old Roses, and the craving for new types, and it may be difficult to estimate on the spur of the moment whether the hieing back to the old loves or the evolution of new types or forms will prove the most potential factor in the march of improvement.

The retention of the old Roses is at least the work that lies nearest to our hands, and almost every Rose grower can practically, and, therefore, powerfully assist in this work by carefully preserving any unique species or varieties that they have in possession, or may have seen in the gardens of their relatives or acquaintances, and bringing these to the notice of the Editor, or Mr. Baker, or other botanist well-up in Rose lore. For while it may not be too literally true that "full many a Rose is born to blush unseen, and waste its sweetness on the desert air," it is literally true that not a few of our older favourites, such as the Velvet Damask, York and Lancaster, Maiden's Blush, the old Cabbage, common Moss, and even the more modern, if not more beautiful, Coupe d'Hébé, are either hidden away in unknown places, or languishing out their sweet lives in a hopeless struggle for existence against avaricious Laurels, Hollies, or Yews. The old rule, the ancient plan of fringing the fronts of overfed shrubberies with the vivid colouring of old-fashioned Roses, is responsible for the death of thousands of the latter; and I would entreat all who are returning to their old loves to provide them with beds, borders, or groups, all to themselves, and then furnish them with a fair field and as much and many favours in the form of good soil and rich food as their fragrance and beauty claim for them.

True, the old-fashioned Roses are hardy, and can endure hardness better than their modern relatives. But to have and keep them at their best, through a quarter of a century—the writer has a common Rose, at least forty years old, still yielding its annual seasons of beauty without fail—they should fare well, and have at least a small piece of ground and of the blue heavens all to themselves. With our improved knowledge and modes of culture,

not a few of our old Roses will probably exceed all their past records of strength, persistent fragrance, and beauty, and become at once more potent in the development and improvement of our coming Roses. It is pleasing to find, from the papers read at the Conference, as well as from editorial notes, of the actual results now being accomplished by hybridists, that neither the Dog Rose, in its many varieties, the Indian or China Rose, nor the Sweet Brier, now such well-known species, and others newer and rarer, are likely to be left out. In connection with the evolution of new and different Roses in the future, as well as for their beauty as climbers, and in rough tangled masses in shrubberies and borders, or as drapery for rocks and trees, there will probably be a great future for single and semi-double Roses. These, like single Dahlias, seem about to have their revenge for years of neglect. Who shall say what colour, constitution, foliage, form, and fragrance may not have been lost to cultivation through the ruthless suppression of the single or semi-double forms. As to foliage alone, a great deal may be done in the way of adding colour or variegation to it by way of variety. Few greens can match, perhaps none exceed, the many hued verdure of the Rose, while the normal form of leafage is also exquisite. But variety of colouring, from scarlet to gold, and from deepest green to white variegation, would but enhance, by their contrast, the normal green of Rose foliage; while, if Lord Penzance succeeds in making Rose leaves fragrant as the Sweet Brier, the gain will be immense. As one means to this, and it would be well to restore an almost lost, and get one of the sweetest relics of the past, viz., Sweet Brier hedges around Rose gardens or groups. These are extremely pleasant in their perfume, beautiful in the numbers of their bright blossoms, while their close proximity to the Roses could hardly fail in ensuring that chance intercrossing of species and varieties through the sure and certain help of the busy bees that might prove more fruitful in the production of new varieties than the efforts of amateurs, or even more skilled professionals. Be that as it might, there is no Rose bed garden or border that would not become the more pleasant and attractive through the close proximity of Sweet Brier, or of Roses that had borrowed its unique fragrance. *Rosa.*

New or Noteworthy Plants.

TWO NEW AROIDS.

Specimens of the two Aroids described below have recently been sent to Kew by Mr. W. Bull, of Chelsea. The Anubias is perhaps the more interesting of the two, since it is the first species of the genus recorded as being in cultivation. Its flowers are by no means showy, although the fruit is probably ornamental; but the variegation of the leaves ought to make it a useful plant for decorative purposes.

Anubias heterophylla, *Engler.**

Petioles 6—9 inches long, terete, glabrous, sheathing to about one-third the way up. Lamina 6—8 inches long, $2\frac{1}{4}$—$3\frac{3}{4}$ inches broad, oblong, lanceolate or ovate-lanceolate, cuneately rounded or slightly cordate at the base, acuminate at the apex, glabrous on both sides, except a microscopic puberulence on the midrib beneath; upper surface bright green, irregularly blotched with yellowish-green, under-surface pale green; midrib flat above, very prominent and rounded beneath; lateral nerves numerous, parallel, spreading and ascending, nearly straight in their lower part, curved near the margin, and united into an intramarginal nerve very close to the edge. Peduncles 4—5 inches long, terete, green, tinted with reddish-brown. Spathe 1—$1\frac{1}{2}$ inch long, ovoid or ellipsoidal in form, obtuse, with a very short apiculus, glabrous, pale dull green. Spadix a little shorter than the spathe, 10—13 lines long, shortly stipitate; the female part half as long as the male part, ovaries numerous, globose, with a short, stout style, and a simple flat stigma, two to three celled, with numerous anatropous ovules in each cell on a somewhat thickened axile placenta; male flowers composed of four to six anthers united in a column, anthers two-celled, opening by longitudinal slits.

Introduced by Mr. W. Bull from Borna, Congo, West Tropical Africa.

Anthurium cymbiforme, *N. E. Br., n. sp.*

Petioles rather slender, 12—16 inches long, $\frac{1}{6}$ inch thick, terete, neither channelled nor flattened down the face, geniculus about 1 inch long. Lamina, 8—10 inches long, 5—6 inches broad, cordate-ovate, shortly acuminate, the basal sinus $1\frac{1}{2}$—2 inches deep, very open, triangular, acute or obtuse, the basal lobes not overlapping, broadly and obtusely rounded at their tips. Midrib prominent on both sides, rounded above, acute beneath, with 3—5 rather slender primary nerves on each side; basal nerves 4—5 on each side, all quite free from each other, all prominent beneath, but only the two inner ones on each side prominent above in their basal part; the innermost nerve on each side ascending, and slightly and gradually curved, forming an intramarginal nerve about $\frac{1}{4}$ inch from the margin, all the others widely spreading, strongly curved as they approach the margin, and all excurrent at the margin between the base and middle of the leaf; upper surface bright light green, under-surface pale green. Peduncle 12—15 inches long, terete, bright green. Spathe 4—$4\frac{1}{2}$ inches long, 2 inches broad, ovate-oblong, acuminate, slightly cordate at the base, erect, concave, something like a broad and shallow boat; white, tinged with green, and very shining outside, ivory-white inside, not shining. Spadix a little more than half the length of the spathe cylindric, obtuse, salmon-pink, on a green stipes about $\frac{1}{4}$ inch in length. Flowers 1-10 inch in diameter.

This species belongs to the same group as A. ornatum, A. Lindenianum, &c., and on account of the ornamental character of its white spathes, relieved by the salmon-pink spadices, is well worth growing. It is probably a native of some part of Columbia or neighbouring regions, but Mr. Bull informs me that he has no record of the locality whence it was introduced. *N. E. Brown, Herbarium, Kew.*

Odontoglossum Hunnewellianum, *n. sp.*

This is a new and very elegant species of Odontoglossum, discovered by Mr. Oscar Bobisch, near Bogota, New Granada, and imported by Messrs. F. Sander & Co., of St. Albans. It is none of those troublesome natural hybrids, but a good species, of which a large number of plants were sent; but it is said to travel badly, so that the stock has been somewhat reduced in bulk. Its affinities are perhaps not quite clear. If you look at the lip, you immediately think of O. luteo-purpureum, for the shape is very similar; while the column-wings are much like those of O. Pescatorei. Mr. Sander compares it with O. Schillerianum, which it certainly resembles, though the lip and column-wings are rather different. The first flowers are not quite 2 inches in diameter, but will improve, as they are not equal in size to a wild one sent for comparison. The pseudobulbs are sub-compressed, 2 inches long, by $1\frac{1}{4}$ inch broad; the leaves about $\frac{3}{4}$ inch broad, and, at present, 6 to 8 inches long, though of course not fully developed. As to the raceme I can say nothing, having only seen detached flowers. The sepals are broadly lanceolate, acute, bright yellow, with numerous small dark brown spots; the petals similar, but a little paler towards base. The lip is obovate-elliptical, cream-white, with light cinnamon spots, margin crenulate, undulate, reflexed near base, but a little incurved above; crest consisting of a pair of diverging plates, with serrate margin, and toothed apex, and between them a smaller tooth. Column-wings broad, truncate, slightly crenulate, white, with few light cinnamon spots. It is named, at Mr. Sander's request, after H. H. Hunnewell, Esq., of Wellesley, Mass., U.S.A., an ardent lover of Orchids, and one of the foremost of American horticulturists at the present day. *R. A. Rolfe.*

* *Anubias heterophylla*, Engler, in De Candolle *Monographiæ Phanerogamarum*, p. 435 (1879).

LIQUID MANURE FOR THE GARDEN.

In continuation of some former remarks on this subject (p. 7), we next have to consider the character of soils benefited by liquid manure, and the reasons of success.

Experience has shown that liquid manure produces the most beneficial and striking effects when applied to light, deep, and sandy soils, resting upon a porous subsoil. However poor originally such a soil may be, after repeated applications of liquid manure it is eventually rendered capable of yielding remunerative crops. If the benefits of liquid manure were fully recognised, and the quick growth, early maturity, and superior quality of vegetables and fruit, cultivated by its aid, once established, there should be no difficulty in the disposal of a portion of arable farms for this purpose, and probably in these times of agricultural depression no more satisfactory course could be adopted.

The florist and fruit-grower should also seek aid from liquid manure; Roses, Chrysanthemums, and many other plants, well repay an occasional application, and in their greater luxuriance and more abundant bloom, show the beneficial effects. Tomatos, Cucumbers, Strawberries, Raspberries, Gooseberries, Currants, and similar plants, which delight in an ammoniacal dressing, would certainly reward the horticulturist's efforts in this direction, and if used in conjunction with mulching, the benefit would be enhanced.

For poor sandy soils the system of liquid manuring cannot be too highly recommended. Such soils are improved by almost any kind of manure, for as they are greatly deficient in plant-food, manures that contain even small quantities of phosphoric acid, potash, and nitrogen, must produce a beneficial effect.

The poorer the soil the more striking will be the effect which the manure produces, and the more dilute may be the manure before it ceases to yield any visible result. A liquid which is very poor in fertilising constituents, when applied to land which contains already potash, lime, phosphoric acid, and other mineral substances required by plants, though possibly even in deficient amount, may not make any perceptible impression, simply because it does not materially increase the store of the available plant-food in the soil; whilst the same liquid, when put upon land which contains no phosphoric acid whatever, and a much smaller proportion of lime, potash, and nitrogen than is contained in the liquid-manure, will produce a striking effect, by virtue of the increased supply of these ingredients.

The natural resources of mineral plant-food vary considerably in quantity and quality in different soils. In most soils, under ordinary cultivation, the more common fertilising materials, such as lime, magnesia, silica, phosphoric acid, and even potash, are found in such abundance, that we need not care to replace them in the measure in which they are carried off the land in the different crops removed.

There are a few classes of soils upon which we can continue to grow paying crops without restoring, in the shape of manure, the more valuable mineral ingredients, but where it is yet absolutely necessary to replace the nitrogenous food of plants.

In the application of liquid manure, it is usually better to dilute it greatly, if we wish to put it on poor soils or apply it to plants growing in pots. Diluted with much water, the manure penetrates a larger mass of soil, and so distributes more deeply and uniformly the fertilising matters, which is a great advantage in the restricted area of pot culture and in sandy loose soils, since such materials allow the roots of plants to penetrate thoroughly in search of food. In other words, sandy soils are excellent

vehicles for holding a diluted liquid manure in which the different plant-foods occur in an immediately available condition.

Character of Soils not Benefited by Liquid Manure, and Causes of Failure.

We now have to consider soils of a totally different nature from those of a sandy and loose texture.

Soils containing a large proportion of clay, especially if this is inclined to be stiff, are certainly opposed in their chemical and physical characters to those which are porous and sandy. Generally speaking, retentive and stiff soils contain not only the more common mineral ingredients which we find in the ashes of plants, such as lime, magnesia, soluble silica, sulphuric acid, &c., in sufficient abundance; but also the more valuable mineral substances, among which we may place potash and phosphoric acid. Such soils also possess, under good cultivation the vegetable remains left in the ground in the shape of roots and leaves from former crops, which yield abundance of organic plant-food for subsequent use.

It is true that stiff soils are not always so productive as they should be, but as a rule they contain within themselves all the elements of fertility, and it is only for want of proper mechanical cultivation that their crop-yielding powers are not more fully developed.

It may possibly be asked, if clay soils abound in available fertilising substances, how is it that upon them ordinary farm-yard manure is employed with advantage? To this question it may be replied—farm-yard manure in the first place is a more perfect manure than liquid manure, inasmuch as it contains a considerable proportion of soluble and insoluble phosphates, which are very deficient in liquid manure; in addition, its very bulkiness performs important mechanical functions in the soil that cannot be realised by the use of a liquid element. In the second place, we may observe that the retentive physical characters of clay soils preclude the young plants from availing themselves of the total amount of fertilising matters dispersed through the whole mass of the soil.

In fact, plants growing on stiff and tenacious soils feed only upon a very small proportion of the bulk of soil; whilst those grown on a porous sandy soil penetrate by their roots to a greater depth, and in every possible direction, and so avail themselves of the manuring constituents uniformly distributed amongst a large bulk of soil by the agency of such materials as liquid manure. On the other hand, decided benefits result on clay soils from a liberal dressing of long stable dung, because only a small proportion of the soil is actually manured; and because, by the very bulk of the manure, the physical and chemical properties of the land are so altered that in reality the growing plants feed upon a new and artificially-formed soil.

We have further to remember that all clayey and tenacious soils are generally more than sufficiently wet during the early part of the year; the additional quantity of water supplied in liquid manure, therefore, only renders them wetter still; and so much heat is absorbed during its evaporation, that the injury done to the land by the resulting cold would scarcely be counterbalanced by the small proportion of fertilising matters supplied by this system. Again, soils that are inclined to be stiff are only rendered more close and difficult to work, by a heavy dose of liquid manure.

It has been observed in the experience of those who profess to have used liquid manure with some degree of profit on clay soils, that the operation must always be preceded by thorough draining, subsoil ploughing, or digging; deep cultivation, clay burning, and liming, each of which processes is well known to effect radical changes in the constitution and texture of heavy soils.

"Necessity for a Manure-tank."

In conclusion, we may remark, that money and labour expended in the construction of a liquid-manure-tank are well spent, and will yield more than a commensurate return; and a gardener who buys costly artificial manures, or the so-called special manures, but does not look carefully after the liquid manure of the establishment, nor study the best mode of its application, is not acting with economy, for he buys the same chemical ingredients at great cost which he might have for the mere trouble of collection; and as he must of necessity give water to his plants during the hot summer months, he may as well feed them by one and the same operation. *John J. Willis, Harpenden.*

HOLLYHOCKS.

The accompanying illustration (fig. 12, p. 69) of Hollyhocks at Heckfield was engraved from a photograph by Mr. Mason-Good, of Winchfield. The artist designated it "A Study of Hollyhocks." Though the picture consists of one plant only, Mr. Wildsmith, in reply to our request for particulars, says, that "Last year it formed one of a row of Hollyhocks standing at a distance of 12 feet apart at the back of border of herbaceous plants, and near to other tall-growing plants, such as Bocconia cordata, perennial Sunflowers, Actea spicata, and Michaelmas Daisies. No plants could possibly have done better, the spikes on some of the plants being more than 11 feet high, and beautifully flowered. Each plant was allowed to carry two spikes only, the smaller spikes seen in the picture being in reality a branch from the shorter spike. For reasons that will presently appear, the station of each plant had special preparation, the old soil being removed to a depth of 2 feet, and replaced with good loam of medium texture, 1 bushel of well-rotted cow manure being mixed with 5 bushels of the loam. The plants were well-planted and made firm, and a mulching of manure was immediately put on the ground over the roots. The reward for this amount of trouble was the pleasure of witnessing the daily progress of the plants—not a speck of fungus, and such foliage and flowers as could not be without some such treatment. By reason of my previous failures through the Hollyhock fungus, I had for years discontinued to grow them, and this year reckons as the third of their revived cultivation in these gardens, and with, as yet, no re-appearance of the dreaded enemy—a fact which I think I am right in attributing to more liberal supplies of loam and manure than heretofore. Plants are, like ourselves, more liable to attacks of disease when constitutional vigour is low than when in robust health."

ROSES.

THE PROTECTION OF ROSES IN WINTER.

The problem as to how best to protect tea-scented and other tender-wooded Roses in cold climates is by no means an easy one to solve. Were there a natural "line of safety" to be found at a short distance above the ground, one source of danger might easily be avoided by mounting our Roses on standards of the required height; but unfortunately no such "line of safety" exists. It is certainly true that on clear calm nights, when the keenest frosts invariably occur, the air is coldest and dampest at the ground-level, and gradually gets less cold and humid the farther it is removed from the ground—at all events, up to a considerable height. The differences in temperature and humidity, however, between the air on or near the surface of the ground and that at a few feet above it, are usually but slight, and would by no means sufficiently account for standard Teas escaping with but slight injuries when the dwarfs were seriously damaged. Moreover, in the case of Roses and other plants, their leaves and shoots become chilled by nocturnal radiation very nearly, if not quite, to the same extent at both levels; and it is through this direct loss of heat by radiation that during a killing frost the most serious injuries are undoubtedly inflicted.

Standard Teas, as a rule, suffer considerably more than those on dwarf stocks, as they are not only exposed to the radiation frosts above referred to, but also to a much greater extent than the latter to cold winds; indeed, it often happens that Tea Roses pass unhurt through moderately mild winters, only to be crippled by the cruel blasts of the following spring. In fact, the shoots of Roses generally, including many of the Tea-scented varieties, will stand a considerable amount of ill-usage, both from calm frosts and keen winds, provided the plants are at the time at rest. But when in an excitable and growing condition, they are naturally very much more tender. For this reason standards are not to be recommended for cold districts. Besides which, during very severe winters, all but the hardier Teas growing on standards are killed outright, whereas dwarf Teas under the same conditions are only cut to the ground, and in most cases ultimately recover from the rough usage they have received.

Nevertheless, there occasionally occur remarkable exceptions to this rule, for which it is not altogether easy to account. For instance, Mr. Benjamin R. Cant, the well-known Rose grower, wrote me, in March last, that the standards in his nurseries at Colchester, which were altogether unprotected, had gone through the winter better than the dwarfs, although the latter were covered with Pea-straw. Mr. Cant thought that this might be due to the soil having remained unusually wet throughout the whole of last winter, and no doubt under such conditions the lower growing plants would suffer rather the most. But, besides being extremely wet, the early part of the winter proved also singularly mild and open; so that later on, when sharp frosts suddenly occurred, the unprotected standards, whose growth by exposure had been in some measure arrested, and the wood of which had become fairly ripened, were better able to withstand them than the dwarfs under the Pea-straw, which could previously have received scarcely any check whatever. This is confirmed by what took place in my garden here at Berkhamsted, where all the transplanted Teas—and I had occasion to remove a great many in November—stood the winter far better than established plants of the same varieties. In every instance the difference was most striking.

Hence arises the difficulty in protecting delicate Roses. In extreme weather the protection cannot well be too complete, while, on the other hand, in quite mild winters it cannot well be too slight. Unfortunately, it does not do to wait until a severe frost sets in, for when once the shoots get frozen it would be very unwise to meddle with them. Whatever protection is given must, therefore, be applied at the beginning of the winter. The plants have on the one hand to be shielded against injury from calm frosts, biting winds, and heavy falls of snow, and yet at the same time they must not be coddled too much, or the remedy will in ordinary seasons prove worse than the disease; nevertheless, it is desirable to retain uninjured as much of the previous year's growth as possible.

The compromise I recommend and practice is as follows:—In the first place, whatever may become of the upper shoots, the lower ones must be completely guarded; for should the winter turn out a very cold one, the plants, if not killed entirely, will at all events take the best part of the following summer to recover themselves. To do this they should—as the Rev. A. Foster-Melliar recently advised at the Rose Conference—be earthed up like Potatos. It is surprising what a splendid non-conductor, and consequently protection against cold, earth is, and more particularly dry earth. When frozen it is still more effectual. During a prolonged frost I find that my thermometer at 1 foot deep in the ground scarcely changes at all, night or day, from week's end to week's end. To protect the upper part of the plants, the shoots should be drawn together and secured to a firm central stake, and lightly thatched with sprigs of Gorse, which has proved with me very much drier, neater, and more durable than Bracken. The heads of the standards

may be protected in the same way, only using longer stakes. When the worst of the winter is over, I remove the Gorse on the south-west side of the plants, so as to admit light and air, and gradually prepare the shoots for being completely exposed.



Fig. 12.—A study of hollyhocks. (see p. 68.)

Delicate Tea and Noisette Roses on walls, such as Maréchal Niel, should be earthed up at the base, and covered over with fine cotton netting. *Edward Mawley.*

Fortune's Yellow Rose.

For some reason difficult to explain, this Rose has not risen high in the estimation of the gardeners, and is met with only occasionally; yet I will venture to say that there is no more interesting climbing Rose grown. It has the distinct characteristics of a long tapering bud and a peculiar colour, which are points sure to arrest attention; and, apart from these, it is a free grower in sheltered situations out-of-doors, and flowers well. There is, therefore, no reason why it should not be more generally grown. It has one or two drawbacks, certainly; its flowers are not very full, and its season of flowering is not so long as that of some others, but its free growth and floriferous character in my estimation make up for these defects. The plant is easily forced into flower at an early date, and is equally suited for unheated houses as for those that are heated. In February last I had a plant of this Rose in flower in a house where the day temperature for the previous two months did not exceed 55°, and at night was frequently as low as 40°. For many years a plant of this Rose was trained to a pillar in a large unheated house, and here it was always the first in flower out of a number of good sorts, and was one that was always in demand by the florist, for with every order for Roses, came the request to send more flowers of Fortune's Rose. I ought, perhaps, to say that as a bouquet flower it is only of value in the bud state. This Rose will do well in the open if placed against a south wall and sheltered from cold winds—the soil should not be too clayey; according to my experience it will grow freely on the Seedling Briar, as upon its own roots. With regard to own root plants, I have found that half-ripened shoots will strike as freely in the autumn as a Pelargonium. Some persons fail to flower the species satisfactorily because they prune it at the wrong time of year. It should be pruned as soon as it goes out of flower, when all the shoots which have flowered should be cut back close to the stems, and all the best growths made during the summer preserved, especially the thick long shoots, as these produce a flower at every bud the following season. *J. C. C.*

Orchid Notes and Gleanings.

BIFRENARIA ATROPURPUREA, *Lindl.*

A plant of this interesting and pretty rarity is flourishing in the collection of the Glasnevin Botanic Garden, as I know by a raceme received from Mr. F. W. Moore. I had not seen it alive before, and was especially pleased to make its acquaintance in this state, for it is one of those species which are extremely difficult to dry well, all colour vanishing in the process. The flowers are of a dark purple hue, with brighter coloured lip, and are very fragrant. The species is a native of Brazil, and was received by Messrs. Loddiges, of Hackney, in 1828, having been obtained at some distance from Rio de Janeiro. It flowered in July and August, 1832, remaining long in perfection. It was originally described and capitally figured as Maxillaria atropurpurea, Lodd., *Botanical Cabinet*, t. 1877, and was transferred to Bifrenaria, by Lindley (*Bot. Reg.* xxix., 1843, *Misc.*, p. 52). Its nearest ally is probably B. inodora, Lindl. (which, in spite of its name, is often rather fragrant), but the two are quite distinct in character, as well as very different in colour. *R. A. Rolfe.*

Odontoglossum Oerstedii majus.

This plant is one of the easiest to cultivate, and as it may be grown in shallow pans, and placed on a shelf or suspended from the roof near to the glass, a goodly number may be accommodated in but little space. It was discovered by Warscewicz, about forty years ago, on the mountains of Costa Rica, at some 7000 to 9000 feet elevation, but it was not until some sixteen years ago that it came to this country in a living state. From the altitude at which it grows, it may readily be imagined that it requires cool treatment, and we find that it succeeds best when grown in shallow pans of a small size, suspended from the roof, or stood upon a shelf near the glass in a position to obtain the full light, but shaded from the hottest sunshine. The drainage must be kept in thorough order, and the potting material which suits the plants is fibrous peat and living sphagnum moss; this material should be used sparingly, for these small-growing kinds in particular require but little material about their roots, and this should be kept in a sweet and fresh condition. The best time to repot this species is just after the flowers have faded, and before new growth appears, and this operation must be carried out in a careful manner, in order to preserve the living roots. This is of more consequence than some growers appear to

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consider, and we have recently noted in a collection of Masdevallias of the Chimæra section the dire consequences of a mutilation of roots in re-potting. Should the plants after blooming not require larger pans, they will be much benefited by a renewal of soil, so that the older soil must be carefully removed and replaced by new, and care should be taken, both in re-potting and renewing the soil, to keep the plant elevated upon a cone-like mound above the rim of the pot or pan. In its native country it is said to select low-growing trees, in the moss-covered branches of which the plants nestle, that dense fogs daily envelop them, and that the temperature, at all seasons low, falls very low during the night; so that in this country during the growing season the plant enjoys an abundant supply of water, and during the winter season it must never be allowed to get dry, or bulbs will shrivel, and the plant will suffer in health in consequence. The winter supply of water must be much reduced, but the plants must be kept in a genial moist condition.

Insects are very injurious to these small-growing kinds in particular, and, therefore, it behoves the grower to carefully eradicate them by washing with sponge and water. "*Orchid Album*," *April*.

Cattleya intricata ×, *Rchb. f.*

A slight correction should be made in my note on this plant, at p. 38. Mr. Little now tells me that there were two plants, both of which, however, are in his collection, having been obtained from Messrs. Hugh Low & Co., when originally described. Mr. Little also points out that the difference of colour pointed out may have arisen from cultivation, as he has observed in other cases. *R. A. Rolfe.*

Eriopsis rutidobulbon

is a splendid species, with dark evergreen foliage. The pseudobulbs are much wrinkled, or rugose, whilst in colour they are of a dull purplish-black; they bear on the summit a pair of broadly lanceolate strongly ribbed leaves, and the spike issues from near the base of the growth. It attains a length of about 18 inches, and bears a long drooping raceme of handsome flowers, which are quite distinct in the arrangement of colours from most other members of the Orchid family. The sepals and petals are dull orange-yellow, margined with reddish-purple; lip white in front, the base being dull orange, dotted with purple. The inflorescence appears in the autumn months, and the flowers continue in beauty for a very long time. This plant requires to be thoroughly established before it can be induced to flower, but when it becomes vigorous it blooms annually. This species thrives best when treated to basket or pot culture, and the plant should be re-potted just as the young growths begin to appear; care, however, must be shown in performing this operation, for the plant suffers greatly if its roots are injured to any extent. Should the plants not require re-potting, they will be much improved by having the old soil removed, and replaced by fresh and sweet material, and the best we have found for this plant is good peat fibre, from which all the fine soil has either been beaten or shaken. This must be used in such a condition that it may be readily broken up, and care must be taken not to use it when wet. Our usual practice in preparing composts for Orchid potting is to pull the turfs to pieces, and shake away the fine portion of the soil, then place it in a warm position in the potting-shed, or similar place; this should be done some time before the compost is required, and thus some material is always ready for use and in proper order. The drainage for this plant must be maintained in a perfectly free and open condition, and the plant should be hung near the roof-glass to ensure a good amount of the sun's influence; but avoid too close contact with the roof-glass in the winter months, as the cold penetrates to the plants very quickly, and moreover causes the temperature to fall too rapidly. As might have been inferred by the elevation at which it grows in a wild state, we find the temperature of the cool end of the Cattleya-house to suit it admirably. "*Orchid Album*," *May*.

Calanthe biloba.

We learn from Mr. Dyer that it (Calanthe biloba), thrives well under the same treatment as C. veratrifolia. For plants of this section we prefer the side tables, in order to give them the full benefit of the light, but they require shading from the hottest sun. It will require a liberal supply of water during the flowering and growing season, and even when at rest, in the dull and gloomy days of winter, the root must not be allowed to suffer for want of a fair share of that element, but the soil should always be kept in a friable, moist condition. Neglect of this advice will cause the leaves to shrivel and become disfigured, and the flower-spikes will be less and inferior in quality. This requires attention, as we frequently observe that many Orchids deteriorate in beauty through not receiving proper care.

All the plants of this section of Calanthe thrive best under pot culture, and the pots require to be well and thoroughly drained; but avoid over-potting, which is the great besetting sin of unskilful growers. For soil we prefer a little fibrous peat, some turfy light loam, leaf-mould, and some sharp sand; this should be thoroughly incorporated, and in potting, some small nodules of charcoal introduced, will prove highly advantageous. The best season for re-potting Calanthes is just as they start into fresh growth, which is usually soon after the flowering season. As this operation requires care in its manipulation, whatever old or sour soil may be about them should be removed, and, if it appears bad, shake it all away, carefully washing the roots in clean water, in order that they may be saved from injury. When re-potting is necessary, the plant will require to be put into as small a pot as its roots will allow without breaking them, and the plant must be kept in a shady position, and water given somewhat sparingly until root action commences, and when it has again become established, transfer it to a larger pot if necessary, and treat it as previously recommended; but, under any circumstances, we prefer to keep these evergreen species of Calanthes somewhat more shaded than usual for a short time after re-potting. "*Orchid Album*," *May*.

Cypripedium œnanthum

is a charming variety, with evergreen foliage, which is nearly 6 inches long, leathery in texture, and of a dark green hue, faintly tesselated with lighter green. The scape is terminal, and rises from between the leaves, and bears a single flower of medium size; the dorsal sepal is white, green at the base, with violet nerves, marked, as in C. insigne Maulei, with rows of purple blotches towards the base; lip port-wine colour. The blossoms are freely produced when the growth is nearly mature, so that its time of flowering is varied, according to the time of year the plant makes its growth, and these blooms continue in full beauty for six weeks, or even more, and this, too, without any injury to the health of the plant.

We have, upon previous occasions, given instructions in the pages of the *Album* as to the cultivation of this section of the Cypripediums—that is to say, that we find the best mixture for them is good fibrous peat, from which all the fine part has been shaken, some leaf-mould and fresh living sphagnum moss, the whole to be chopped well together, and thoroughly incorporated. The pots should be filled three-parts full of drainage material, and covered with some rough peat-fibre or living sphagnum moss; this will prevent the soil from running between the potsherds, and choking the free escape of the water; and the plant should sit upon an elevated mound of soil, raised some 2 inches or more above the rim of the pot. When newly potted, water should be given somewhat sparingly at first, increasing the supply as the new roots occupy the soil, and when the plants get fairly established a liberal supply is necessary, as this variety is both free in growth as well as in root development. We find the temperature of the East India-house suits this variety remarkably well, but find that it loves a shady situation, but yet it requires as much light as possible during the whole year; it should, therefore, be placed on the side table near the glass. This treatment produces strong and vigorous growth; indeed, success in the cultivation of this genus depends upon the amount of light given.

The hybrid Cypripediums appear to be of free vigorous constitution, and if kept free from the attacks of insects, increase in size rapidly, and they may be freely increased by division; this operation should, however, be undertaken when the growths are mature, and the shoots should all be taken off with roots. "*Orchid Album*," *May*.

Cypripedium Stonei var. acrosepalum.

About a year ago this was exhibited at a meeting of the Royal Horticultural Society by Messrs. Seeger & Tropp, of East Dulwich, and as the specimen was afterwards sent to Kew, I noted it in these columns, August 11, 1888, p. 162. Its peculiarity seemed to lie chiefly in the lateral sepals, which were quite free, as in the North American Cypripedium arietinum. Commenting on this, I remarked:—"I do not think the character likely to be permanent . . . for in an expanding bud, just above the flower, the lateral sepals were in the normal connate condition. . . . Cultivation alone can test the permanence or otherwise of these characters."

Messrs. Seeger & Tropp now send another flower, remarking, "You will notice both sepals are very much prolonged, as they were last year, but the lateral sepal is not this year divided, as previously." Such is the case. In the normal condition of the species both sepals are broadly ovate, but in the flower now sent the upper sepal is 3 inches long, and only ½ inch broad, while the lower one is 2½ inches long and 1 inch broad. Last year I thought this character was in some way correlated with the dialysis of the lateral sepals, but now it is evident that it is independent of that peculiarity, though probably both are due to the same cause. It is evidently an abnormal condition of the species, like the variety C. platytænium, and may prove to be equally permanent. Of this latter there is a flower in the Kew Herbarium, in which one petal has reverted to the normal condition of the species, while the other is precisely that of this peculiar variety. *R. A. Rolfe.*

ANNUALS AT CHISWICK.

The usefulness of this showy class of plants is just now admirably illustrated at the old gardens, where a somewhat extensive collection, from seed principally supplied by Messrs. Barr & Son, has been planted, serving to remind us what freshness, beauty, variety, and richness of colour may be introduced in the flower garden by the liberal and judicious employment of such subjects, and the important part they may be made to play in floral embellishment outdoors.

This particular trial may also serve to remove some misconceptions which exist in the popular mind as to the duration of these plants. By many they are regarded as short-lived and weedy, and their cheapness and the small amount of skill requisite to their successful culture tend, it may be, to their detriment in public estimation. To refer briefly to the objections just cited: 1. "Short-lived."—It is a matter of considerable importance that a large proportion of the best kinds continue beautiful until the close of the season, in this respect having a considerable advantage over the usual run of bedding plants. 2. "Weedy."—Perhaps they are, in some cases! 3. "Their cheapness, and the small amount of skill required in their cultivation."—These are qualifications that should render them thoroughly popular, and lead to their more extended cultivation. A strong point in their favour is, the variety of uses to which they may be put for decorative purposes, being acceptable in this way for borders, lines, masses, beds, rockwork, vases, &c.

To record briefly a few notes made on a recent inspection:—

Nemophilas.—These are all exceedingly beautiful, their height being nearly uniform, and the colours exhibiting strong contrasts. They are admirably adapted for sowing in circles or ribbons, especially in autumn, for spring flowering. N. atomaria oculata, blue, blotched with black; N. a. elegans, pure white, with dark chocolate centre; N. insignis purpurea rubra, puce-purple, a new colour in this genus; N. discoidalis vittata, velvety-black, margined pure white; N. insignis grandiflora, white, veined and blotched violet, large and handsome; N. insignis grandiflora alba, pure white.

Saponarias. — Continuous-blooming, compact, dwarf hardy annuals, effective for beds, edgings, and spring gardens; S. calabrica, rich pink.

Venus' Looking-glass. — Very pretty for beds, baskets, vases, rock-work, and borders, large-flowered, rich blue, and large-flowered white.

Venus' Navelwort.—An elegant plant, with pure white flowers and silvery foliage; pretty for edging purposes.

Virginian Stock.—Charming dwarf, hardy; sown from February to June. This pretty annual produces a gay display in the period between the spring and summer flowers.

Oxalis valdiviana (hardy perennial).—Bright yellow. All the varieties in this class are exceedingly pretty.

Candytuft (*Iberis*).—Beautiful hardy annual; this is a plant of fine habit, profuse blooming, and remains long in beauty, adapted for ribbons, lines, and flower-beds; C. Normandy, soft lilac, very free and beautiful; C. Dunnettii, rich crimson, very fine; C. new hybrid, carmine—an acquisition; new hybrid varieties in mixture are also good; C. Rocket, fine spikes of white flowers; C. sweet-scented, white, having gracefully cut foliage; C. New White Spiral (Dobbie) is a decided acquisition.

Silene.—All exceedingly effective and beautiful, some for rock-work, others for beds, and the taller sorts for borders and to cut from.

Leptosiphon.—Varieties of chaste beauty in flower and foliage. For small beds, edgings, rock-work, and massing for spring and summer decoration they are simply invaluable; L. roseus (rich rose) is a very beautiful variety.

Nolana.—Pretty hardy annuals, of a trailing habit, and admirably adapted for rock-work, hanging-baskets, vases, flower borders, &c.; N. atriplicifolia alba, pure white; N. atriplicifolia, blue-violet and white—two acquisitions.

Anagallis.—Beautiful half-hardy annuals; dwarf, effective as edgings, beautiful as pot-plants, and valuable for the rockery; A. grandiflora sanguinea, bright ruby, beautiful; A. g. Breweri, rich intense blue flowers.

Eutoca.—A showy and hardy class; E. viscida, bright blue—very good.

Layia.—Beautiful and hardy; L. elegans, the ray florets yellow, bordered white—very beautiful; an acquisition. L. glandulosa, ray florets pure white, 1½ inch across—beautiful.

Adonis.—Beautiful hardy annuals, very effective in borders; A. vernalis flowers in spring, A. æstivalis in summer, and A. autumnalis in autumn.

Gilia.—Very fine when grown in masses; much prized for their earliness, and for rock-work. G. laciniata, deep lavender-blue—fine bedding plant; G. liniflora, white, a very beautiful variety—an acquisition; G. tricolor, white, lilac, and purple; G. rubra-violacea, red and violet; G. alba, white and purple.

Gypsopila.—Plants of graceful, slender growth; G. elegans, a rose-coloured sort, is valuable for table bouquets; and G. muralis, pink, for rock-work and edgings.

Eschscholtzia.—Remarkably showy and hardy. The bright colours, dwarf habit, and continuous blooming properties of these, admirably adapt them for beds, ribbons, edgings, and borders. E. Mandarin, bright scarlet, and orange, is very striking; E. tenuifolia, primrose, a pretty dwarf plant, is an acquisition; E. Rose Cardinal, rich rose-purple, is extremely beautiful; E. crocea aurantiaca is, perhaps, one of the richest yellow flowers grown.

Viscaria.—A beautiful and effective class. It is scarcely possible to over-estimate the brilliant effect in beds, lines, or masses of the rich magenta flowers of V. cardinalis. V. cœrulea, blue; this fine variety produces a good contrast with V. cardinalis.

Hawkweed (Crepis).—These are very showy, effective in beds, on rock-work, in lines, and masses; the yellow-flowered variety is undoubtedly an acquisition.

Clarkia.—These are very effective border plants, being elegant, showy, and profuse-blooming. C. pulchella and its varieties are amongst the prettiest of hardy annuals, combining a fine habit with great profusion of bloom; C. p. Mrs. Langtry, crimson, with a broad white margin. The Tom Thumb varieties, rose-crimson, and crimson edged white, are dwarf and compact, good for beds, and effective in marginal lines; the new varieties, C. elegans, Purple King (purple), and Salmon Queen (rose), are remarkable for their large double flowers.

Linaria.—Very pretty, and free-flowering, suitable for beds, mixed borders, and to cut for bouquets; L. reticulata aurea purpurea, rich purple, with a bright orange lip, borne in dense clusters on a short spike is an acquisition; L. bipartita alba, pure white; L. b. splendida, rich deep purple.

Schizanthus.—Few plants are more attractive and beautiful than these when well grown. In what may be called the "halcyon days" at Chiswick grand plants of S. retusus—rose and yellow—used to be grown in vases. S. pyramidalis compactus, violet-purple, spotted black; S. grandiflorus albus, large pure white flowers—sulphur eye; S. papilionaceous, spotted and laced purple and yellow, shading to crimson.

Lupinus.—The Lupins are all handsome and graceful. The tall varieties are effective in borders, the dwarf in beds. L. nanus, blue and white—beautiful; L. nanus albus, pure white—both acquisitions; L. hybridus atro-coccineus, crimson-scarlet, white tipped—very handsome.

Calendula.—Very showy and hardy. In mixed flower borders, shrubberies, and to naturalise in semi-wild places, these are exceedingly attractive and useful. C. officinalis superba, rich orange—an acquisition; C. o. Meteor, apricot-orange. This variety is remarkable as having a white line on each petal. C. pluvialis, pure white large flowers—a good cutting subject.

Centaurea cyanus.—These are popularly known as the Cornflower. The bright blue variety is largely used in Covent Garden for bouquets, wreaths, &c.—very decorative border plants, and valuable for wild gardens; C. cyanus, rose, was noteworthy also.

Collinsia.—These are very effective for flower garden decoration. Sown in March and April, they are decorative in summer. For spring gardening sow in August, and the display in May is a charming one, the flowers being larger, more beautiful, and lasting longer than in summer.

Calandrinia, charming flowers; C. speciosa, rose-purple; C. s. alba, white; C. grandiflora discolor, a beautiful variety, rose-pink—useful for edgings, small beds, and rock-work.

Whitlavia.—The fine Gloxinia-like blossoms of these recommend them for flower beds and border decorations during both spring and summer; W. grandiflora, fine violet-blue; W. alba, pure white.

Lavatera.—Exceedingly valuable plants for distant effect in masses and for large borders; L. trimestris, rose, striped pink.

Poppy (*Papaver*).—These remarkably showy hardy subjects give a brave display of colour. P. Danebrog (Danish Flag), brilliant scarlet, each petal stained white, perhaps the most beautiful of new hardy annuals. P. umbrosum, flowers intense crimson, each petal having a conspicuous glittering black blotch—a most beautiful variety. The now well-known and beautiful Shirley Poppy was noted as good. P. Snowdrift (Novelty Seed Company)—appropriately named—is a beautiful pure white, double-flowered form. Yet two other doubles, French, Steinforth, pink and white; P. Black Pæony, having flowers of satin-like lustre.

Palava flexuosa, an elegant plant, covered with small saucer-shaped rose-pink flowers. Charming in small beds, on rock-work, in rustic baskets, and for pot culture.

Mignonette.—Covent Garden Favourite, a large flowering sort. May be noted as a good thing, especially valuable for pot culture.

Kaulfussia.—A pair of beautiful varieties, may be found in K. amelloides atro-violacea, having intense violet flowers, and K. a. kermesina, rich crimson, Effective plants in beds, ribbons, and mixed borders.

Asperula azurea setosa.—A charming light-blue flowered species.

Athanasia annua.—Very effective, with its clusters of ball-shaped golden blossoms, which have a beautiful appearance when used for table bouquets.

Mathiola bicornis (night-scented Stock) should be grown for the delicious perfume emitted by its flowers. Those in search of good bee-flowers will find favourites in those pretty hardy annuals—Limnanthes Douglasii grandiflora, bright yellow edged white; and L. Douglasii alba. They are withal very effective plants for spring and summer decoration, and succeed in damp or shady situations.

Œnothera Drummondi nana, bright yellow, is a continuous blooming beautiful variety. While O. bistorta Veitchi, pure yellow-spotted crimson, is an acquisition for small beds and rock-work.

Amongst sweet-smelling flowers, Amblyolepis setigera, bright yellow, holds a good place. A fine border plant.

Sweet Peas in variety, give an ever-welcome glow of colour. Mr. Eckford's varieties are good, as usual.

Campanula macrostyla, violet, is a charming subject. Alyssum odoratum, white, is a beautiful summer-bedding annual.

Those charming hardy annuals, Nasturtiums, may be recorded as being unrivalled for beauty, effect, and utility. In the "Tom Thumb" group we have as most noteworthy: Empress of India, flowers intense crimson-scarlet, with a rich velvety gloss; Lady Bird, yellow, veined ruby-crimson—very free; Ruby King, ruby-rose, very beautiful; Spotted King, yellow, spotted crimson, beautiful, and cœruleum roseum, beautiful peach.

Convolvulus. — The varieties of C. tricolor are amongst the most showy of hardy annuals. In beds, flower-borders, and on rock-work, their handsome flowers are seen to great advantage. C. t. monstrosus is a deep violet-purple, a beautiful variety; C. t. Rosy Queen, rose, centre white, edged violet; C. t. albus, silky white; C. t. striatus, blue and white.

Stocks constitute a showy feature, the two best things in this way at the time of our inspection being: No. 1 Dwarf German ten week (Dippe), purple, one plant having fourteen well-clothed compact spikes of purple flowers; Victoria Bouquet (Dippe), blood-red, a true strain.

Venidium calendulaceum, we noted in a frame; it produces bright orange Gazania-like flowers, and is exceedingly effective in large beds, on rock-work, in rustic baskets, and mixed borders.

Calliopsis.—Valuable hardy annuals, profuse and continuous bloomers, and are among the most elegant and effective for border decoration and to cut for filling vases, and for bouquets. C. bicolor atro-sanguinea, very dark crimson; C. b. grandiflora, yellow, crimson centre. X.

Dendrobium nobile album.—In the Orchid display arranged at the Paris Exhibition by Messrs. Seeger & Tropp, of 112, Lordship Lane, East Dulwich, this chaste variety, which may now be seen at their establishment, opened for the first time. The flowers are large and clear white, the labellum having a rich maroon blotch at its base, with a sulphur-yellow area in front. It is a most elegant variety, and the long footstalks of its flowers, by separating the clusters, add to its beauties. *Le Moniteur d'Horticulture* announces its intention to issue a coloured plate of it.

The Bulb Garden.

LILIUM LONGIFLORUM VAR. HARRISII.

Very few members of the genus Lilium have attained to greater notoriety in such a brief space of time as the "Bermuda Easter Lily," as this variety is popularly called; and fewer still have barely deserved the one-half that has been said of them as to their adaptability for pot-culture and forcing; for undoubtedly the whole of this family are never better suited, or more perfectly happy, than when properly planted in the open ground and allowed to establish themselves. Some few are not sufficiently hardy for the open ground, therefore pot culture must be given them. But it is not pot-culture pure and simple that does them harm, for this is done invariably by abusing them in heated structures, and neglecting them after they have flowered—and Lilies, of all plants, are the least capable of enduring this. There are, however, exceptions to every rule, and the subject of these remarks is, beyond doubt, an exception among its kind, for not only do we find it singularly well suited both to pot-culture and forcing alike, but we also find it not nearly so well suited for outdoor culture in the majority of English gardens where Lilies are grown somewhat extensively, as the majority — indeed, those who would have the greatest return, for the flowers of this plant—must of necessity grow it in pots and under glass, while the forcing part of it is optional to all.

Though considerable stir has been made during the past five years, it has never found its way into our cut-flower markets in such formidable quantities as during the recent Easter season; in fact, it has simply been overdone, and many thereby disappointed, for the simple reason that its handsome blossoms have virtually been given away instead of sold. When first announced, many were naturally very shy of the actual existence of this reputed perpetual flowering Lily, the writer among the number, for the reason that he was asked only 5*s.* for a supposed bulb of it, which was about a foot high, carrying one flower, and which was undoubtedly nothing but a small representative of our old friend L. longiflorum eximium, and there are still those who doubt the existence of L. Harrisii, or rather there are those that regard it as synonymous with typical longiflorum. Those, however, who know this Lily can enjoy a smile at the expense of those who cannot be convinced of the existing distinction between these two Lilies, for while Harrisii will form strong bulbs, attain a height of upwards of 6 feet, and carry a dozen or eighteen flowers, typical longiflorum rarely attains more than 2 feet high, while four or five flowers is a really good result from a single bulb; nor is this the only distinction, for a practised eye can easily pick them out by the bulbs alone; the true Harrisii is decidedly conical towards the apex, the individual scales more uniform in shape, while the peculiar mode of doubling, as seen in large bulbs of longiflorum, is not noticeable in Harrisii; the last-named sometimes producing stem-bulbs above the ground-line, and the growth more vigorous.

I have this season forced a considerable quantity of this fine Lily, and have no hesitation in testifying to its superiority over all others of its group for pot-culture and forcing. Many of my plants have exceeded 6 feet high, sturdy, vigorous, and self-supporting even then, and carrying healthy foliage to the pots. These were potted at the end of last August, and soon pushed away into growth when they were placed in frames secure from frost, and introduced into heat in the end of November. I have not at any time given them excessive heat, as they passed through December, January, and February in a temperature varying from 45° to 55°, which was increased to 60° at the end of the last-named month. But if we must give credit to information we receive from the other side of the Atlantic, we have to believe that they are forced into flower in a temperature of 80° to 90° in mid-winter; in fact, during the above-named months, which is putting the "steam" on with a vengeance, and most assuredly to the detriment of the future bulb. In the pot culture of this Lily it is not needful, nor even advisable, to shift into larger pots when growing. I much prefer planting them in the flowering-pots in the original potting in autumn.

The greatest enemy the cultivator has to contend with is greenfly, a terrible pest to this Lily, and which is hardly overcome at all if allowed to get any headway. The best policy to pursue is to fumigate to keep them away, to check their rapid increase, and not wait till they appear in thousands, which they soon do. I imagine the difficulty of killing them outright when they have taken possession of this plant, is in the fact of the favourable nest they have in the close-fitting leaves at the top of the plant, which in a measure prevents the smoke getting fairly at them. This is effectually overcome, however, by immersing the tops in a solution of quassia and soft-soap, which they cannot endure. When in flower and in good condition, this Lily is very imposing, few plants being productive of better effect when grouped with other plants in the conservatory or greenhouse, remembering always that a cool temperature will considerably prolong their flowering, and that the use of the syringe is highly detrimental to the lasting properties of the flowers individually. *J.*

A VIEW IN THE HARDY FERNERY AT LUTON HOO.

[See Supplementary Sheet.]

Luton Hoo, the residence of Chevalier de Falbe, the Danish Minister at the Court of St. James', has been described at various times in these pages, the last notice being on the occasion of our publishing the view from the north front of the mansion. We now give an illustration of the hardy fernery, which will show how, as Mr. Baillie, the gardener there says, an old rubbish-heap may be transformed, by the use of a few stumps and roots of trees, and burrs arranged on mounds of earth, and planted with the commoner species and varieties of Ferns, alpine plants, &c., and standing on a turf carpet. The canopy overhead is formed by Beech trees of great age; to the right hand is a screen formed with bushes of Laurel; the taller stumps of trees on the left hand are clothed with Ivy, Clematis, and Virginian Creeper. The whole forms one of those pleasant retreats from sun and wind, so desirable in all gardens of large extent, and which, from the small amount of labour that is required to keep it in order, might, without fear of any great addition to the labour-bill, be added to the existing attractions in many gardens.

SPRAYING FRUIT TREES.

The most important accession to recent horticultural practice is the spraying of fruit trees with arsenical poisons for the destruction of various insects. No orchardist can afford to neglect this practice. The codlin-moth, curculio, canker-worm, tent-caterpillar, and other insects, are destroyed by this operation, and sometimes three or more species are killed by the same application. Experience has shown the best methods of applying the poisons, and we now know that the essential points of the operation are to use a very dilute mixture, and to apply it with great thoroughness. London Purple, when pure, is better than Paris Green, and is cheaper. A pound of the London Purple to 250 or 300 gallons of water is sufficient. Apply it until the liquid drips from the foliage in all parts of the tree. The apparatus should be such that the liquid will be driven with great force in a fine spray. A gallon of liquid will cover an Apple tree twenty-five or thirty years of age.

A single spraying of Apple trees, if the operation is not immediately succeeded by heavy rains, is usually sufficient, although a second application is always advantageous. Two or three applications should be made upon Plums, Cherries, and Peaches, and I have met growers who make as many as five applications. Even five applications are much cheaper and easier than any other method of destroying the curculio, and the practice is much more effective. In young and open orchards the spraying can be well done with a machine which works from the wagon-wheel, but in large and thick orchards—those most in need of treatment—the operator must stop at each tree if the work is to be thoroughly done. A tank or cask upon a wagon, a pump with much power, one man to pump, and one to drive and hold the hose, is a profitable outfit. With such an outfit, two men can spray from 250 to 300 Apple trees, thirty years old, in about half a day. Pear trees are treated in the same manner as Apple trees. The mixing of flour with London Purple, in order to make the poison stick to the leaves, does not appear to meet with much favour among practical men. *L. H. Bailey, in "Garden and Forest."*

Plants and Their Culture.

The Inmates of the Greenhouse.—Many of the Heaths which have been in bloom throughout the past two months should now be cleared carefully of dead flowers and seed-vessels, and any small plants which are much pot-bound may receive a liberal shift, but I prefer to wait a month or two longer before shifting the older plants, thus allowing them time to make a good start into growth. Repotted plants should be kept rather close for a few weeks, so as to assist the plants to root into the new soil. A cold frame or pit will be found the most suitable place for them, as they can then be more readily attended to than is the case when they are placed in a mixed collection of plants. Watering must be carefully performed, and great attention afforded the plants to detect any appearance of mildew, to which many varieties are liable. Should the malady be noticed, dust with flowers-of-sulphur all affected foliage. Great care is necessary when selecting the compost for these plants, that only the best fibrous peat, clean coarse silver-sand, and charcoal broken small be used. When potting the plants, the soil should be firmly rammed, making use of plenty of clean drainage and clean pots, and taking care to leave plenty of space for giving water, as many plants, especially large ones, are killed by getting dry at the centre of the ball, owing to insufficient watering. Any plants about which the least doubt exists as to the condition of the soil, after turning them out of the pots and re-inserting them, should, if they appear dry, be thoroughly soaked for a time before repotting. Rain water should be used, it being very injurious to water Heaths with any other. The plants should now be afforded all the sunlight possible, as a short sturdy growth should be the aim of the cultivator. Autumn flowering varieties must not suffer through want of water at the roots, and should yet be protected from heavy rains. Heaths assume a much higher colour when placed out in the open, but they should be protected during rainy weather. A house suits them admirably where the lights can be removed from the roof.

Such soft-wooded varieties as hyemalis and some others, which will now have made good growth and have been hardened-off, may be placed out-of-doors on coal-ashes, the pots being shaded from the direct rays of the mid-day sun. A simple plan to adopt with small plants is to place them in empty pots a size or two larger than the pots in which they are growing, and larger pots may be shaded by pieces of tiles, turves, or boards.

Epacrises, which may have finished their growth, should be afforded treatment similar to the soft-wooded Heaths; but the late-flowering varieties take a longer period in which to complete their growth, and may be kept under glass for a few weeks longer. Aphelexis plants which have been in flower for some time past, should have their flowers removed by cutting them out at the base of the new growth

and encouraged to make a fresh start. These plants should at all times be watered with much care. Dracophyllum gracile needs much the same treatment as the Aphelexis, and will well repay any attention bestowed upon it. Old plants of species of Boronias should be shortened back if the plants are getting out of shape; also Pimeleas and Polygalas may be cut back hard, and given a shift into fresh soil, but these plants will then need extra attention for a time, that is, until new roots are formed, overwatering and exposure to rains being very detrimental to them. Small plants should have their shoots pinched in, and be potted into pots one size larger, keeping the plants close for a short time. Phœnocomas should get a light airy position; these plants will last in beauty for some time longer, but it is not advisable to let the blooms remain on the plants too long, as it tends to weaken them; and especially is this the case with young plants. *G. Wythes, Sion House, Brentford.*

The Hardy Fruit Garden.

Peaches and Nectarines.—The earliest of these will now be rapidly swelling their fruits, and should receive all possible sunlight, to give high colour and good flavour. The leaves over the fruit should be put aside, or they may be clipped off, according as the tree is weak or vigorous. Any late varieties which have not been finally thinned must be attended to without further delay. Earwigs sometimes attack both the foliage and the fruit of the Peach and Nectarine, spoiling the fruit when still quite green and hard. When this is the case, bean-stalks cut in lengths of from 8 to 10 inches, and placed at intervals among the branches, form capital traps, and serve to keep these depredators in check. The stalks should be examined each morning, and should any insects be in them they should be blown into a pail of hot water.

Morello Cherries, on north walls, should have all shoots not required for laying in cut back to within a few buds of the base. For the last four seasons I have not fastened to the wall the summer growth required for next season till after the fruit has been gathered, and find that not only do the fruits keep better, but the wood ripens more satisfactorily, and better crops are obtained the following season.

Raspberry Canes should now be made secure against wind, &c., either by stakes, or by being fastened to trellises. Leave from six to eight of the strongest canes, removing the rest except where it is intended to increase the stock.

Red and White Currants in the open will be much benefited if gone over and freely thinned, cutting out all suckers and shoots over-crowding the bushes. The tops of the leading shoots may be shortened back, but not too severely; the wood will then ripen considerably better, and finer crops may be relied upon the following year.

Cordon Trees should have all young shoots pinched in as fast as they appear, reserving the leaders, and tying them to the wires before they get damaged by wind, &c. Do not overcrop, especially if handsome fruit be required. Mulch and feed well with manure-water any trees carrying heavy crops, and also those making scanty growth, and take note of all that are intended to be root-pruned, when the proper time arrives for doing that kind of work; and place nets over late Gooseberries, Currants on walls, Morello Cherries, &c., as they begin to colour, and, indeed, over all fruits where birds are troublesome. *H. Markham, Mereworth Castle, Kent.*

Fruits Under Glass.

Peaches.—The early-house should still receive attention, although the crop be gathered. In fine, bright weather the trees should be syringed twice a week, about 1 oz. of carbolic soft-soap in a gallon of soft water should be used as an occasional wash for the trees—I find this a capital antidote to red-spider, and it is perfectly safe in use. The young shoots left on the trees for next season should not be less than 3 inches apart; plenty of space is more especially required where forcing is carried on in old-fashioned houses with low flat roofs, and small squares of glass. These houses require careful handling as regards ventilation, syringing, and damping, and do not require so much moisture as erections in the new style. To ensure well-ripened wood in a dull season like the last, syringing in the afternoon should not be done unless sufficiently early for the trees to dry thoroughly before night, or if done later in day the house should be left with some air on; anything like coddling should be avoided, and every advantage should be taken of the sun and light to expose the wood as much as possible to its influence, thereby securing short-jointed, hard shoots. Examine the borders, and see that they do not at any time get dry. Any ripening fruit should be exposed to the sun, and a free circulation of air maintained to give the necessary colour and flavour. Later houses with the fruit now swelling should have manure-water when required; also take off needless lateral shoots, expose the fruit, fumigate for thrips, tye in the shoots, &c. (not too thickly), syringe in the afternoons of bright dry days; firing will scarcely be necessary during the present bright weather, and give plenty of air on all favourable occasions. *W. Bennett, Rangemore, Burton-on-Trent.*

The Flower Garden.

Bedding Plants.—These are now in full beauty, and all that is required to keep them so is regularly to go over the beds—say, weekly—removing faded flowers and stalks, leaves, and weeds, and pinching back the shoots of any plant that is growing too rampantly, or is smothering out of existence the weaker growers. It is yet too early to make notes of the various modes of planting by way of reminders for another season. With regard to our beds, I am compelled to say that no arrangements which we have are more approved of than those of mixed plants of varying height and habits. Upright growing plants in these arrangements are made to do duty for standards, and are planted in regular order over the beds; and the trailers and bushy habited plants form the ground-work of these beds. This irregularity of height, and the regularity of mixtures, is the great charm of these beds. Geometrical beds and parterres require a greater amount of labour to keep them true to character than mixed beds irregular in shape and arrangement, and unless this labour can be afforded without restraint, it is better to discard them, as nothing looks worse than to see a line of one colour over-running that of its neighbour, thereby spoiling the effect of the design. In geometrically planted designs, such lines of plants must be clipped or pinched in at least once in a week, and the standard plants, which should always be used in the central parts of beds, should be kept closely tied to their supports, and any of the bottom foliage which may be smothering the ground-work plants should be cut away; this reminder is very necessary in respect of such plants as the Fishbone Thistle, Grevilleas, and Abutilons.

Subtropical plants of all kinds, though they have grown well, are still far from being at their best, and as it is desirable that this stage should be reached as quickly as possible, every encouragement in the way of watering and mulching should still be continued, as also should the tying to stakes as growth progresses.

Roses.—This has been about the shortest Rose season in my recollection. The flowers were approaching their best when the scorching weather and drought set in; but we have, however, the consolation that an excellent autumn bloom is almost a certainty, and to aid in making this later show of Roses a success, the shoots which have borne flowers should be partly cut back and all weak ones entirely cut out, and the plants be thoroughly washed with tobacco-water, soap-suds, or clear water, and sufficient force used in doing so to dislodge insects, after which the mulching may be renewed; and, in case the rainfall has not been sufficient, water the soil up to the saturation point. Cuttings of Roses, consisting of half-ripened wood, if inserted firmly in sandy loam, on a sunny bank, will strike readily at this season, and make good plants for planting out in the beds next year.

Hardy Flower Border. — Phloxes, Pentstemons, Œnotheras, Clove and other Carnations, are the chief flowering plants that are now in their prime. Put stakes and ties to all which require support, and let any isolated flowering plants be seen to the best advantage, by removing portions of flowerless plants, or, in fact, anything that encroaches on the solitary plants. Hyacinthus candicans, Gladiolus Gandavensis hybrids, Lilium auratum, and other bulbous plants should not be allowed to get smothered by other plants, and to prevent this occurring, the stems of Pæonies, Delphiniums, Spiræas, &c., which have done flowering, may be tied close together. *W. Wildsmith, Heckfield House, Winchfield.*

The Kitchen Garden.

Carrots.—Thin out succession crops, and sow seeds of the Horn varieties on a warm border, to keep up the supply of young roots during the winter. Where there are blanks in the lines, these may be filled with the thinned-out plants whose tap-root has been secured intact, a dibber being employed in the planting. The tips of the leaves should also be cut off, leaving about 4 inches only attached to the root. I have succeeded in securing a crop of Carrots by this means when the maggot has spoiled the greater part of the main crop—they seldom trouble transplanted roots.

Onions.—The final thinning of the main crop should now be done, and if the ground is not in good heart, it will be advisable to give two or three applications of manure or manure-water at intervals, the latter being employed in showery weather. The spring-planted Tripolis will now have made their growth, and if the bulbs are allowed to stand on the ground, they are apt to become mouldy, and decay to set in; it is therefore better to pull them, and, after drying them in the sun for a day or two, place them in a dry, airy shed.

Shallots and *Garlic* should, as soon as the foliage shows indications of maturity, be pulled, or the bulk of the crop may be lessened in a very few days.

Peas.—Continue to mulch and otherwise assist the succession crops of these, so as to prolong their season of productiveness. Seeds of American Wonder, Veitch's Chelsea Gem, may be sown on a warm border, or in pits, to be protected when frosts threaten. These methods of cultivation will prolong the Pea season to the utmost limit.

Cabbages.—If a proper system of cropping is carried out, one crop will follow another in order—for instance, one quarter may contain all the Onion family, which crops leave the soil early enough, and in excellent condition, to follow with Cabbages; and if my previous instructions were followed, fine stocky plants will now be at command wherewith to plant such vacant quarters. These may be planted-out twice as close, as they will eventually be left to form heads, every alternate row and plant being cut out as Coleworts. Spring-planted Cabbages will now be plentiful, and the leaves may be trimmed from the stalks as the heads are cut, a thorough watering with manure-water and a mulch afforded them, so that a rapid growth of Sprouts may ensue. The autumn-planted quarter can thus be set at liberty; for if left to produce a second crop of Sprouts, it would very seriously exhaust the soil.

Celery.—The main crop should be put into the trenches forthwith, and care should be taken that the plants are not checked in growth, or the ruin of the crop will be the inevitable result. Apply abundance of weak manure-water in dry weather, and a dusting of Thomson's, or Blood Manure, during showery weather. Some of the earliest planting may now be of sufficient size to blanch. In Lancashire, Celery growing is greatly followed, and some of the Celery is blanched from 3 to 4 feet in height; the system adopted being to tie up the plants, and fold them round with many thicknesses of paper—and an admirable method it is of blanching, no such fine Celery being found elsewhere, as is to be seen at the local shows. The short leaves should be trimmed from the base, all off-sets removed, and a strand of raffia tied round each plant. Having done this, the soil should be broken as finely as possible, and packed around the plants; and I consider it is better to allow the plants to attain their full size before beginning to earth them up, all the soil being placed to the plants at one time. The day previous to earthing the plants should receive a thorough drenching of water, as little or none will reach the roots after the earthing-up is done. Where slugs are troublesome, dust the soil with fresh slaked lime. *W. M. Baillie, Luton Hoo.*

Yellow Roses. — Gerard says, "the yellow Rose, as divers do report, was by Art so coloured and altered from his first estate, by grafting a wild Rose upon a Broome stalk (Cytisus), whereby, say they, it doth not only change his colour, but his smell and forces. But for my part, I having found the contrarie by mine owne experience, cannot be induced to believe the report."

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, July 23—Royal Horticultural Society: Fruit, Floral, and Scientific Committees meet.

SHOWS.

TUESDAY, July 23—National Carnation Society (Southern Section), in conjunction with the Royal Horticultural Society, at Westminster.
WEDNESDAY, July 24—Luton (two days).
THURSDAY, July 25—Trentham and Hereford.
FRIDAY, July 26—Wilmslow and Alderley.

SALES.

THURSDAY, July 25—Established Orchids, many in Flower and Bud, at Stevens' Rooms.
FRIDAY, July 26—Imported and Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—63°.4.

The Potato Disease.

It is already late to make the attempt to check the progress of the Potato disease this year, but, judging from experience, it is not too late to repeat the experiments made with such signal success at Chiswick, last year.

Although the report of that trial was presented to the Scientific Committee as long ago as last November, no report of it has yet appeared in the Society's *Journal*, in spite of the fact that, as we do not hesitate to say, no more striking, and certainly no more important, experiment has ever found a place in the Society's records. We recommend those interested to turn to the account given in our columns, on p. 572, November 17, 1888. It will there be seen that the elaborate experiments, conducted, for two years in succession, under the auspices of the Scientific Committee, for the purpose of putting Mr. Jensen's views to the test of practice, and the still more elaborate records made, were to a large extent, frustrated in their main object by the diminished intensity of the disease in the seasons when the trials were made. In 1888, however, a simple experiment, suggested by Mr. Plowright, was made at the last moment. The disease was then so virulent that no hopes of success were entertained. Nevertheless, the experiment resulted in a degree of success that was truly astonishing. Of course, one experiment, on so limited a scale, can hardly be deemed conclusive, but it must be remembered that, limited as it was, it was the complement and sequel of those which had preceded it, and that the conclusions to be drawn from it were identical with those previously obtained, and were quite in accordance with Mr. Jensen's statements.

A summary of the original experiments was given in our columns on January 9, 1886, p. 51. Last year's results showed that, by the simple process of "high moulding," that is to say, of banking-up the earth with a spade on one side of the rows, so that the usual furrow on the top of the ridge was done away with, and by gently bending the haulm over to the other side, the amount of the disease in the tubers was very greatly lessened by comparison with that present in the adjacent rows, moulded in the ordinary way, and in which no provision exists for preventing the access of the spores to the tuber, but where, on the contrary, the furrow in which the "collar" of the haulms is situated affords facility for the access of the spores to the tuber. Thus, while from the rows moulded in the customary manner 26 per cent. of diseased tubers were found at the time of lifting, only 10 per cent. were found in the row that had been high moulded. Similar results were obtained from a comparative examination of the tubers from the two rows laid aside for the purpose, and examined in November.

In view of the extreme importance of this matter, we urge upon our readers the desirability of studying the details given in our last year's volume before cited, and urgently press the desirability of some of our practical readers losing no time in repeating the experiment under other conditions. We cannot suppose that such striking results can be obtained again from experiments carried out on a larger scale, but even if the results of further experiments be less satisfactory in their degree, there can be little doubt, in any case, that a considerable saving of produce can be obtained at a very slight cost of labour and time. The Royal Horticultural Society's gardens at Chiswick are pre-eminently the place for such experiments to be initiated, but it can hardly be expected that private individuals in these busy times can continue to give their time and labour to them.

To those who may object that it is now too late to repeat these trials, it may be mentioned that last year the disease did not set in with virulence at Chiswick till July 29, and that the experiment which showed so extraordinary a result was not made till August 10.

Those who object to do anything, on the ground that only palliation, not cure, can be expected, are beyond the reach of persuasion. Those who consider that the results are not worth the trouble and expense, will, we doubt not, alter their opinion when they find that such valuable results can be obtained at a minimum of trouble and expense—at least, we hope they will put it to the trial. The anti-vivisectionists and anti-Pasteurists will, of course, urge that such proceedings are a violation of the laws of Nature, and that any endeavour to prevent, palliate, or stamp out disease is sinful, if it involve cruelty to a sensitive fungus.

Amorphophallus Titanum. — We are indebted to the courtesy of the Director at Kew for the following translation of a letter from Professor O. Beccari, respecting the flowering of the Amorphophallus Titanum at Kew, under the care of the assistant-curator, Mr. Watson. It is satisfactory to learn, that whilst all the other plants were lost, that at Kew was kept, and finally flowered:—

"My dear Professor Dyer,—I thank you very much for the beautiful photographs of the Amorphophallus Titanum. It pleased me greatly to see that you had succeeded in cultivating and flowering this plant. The Marquis Corsi has lost, one after the other, all his plants, which, like the Kew plant, were raised from seeds which I sent from Sumatra. The tubers (more than twenty), some of which were of extraordinary size, which I had sent to Genoa, perished because we were not allowed to introduce them for fear of Phylloxera; although at this very time the Government itself has introduced this parasite with the American Vines, which are being planted in the island of Pianosa."

National Carnation and Picotee Society (Southern Section). — The thirteenth annual exhibition of the above Society will be held on Tuesday, July 23, under the auspices of the Royal Horticultural Society, in the Drill Hall of the London Scottish Volunteers, James Street, Westminster. Upwards of a hundred prizes are offered in varying amounts, from 40*s.* downwards. The Southern flowers would be at their best a week previous to the show, but better blooms will be brought from the Midland districts this year. The prospects are good for one of the largest exhibitions ever held by the Society. By the courtesy of the members of the Horticultural Club, a luncheon will be provided at the Hotel Windsor, Victoria Street, at 1.30 P.M., for the Judges, members of the Society, and their friends; tickets are 2*s.* 6*d.* each, and may be obtained through the members of the Society. Shirley Hibberd, Esq., one of the Vice-Presidents of the Society, will lecture on the Carnation and Picotee in the Drill Hall, at 3 P.M. Robert Hogg, Esq., LL.D., Vice-President of the Society, has kindly consented to preside. The Hon. Secretary will be glad to take the names of ladies or gentlemen to be proposed as members. Subscriptions were due in January. Mr. Henwood Earley, Reading, is the Treasurer, who will gladly receive all unpaid subscriptions, or they may be paid to the Secretary, Jas. Douglas, Ilford, Essex.

Jubilee Fête in the Royal Botanic Society's Gardens.—This Society held a "Feast of Roses" on Monday, the 15th, the rain which fell occasionally being not heavy or continuous enough to cause much inconvenience. Whatever our opinion may be as to the fitness of a Society which calls itself a Botanical Society, indulging in performances better suited to Cremorne or Rosherville, or of the taste displayed by those who mass flowers into shapes which are supposed to resemble bells, crowns, goblets, &c., or as to the beauty of horses and carts wreathed with Roses, there can be no doubt but that the display was very acceptable to the general public, especially as to these attractions was added the presence of Royalty. We will only say that most of the Roses were shown in the Exhibition-tent, while scattered about the grounds might be found triumphal arches, a Maypole, &c., and on the lake was more than one boat decorated with flowers.

The Oxford Carnation and Picotee Union.—Mr. E. S. Dodwell has issued a notice to the effect that the annual exhibition of the above, originally fixed for August 6, will, by a practically unanimous vote of the cultivators interested, take place in Mr. Dodwell's garden on Thursday, August 1, thus anticipating the former date by five days. The fact that the Carnation bloom promises to be earlier than was originally anticipated, makes the change of date necessary.

Begonia. — From Mr. Peters, gr. to Harry Finch, Esq., Reigate, we received, last week, a small flower of a Begonia in which the central axis, from which the stamens are given off, was prolonged at its summit, in the form of a white, petaloid, funnel-shaped cup. It is to be presumed that it was the prolonged axis or thalamus of the flower dilated in this singular manner. Unfortunately, in the press of work, the flower was laid aside for careful examination, but when the time came the flower had become resolved into a mass of pulp.

Australasian Association for the Advancement of Science.—This association, which is founded on the lines of the British Association, and is intended to link together, in one common bond of fellowship and co-operation, the scientific workers of Australia, held its first meeting at Sydney, last year, when no fewer than 800 members were enrolled. The next meeting will be held in Melbourne, in January, 1890, when Baron Sir Ferdinand von Mueller will preside over the Association; Sir W. McLeay over the biological section; Sir Jas. Hector over the geological section; and Prof. Liversedge and Prof. Baldwin Spencer will act as general secretaries."



VIEW IN THE HARDY FERNERY, LUTON-HOO.

Dursley Rose Society.—The second exhibition of this Society was held on the 10th inst. Messrs. Jeffries & Sons, Cirencester, showed capital blooms, and took the chief prizes in the nurserymen's division, winning two medals given by the National Rose Society. In the amateurs' section the two National medals for H.P.'s and Noisettes were awarded to Major Phillips, Angeston (gr., Mr. J. Macdonald). Messrs. Cooling & Sons, Bath, and Messrs. Dicksons, Chester, were other prize winners in the nurserymen's division.

Hobart, Tasmania.—We read in a recently received newspaper that our Australasian relations are admirers of the Chrysanthemum, and that the Hobart Horticultural Society has held a successful exhibition, which opened on May 1. Chrysanthemums on May Day! Mr. Joseph Bidencope was one of the leading exhibitors; he grows nearly 400 varieties, from which 194 were shown. Mr. G. Luckman had over 200 varieties on exhibition. Mr. Bidencope's system of exhibiting is very profitable to the Society, as he wins large prizes and then returns them. Mr. G. Innes, of Frankton, contributed dishes of fruit suitable for the English market, and in order to encourage the Colonial fruit trade, the Society offered prizes for the packing of fruit for shipment to London, and, states the report, "brought on an interesting competition, and it was one from which much good may be derived."

Zinnia Haageana.—Some splendid beds of these in the Royal Horticultural Society's Gardens, Chiswick, show what fine subjects these are for the summer decoration of the flower garden, combining richness and diversity of colour, with duration and profusion of bloom, with great compactness and a very dwarf habit of growth.

The Royal Parks.—We are informed that Her Majesty's Commissioners of Works have, for the fifteenth time, accepted Messrs. J. Veitch & Son's tender for the supply of bulbs (Hyacinths, Tulips, Crocus, &c.), for the Royal Parks.

Watford Show.—On Wednesday, 10th inst., an exhibition of flowers, &c., took place at Watford, in connection with the reopening of the Recreation Grounds. Groups were the chief feature of the show. Mr. Beckett, gr. to H. H. Gibbs, Esq., Aldenham House, Elstree, staged a large and well-arranged group, not for competition, and other creditable exhibits were from Mr. Myers, gr. to the Earl of Clarendon, Watford; Mr. Gough, Harefield Grove; Mr. Dinsmore, Mr. Brown, gr. to Lord Esher; Mr. Kinnear, and Mr. Dean, Cassiobury Park Gardens; Mr. Darby, nurseryman, Watford, also sent a miscellaneous collection. Other exhibits do not call for notice.

Chambre Syndicale of Ghent.—At a meeting held on Monday, the 8th inst., the following awards were made:—

First-class Certificates.—To Oncidium sp. and Nephrodium palidum cristatum, from Mr. L. Desmet-Duvivier; to Odontoglossum Alexandræ grandiflorum, from Messrs. Edm. Vervaet & Co.; to Odontoglossum hastilabium and O. Pescatorei, from Mr. J. Hye-Leysen; to Cypripedium bellatulum grandiflorum, from Mr. G. Vincke-Dujardin; to Cypripedium Elliottianum, from Mr. J. Decock.

Monœcious Philadelphus.—Dr. Udo Dammer has sent us, from Berlin, flowers of a Philadelphus, probably a form of P. coronarius, from which the stamens are entirely absent, the pistil alone being present. This unisexual condition is new to us in this genus.

The Site of the Tuileries.—The *Athenæum* tells us that "the beautiful garden which has been formed on the site of the Palace of the Tuileries, destroyed by the Commune in 1870, is now completely finished, and open to the public. The whole area—from the monument of Gambetta, a work which is too demonstrative, to the Arc de l'Étoile, including the Place du Carrousel, the new garden of the Jardin des Tuileries, the Place de la Concorde, and the Grand Avenue des Champs Élysées—is now open to view, and is marked by prodigious magnificence and beauty. The wooden shanties lately occupied by the Bureaux des Postes have entirely disappeared, and that great department is now installed in the new building on the original site facing part of the Rue Jean Jacques Rousseau. . . . The new garden is called the Jardin du Carrousel, and it is enriched with columns surmounted by gilt spheres, and various decorative statues of high merit, including several famous ones."

Stock-taking: June.—"The 'No's' have it" this month—that is to say, there is a decrease as compared with June, 1888, as witness the accompanying extracts from the "Summary of Imports from Foreign Countries and British Possessions" in the monthly publication issued by the Board of Trade:—

	1888.	1889.	Difference.
	£.	£.	£.
Total value of imports	30,478,854	29,224,015	—1,184,839
§II.—(A.) Articles of food and drink — duty free	10,783,616	10,127,805	—655,811
(B.) — do., dutiable	1,694,688	1,663,593	—31,095
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	5,773,568	4,725,907	—1,047,661
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,224,516	3,422,480	+197,964
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	839,228	810,579	—28,649

It would be unfair, however, not to place on record the comforting fact, that "chemicals, &c., continue to show an increase." The following are our usual excerpts from the general list of imports:—

		1888.	1889.	Difference
§ II. Fruit:—				
Apples, raw	bush.	25,660	15,552	—10,108
Unenumerated, raw ...	,,	121,369	183,774	+62,405
Onions	,,	44,934	112,657	+67,723
Potatos	cwt.	559,179	858,670	+299,491
Vegetables, raw, unenumerated	Value	£72,484	£70,162	—£2,322

The figures in this little table are really worth cogitation, the decrease in unenumerated vegetables having been previously noted.

"Journal of the Japanese Horticultural Society."—The May number contains a coloured figure of Arundina chinensis, which appeals to those who are not in a position to read the text.

Flax in New Zealand.—Flax owners are (according to the *New Zealand Times* of May 16) getting very handsome royalties just now. Rumour says the Oroua Estate receives £2800 a year royalty on a weed (Phormium tenax) that they have spent much money trying to eradicate. Another big West Coast estate is getting over £1000 a year in royalties. The favourite form of Flax royalty is a rent of £14 per shipper per month for a day of ten hours, whether the mill be working or idle. Some landlords charge a royalty of 7*s.* 6*d.* to 10*s.* per ton of green Flax, and even higher prices are mentioned.

Limes of Western Europe.—Mr. C. S. Sargent, in the *Garden and Forest*, says that, "I can find no distinguishing characters in the bark, in the habit of growth, or in the flowers, which in all three species are destitute of the petaloid scales that occur in those of our American species, or in the winter buds of these trees as they are found growing here; but in the leaves and in the fruit they are clearly distinct. The following characters, therefore, may be found useful in enabling cultivators who cannot always readily refer to the old figures to distinguish the different species:—

"Conspectus of the Species.

"Leaves pubescent: fruit prominently four-ribbed at maturity. . . . 1. Tilia platyphyllos.

"Leaves naked, except in the axils of the principal veins: fruit destitute of wings.

"Leaves ample, the base more or less oblique, green on both surfaces: tufts of hairs pale: shell of the fruit thick and tough. . . . 2. T. vulgaris.

"Leaves small, sub-cordate or rounded at the base, pale on the lower surface: tufts of hair, rusty brown: shell of the fruit thin and brittle. . . . 3. T. ulnifolia."

The Botanical Society of France (says *Nature*), announces the following programme of the forthcoming Botanical Congress to be held in Paris:—Tuesday, August 20, opening sitting of the Congress at 2 p.m., at the Hôtel of the Horticultural Society, 84, Rue de Grenelle; reception of foreign members at 8.30 p.m. Wednesday, August 21 sitting at 9 a.m., devoted to the consideration of the first question, on the utility of an agreement between the different botanical societies and museums, for the purpose of drawing up charts of the distribution of species and genera of plants on the globe, and other communications if time allows. Thursday, August 22, excursion in the neighbourhood of Paris. Friday, August 23, sitting at 9 a.m., devoted to the consideration of the second question, on the characters furnished by anatomy for classification, and other communications if time allows. In the afternoon a visit to the botanical collections and laboratories of the Museum of Natural History, and of the other large scientific establishments in Paris. Saturday, August 24, sitting at 9 a.m., miscellaneous contributions; in the afternoon a visit to the Exhibiton. Sunday, August 25, banquet to the foreign botanists. During the following week, several botanical excursions will also be arranged. Special arrangements with regard to railway fares will be made in favour of botanists announcing their intention to be present to Mr. P. Maury, the Secretary to the Committee of Organisation, 84, Rue de Grenelle, before July 25.

A New Agricultural Bill.—A Bill has been introduced into the House of Commons which would, says *Nature*, if it became law, prove a great boon to young people in the rural districts. The object is to provide instruction in agricultural and horticultural subjects in public elementary schools, and to afford practical illustration in such teaching. The Industrial Agricultural Education Bill, as it is called, would not only secure for children in rural districts practical instruction on such subjects as fruit, flowers, and vegetable growing, the proper method of keeping cattle, rotation of crops, packing fruit for market, and other matters of equal importance; it proposes, further, that the instruction in these branches shall be carried on after the children leave school. To effect this, it is proposed to establish schools at which lessons would be given in the evenings, and on Saturday afternoons. To induce parents to keep their children at school for a longer period, or to send them to the new schools, the promoters of the measure advocate the provision of a small number of scholarships of the value of 30*s.* per annum, and tenable for two years, for children who have passed the fourth standard. They foresee, also, that the ordinary appliances of elementary schools will not be sufficient to secure comprehensive instruction in practical agriculture, and they are bold enough to hope that a special grant will be made by the Education Office or the Science and Art Department for the expenses of

such allotments, school gardens, and buildings as may be necessary to make the teaching thoroughly practical. The Bill is backed by Mr. George Dixon, Mr. Henry Fowler, Sir John Lubbock, Mr. Jesse Collings, Sir Bernhard Samuelson, Mr. Howell, Sir John Kennaway, Mr. Robert Reid, and Major Rasch.

Presentation to Mr. Walter H. Williams.—Last week a very pleasing ceremony took place in the Banqueting Hall of the Council House, Salisbury, the Mayor presiding, the occasion being the approaching marriage of Mr. W. H. Williams, Hon. Sec. of the Wilts Horticultural Society, an event of which his friends availed themselves in order to express their appreciation of the valuable services Mr. Williams has rendered to the Society. The wedding present consisted of a cottage piano, of the value of 55 guineas; and one of the panels of the instrument bore a silver plate, on which was the following inscription:—"Presented to Mr. W. H. Williams, Hon. Sec. of the Wilts Horticultural Society, by the committee, exhibitors, and friends, upon the occasion of his marriage, July, 1889." Dr. F. W. Coates, a keen horticulturist, who has the welfare of the Society at heart, was deputed by the Mayor to make the presentation, which he did in a few well chosen remarks.

The Effect of "Bouillie Bordelaise" on Wine.—The *Times* of June 6 says:—"Bouillie Bordelaise" is a mixture of 3 lb. of sulphate of copper with 1 lb. of slaked lime and 22 gallons of water, which is largely employed in the Gironde and other wine-growing districts of France to prevent the Vines being attacked by mildew. The results have been so satisfactory that it is said the abundance of the vintage last year was largely due to the use of this remedy. Some apprehensions, however, have been excited by the employment of this mixture, which is sprinkled on the leaves of the Vine, as it is thought that it must have some effect on the wine produced from the Vine so treated, and that not only may the flavour or other qualities of the wine be unfavourably affected, but that the health of the consumers may be injured. The British Consul in Bordeaux, in his last report, returns to this subject, and, for the benefit of British consumers of Bordeaux wines, says that many careful analyses have fully proved that wines made from Vines sprinkled with the "bouillie Bordelaise" are not injurious to health. For it has been repeatedly found that the quantity of copper contained in such wines does not exceed three-tenths of a milligramme per litre, or, in other words, a consumer, before absorbing a maximum quantity of 45 grains of copper, would have to drink at least 2000 gallons of wines produced from such Vines. According to scientific experiments, this trifling amount of copper is in fact not greater, and probably less, than the percentage thereof contained in some other articles of daily food which are admitted into the human body without injurious or unpleasant effects. How far, on the other hand, the use of the "bouillie Bordelaise" may have already affected, or will affect, the flavour and some other qualities of the wine derived from Vines sprinkled with it is a question which has not yet been definitely settled.

Womens' Work.—The Woman's Division of the German Academic Association recently decided, says *Garden and Forest*, to promote the education of women in the art of gardening, "partly in order to enable the future housewife to care for her own garden, but chiefly to open new sources of income to the unmarried." A committee of the Association for the Promotion of Horticulture at once concerned itself with the matter, and announced that it would be considered at a general meeting on May 23. Meanwhile, however, the subject was broached at an open horticultural conference in Berlin on May 8, where 600 gardeners were present. An hour and a-half was spent in discussing the advisability of educating women as gardeners, thirty speakers making themselves heard for or against the idea. A vote was then taken, and the following resolution submitted to the ladies' committee of the Academic Association:—"The conference feels itself compelled to oppose the projects of the Academic Association in the interest of German gardening, as well as in those of womankind itself, because gardening demands much greater physical powers than usually are found in women, and because the industry is already at this moment suffering from overcrowding."

Aldenham Street Sunday School.—The thirteenth annual flower show of the above, which is in connection with Regent Square Presbyterian Church (Rev. John McNeill), took place in the Aldenham Institute, Goldington Crescent, on Saturday last. This school, which is one of the largest in the Metropolis, having 1400 children on its roll, was the first to introduce flower shows in connection with Sunday schools, in England. Saturday's show was one of the best and most successful ever held. There were 752 exhibits, consisting of window-boxes of annuals, pots of annuals, plants in pots, and home-made work, as against 585 last year, by 129 boys, 168 girls, and 17 teachers, in all 314 exhibitors, as compared with 150 in 1888. The Royal Horticultural Society's Medal, for the best collection of four plants, was won by Harry Briers. Other special prizes were awarded for collections of plants, in addition to the ordinary prizes, about 100 in number, for the different varieties. The Rev. John McNeill addressed the children in characteristically happy terms, congratulated the children and those friends in charge of the show, upon the success that had attended their efforts, as he believed these shows were doing a good work in developing a love for all that was beautiful in Nature. Mr. McNeill then presented the special prizes.

John Edward Lane.—A familiar figure in the horticultural world, and one who, from his personal qualities, extensive experience, and wide knowledge was highly respected, has passed away at the ripe age of eighty-two years. Mr. Lane, of the Berkhampsted Nurseries, was one of the old school of "all round" gardeners, and his nurseries and his cultivation of Vines, Roses, Rhododendrons, and fruit trees was specially remarkable. Mr. Lane died on July 17, and his funeral is fixed for this day, July 20, at Berkhampsted, at 3 p.m.

Publications Received. — *The Book of the Farm.* Div. iii. Ed. by J. Macdonald. (London and Edinburgh: Wm. Blackwood & Sons).—*Walks in Holland.* By Percy Lindlay. (London: 125, Fleet Street, E.C.)—*Cercle Horticole.* Van Houtte. Schedule of III. Exhibition, 1, 2 and 3, of September, 1889.

PLANT PORTRAITS.

Anthurium Dechardi, *Gartenflora*, June 15, p. 325.

Anthurium Scherzerianum Fruit, *Gartenflora*, June 15, p. 325.

Anthurium Scherzerianum var. Madame Desmet-Duvivier, *Illustration Horticole*, t. 82.

Begonia Scharffiana, *Illust. Monatshefte*, May.

Bougainvillea glabra, *Revue Horticole*, June 16.

Calanthe d'Arblayana, *Orchidophile*, June, 1889.

Cattleya Walkeriana, *Gartenflora*, June 1, t. 1299.

Cypripedium barbatum var. Warnerianum, *Illustration Horticole*, t. 81.

Cypripedium nitens ×, *Moniteur d'Horticulture*, June.

Echinopsis cristata, *Gartenflora*, June, abb. 47.

Lobelia laxiflora, *Garten Flora*, July, 1889, t. 1301.

Pear Charles Delatin, *Bull. d'Arboriculture*, April, 1889.

Rudbeckia laciniata, *Garden and Forest*, June 12, 1889.

Tigridia Pringlei, *Gartenflora*, June 15, p. 321, woodcut.

Tillandsia streptophylla, *Gartenflora*, June, abb. 48.

Tulipa Dammanni, *Gartenflora*, t. 1300, f. 1.

Urceolina pendula, Bull, *Soc. Tosc. di Orticult*, June.

Vriesia Alberti ×, *Revue Alberti*, July (out of Vriesia incurvata by V. Morreniana).

Vriesia Magnisiana ×, Wittmaek, *Garten Flora*, July 1889, p. 345, fig. 56 (= V. Bariletii × fenestralis).

Vriesia Marie ×, *Revue Horticole*, July 1 (out of V. Bariletii by V. brachystachys).

FOREIGN CORRESPONDENCE.

THE GARDENS OF THE PARIS EXPOSITION.

From the time when the Exhibition was settled on, commencements were made in preparing the gardens. The plans were settled and determined in August, 1887, and measures were at once taken for levelling the ground, laying out the walks, the grass plots, the valleys, and the shrubberies. In October and November of that year, earth was brought in, and also the trees intended for the shrubberies and for the grass plots. By the commencement of 1888, there were definitely fixed in place more than 400 large trees of different kinds. This work was carried on under the direction of M. Laforcarde, and the constant supervision of M. Alphand. The Municipality of Paris had at the Bois de Boulogne many unique specimens, which they allowed to be transported to the Champ de Mars, where they have been much admired both by connoisseurs and the general public. Among these trees are Maples, Birch, Catalpas, Cytisus, loaded with yellow flowers; Walnuts, Mulberries, Poplars, Robinias, Service trees, Elms, silver Limes, and others.

There may be counted in the gardens more than 400 varieties of ornamental and forest trees, and upwards of 600 varieties of shrubs of different families. Seldom has there been met with, in public grounds, so extensive a collection of such fine specimens. And what trouble, and care, and precaution were requisite in transporting these shrubs, to plant and acclimatise them in this new soil. They were to be seen carefully enveloped in straw, to protect them from the cold, and in other instances covered with immense cloths, to protect them from too ardent heat of the sun.

And the grass plots. It was no easy matter to have green lawns ready at the opening, in May, by sowing grass seed. M. Laforcarde therefore formed a vast lawn in the Park of Princes, capable of furnishing for the grass plots and borders more than 30,000 square yards of green turf ready for placing.

The garden comprised between the Palace of Fine Arts and that of the Liberal Arts measures about 10 acres. It is on one side surrounded by terraces with balustrades, which are reached by vast flights of steps. At foot of these balustrades are borders of Rhododendrons, which, when in full bloom, were the admiration of all visitors; and at different distances are planted superb Magnolias, which will shortly be in flower.

On the terraces are placed sixty Palms, 5 or 6 yards high, exhibited by Messrs. Besson Brothers, of Nice, and seldom has there been seen in Paris such a fine collection of specimens of Chamærops excelsa.

The centre of the garden is occupied by a vast grass-plot, with borders and groups of shrubs and flowers, which will be from time to time renewed, according to the season, until the close of the Exhibition.

Above this garden is another one, stretching from the galleries of various industries to the central dome, which measures 6 acres. In the centre is a great carpet of flowers, between the two Pavilions of the city of Paris, surrounded by shrubs and climbing plants; rows of Plane trees, planted more than a

year ago, and very vigorous, are found between the galleries of the restaurants and the Pavilions of the city of Paris, which form promenades.

It required two such competent authorities as M. Alphand and M. Laforcarde to arrange these matters in their right place, to construct good points of view, to consider the general effect, and to arrest and retain the sight by a thousand seductions. The gardens of the Champ de Mars form one of the great successes of the Exhibition, and the public are greatly indebted to the organisers for having produced such a profusion of verdure, groves, flowers, and shade by means of healthy trees—not scattered and dying as in 1878.

The rapidity with which the damage done by the public to the turf, grass plots, and flower beds on crowded days, when frequently 200,000 are present, is repaired, and the *débris* of paper, &c., removed, is marvellous, for although efforts at protection have been made by wire and posts, still in the evening, when the illumination of the gardens takes place, notwithstanding the force of guardians and police, visitors will trespass on to the beds and seat themselves on the turf to have a good view of the illuminated fountains, and the effects of the play of the electric light from the Eiffel Tower. It is unnecessary to describe here the other grand attractions of the gardens, in statuary, pretty little edifices, and the plants surrounding the separate American buildings, the whole forming a park full of novelty and attraction, and a model for future exhibitions. *Our own Correspondent.*

Berlin Notes.

The results of the abnormally hot weather experienced at Berlin during May and June (during May the average temperature was over 66° F., which is above the usual average for July) may now be seen. Horse Chestnuts and Lime trees look as they usually look in October; the foliage is brown, and already the leaves are falling. Also Acers (especially A. dasycarpum) have quite an autumnal appearance. This A. dasycarpum, though a highly ornamental tree, gives the gardener much work, as the leaves begin to fall a few weeks after they are out, and the ground under the trees has to be constantly swept—sometimes twice a day. The falling of the leaves of Horse Chestnut and Lime is a proof that all plants need for growth and development a certain definite degree of warmth, and that the period of time required for the purpose is relatively immaterial, so long as they get what they want. Thus only can the present fall of the leaves be explained, as this year we have had both warmth and moisture. The result of these conditions will certainly be that all trees whose growth for the year is now completed, will this season have a second growth; Horse Chestnuts, for instance, are already beginning to put out young shoots.

The Wheat harvest began this year in the neighbourhood of Berlin on June 27. This is a month earlier than usual. The straw is short and poor, but the ears are plentiful and fine.

Some weeks ago I saw in a private garden a Philadelphus in full bloom, but bearing only female flowers. The pistil in each instance was very large; usually there were no stamens, and if these were developed they were petaloid, having no anthers. The petals were large, and both sides were incurved; the calyx often more or less petaloid. I noticed that I could not find—though I examined many hundreds of flowers—a single hermaphrodite one. It might be said that, in almost all cases, there were only three flowers forming each inflorescence.

It is known that there are amongst Roses myrmerophile forms? Some time ago I had an opportunity of making this interesting observation. In the Rose beds in a friend's garden, I found most of the leaves destroyed by caterpillars, only some three or four bushes having escaped. Closer inspection showed that the twigs of these were quite brown with ants. The cause of this was that the leaves had at the base, at each side, some five or six glandular hairs, which supplied the ants with a good deal of nectar. I observed the ants sucking this nectar, and the phenomenon was explained. I may say, that I could not find any aphides on these plants. Unfortunately, I cannot say what the variety of Rose was; all I know is, that it was a dark red perpetual. I may say also, that the petiole had a great many little glands and glandular hairs.

As you know, petalody of the stamens is a very rare occurrence in Compositæ. I am happy to say that I found in Rudbeckia californica a good many ray-flowers whose stamens were more or less petaloid. These examples were entire on the upper (inner) surface, on the under-surface roughly toothed, and with some long hairs at the base. The margins were more or less incurved.

In one of the last issues of *Gardeners' Chronicle* it was stated that "Professor Urban had been appointed Director of the Berlin Botanic Garden." This is not the case. Though Professor Eichler died twenty-eight months ago, up to the present time it has been found impossible to select a successor. This may be due to the fact that the Professorship of the University is now separated from the Directorship of the Botanic Garden. Professor Urban is said to have obtained the latter position, but until now he has not been appointed. This interregnum is bad for the garden. Some six years ago it was proposed to construct new plant-houses, as almost all are so old and bad that they need a great deal of repairing every year. But, so long as we have no Director, the houses must remain as they are. *From our Berlin Correspondent.*

Nursery Notes.

MESSRS. J. VEITCH & SON'S TRIAL GROUNDS, CHISWICK.

In these admirably kept grounds a comprehensive collection of vegetables is on trial this season. A good collection of Lettuces was in capital trim at the time of our call recently, and the following notes upon them may not prove uninteresting:—

Sixty-seven lots of Cabbage varieties, comprising forty-eight varieties, were on trial. Golden Queen is a remarkably pleasing pale golden variety. It is very early, small and compact, and literally all heart.

Perfect Gem well maintains its high character of not running early to seed, and once more proves invaluable in a season like the present. It is a medium early variety, of fair size, of a rich deep refreshing green colour, with solid heart like a cricket-ball, and remains a long time fit for use, being one of the most desirable varieties for summer use.

Lee's Nerveuse and Hammersmith, as also Stanstead Park, do not stand long when spring sown, but do much better autumn sown. Paris Market, in the way of Grand Admiral, is a little smaller, and much earlier. This is very largely grown around Paris for the French and English markets. Tom Thumb is a fine true dwarf stock, and an excellent well known sort, but has to be kept carefully selected, or it is liable to run out. All the Year Round, for general use, and a variety to rely on, wants a lot of beating; good and true. Royal Albert, a little larger than Drumhead, and a little more crisped, is a fine large summer variety.

Grosse Paresseuse, recently certificated, is a good late variety, tender, and a good firm-hearted sort; one of the best. The spotted and dark-coloured varieties, although some are good sorts, are not taking in appearance, and are not generally approved of.

Cos Lettuce: thirty-six lots, comprising twenty-one varieties. For general summer use, a good type of the Paris White Cos is still the best, and this showed itself prominently in Veitch's White, which for size and beauty was conspicuous amongst all the others. The plants were strong and sturdy, with broad leaves incurving towards the centre, making a solid compact heart, with little waste; altogether the *beau ideal* of a Lettuce for the garden. London White may be a trifle earlier than Paris White, but has narrower, more pointed leaves, and is not such a good variety. Bath Black-seeded, a fine true stock of one of the best sorts for spring or autumn sowing, growing to a large size, and having a particularly fine nutty flavour.

Hicks' Hardy White, so seldom seen true, is a carefully selected and improved stock of the original stock sent out. It is a little later, giving a fine succession to the forms of Paris White Cos; grows to a large size, and remains a long time fit for use; also a great recommendation is its suitability for spring or autumn sowing.

Paris Green and Paris Grey, or Sutton's White Heart, also looked very well, the latter being intermediate between the green and the white.

Peas.—146 lots are on trial this season. Dr. Hogg, Veitch's selected stock, is a remarkably early selection of an uniform dark green colour and level growth. It is considerably earlier and dwarfer than the usual trade samples grown by the side of it from various firms for comparison, and has also the advantage of bringing in its crop almost altogether, so that a good pulling can be got at first picking, it is therefore good for market growers, and by the time it ceases to bear well other varieties are ready. Undoubtedly this fine variety will be more grown, as it is the earliest wrinkled marrow variety, being ready for picking on June 17 this season, and this on the cold heavy soil at Chiswick. It is a good cropper, and a marrow variety of delicious flavour—a great point in early Peas—with pods large and well-filled. Veitch's Extra Early is a fine selected stock of first early round white Peas, dwarfer than the old varieties, such as Dickson's First and Best Sangster's No. 1, &c., and earlier than any other Pea in the same way.

Chelsea Gem is another good and useful sort; it is only a few inches taller than American Wonder, quite as early, but with pods nearly twice as long, and more curved, which are well-filled. This is also a marrow variety of excellent quality. For growing in pots, or without sticks, this is much the best variety, as the crop is about twice the quantity of any other very dwarf sort.

Regarding flowers, a good collection of Asters is on trial. These we may refer to in their season. Poppies, too, are extensively grown, and are extremely beautiful. Great pains are being taken to secure some good double forms of these deservedly popular subjects. X.

Florists' Flowers.

THE AURICULA.

At this season of the year, with great pressure from work of all kinds, it is difficult to give the attention such subjects as show Auriculas need; still it is not wise to neglect them, the present being the time when the foundation of future excellence is laid. The plants are completing their growth, and much care is necessary to prevent their running out into autumn bloom. The only precaution that can be taken is to give them ample ventilation; in fact, the plants ought to be as much as possible out-of-doors, which is best done by removing the lights altogether, except when it rains heavily, and then all the ventilation possible must be afforded them. The specimen plants, which will be those that produce the finest blooms in the spring, are those which are the most likely to flower in the autumn, and which would have the effect of injuring next year's prospects. These plants should not receive any more water at the roots than is required to preserve the leaves from wilting; for over-watering, or even what most people would think is just enough water, might cause these plants to bloom unseasonably. The plants of medium size require much the same treatment; indeed, in some cases these plants will produce better trusses than the larger plants. As an illustration of this fact, I refer to George Lightbody, one of the best known, and really the leading variety in cultivation, as one that gives the best trusses from young medium-sized plants.

Horner's Heroine, certainly the best self yet raised, always produces the best trusses from young medium-sized plants. On the other hand, the Rev. F. D. Horner, green edge, gives the best trusses from large plants; so also does Acme, white edge; but Conservative always produces the largest trusses and most perfect flowers from young plants. To get acquainted with these peculiarities of varieties requires considerable experience, and it is a most interesting study, so much do these differ from each other, the differences being easily detected by the florist by the leaves and by the flowers.

Whilst paying attention to these, the careful cultivation of the smallest plants must not be neglected, and if they are confined in small pots for too long a period of time, they become stunted, and not only is time lost, but the plants never make such robust plants when they have been seriously checked in growth. Probably the reason why the owners of small gardens, who also cultivate their own flowers, succeed with the Auricula and kindred subjects better than the average gardener in their cultivation is, that they give their attention to one, or two, or three subjects at the most, whereas the gardener is overburdened with his often multifarious duties. There is now the work of repotting the old plants from which seeds are just ripening to be done, also the potting of all the smaller plants requiring it, and of seedlings that were raised from seeds sown last year. Seeds as they ripen should be sown, being careful to make note of the various crosses. Place labels to them, with the date of saving and sowing the seeds, and note the time of the vegetating of the seeds, &c. It is very desirable to have a supply of the best potting soil of uniform good quality always in readiness. *J. Douglas.*

The Cineraria.

July is the proper month in which to sow seeds of Cinerarias to flower next year, and choice varieties may be increased by division. Avoid artificial heat at this season, but do not place the seed pots out-of-doors, as drying winds on the one hand are about equally injurious as dashing rains on the other; but place the pots under a handlight or frame on the shade side of a hedge, or wall, until the plants are large enough to prick off. They will grow very rapidly if placed in a suitable position, and be kept uniformly moist. The young plants require to be carefully handled, the leaves being very brittle and break off, or the stem snaps in two. The leaves of the Calceolaria are similar to these in brittleness, and require equal care to keep them in good condition; and not only are the plants more beautiful when the leaves are perfect, but the flowers are finer than is the case when the leaves are injured. Cinerarias do best in frames in summer and autumn until cold weather sets in, when they should be moved to a light greenhouse; the leaves are more easily injured by frosts than those of the Calceolarias. I have taken the offsets from selected and named varieties, and planted them in threes and fours round the edges of large 60's. It would be better, perhaps, had each been placed in a suitable sized pot, as repotting in larger pots is done without check. Like most rapidly-growing herbs, the soil should be rather light and rich in its nature; but stimulating artificial manures should be avoided in the early stages of growth, as the leaves produced are thin, large, and flabby. The point to be aimed at is the obtaining of dwarf plants well furnished with stiff foot-stalk, and healthy rather brittle foliage. The plants are brought to this condition stage, by being placed near the glass in a light airy house. They must be kept free from greenfly and thrips by fumigation, and from mildew attacks by dusting the leaves with flowers-of-sulphur. The soil at the roots must never become very dry; on the other hand, it must be kept moist without having so much water as would cause it to become sour. There is no need to give a large amount of root-room, and the largest exhibition specimens flower freely in 8-inch pots; but perhaps the most useful of plants are those in 7 and even 6-inch ones. The culture of the choicer Cinerarias from seeds cannot be too highly recommended, but where they are recommended to amateurs, the usual reply is, that it is impossible to grow them owing to their being so liable to be attacked by "blight," another name for greenfly. This is so, but there is no difficulty in getting rid of this pest on its first appearance. When the plants are seriously attacked by it, the leaves are so much crumpled up that the fly cannot be exterminated, and in spite of much fumigation with that intent, the plants generally lack vigour. Monthly fumigation of the house or pit will usually keep the plants clean. *J. Douglas.*



Fig. 13.—Prolified flower of Rosa berberidifolia.

A Hybrid Catalpa. — Professor Sargent describes and figures a hybrid Catalpa, which he calls Catalpa J. C. Teas ×, and which was accidentally produced in the nursery of Mr. J. C. Teas, between the Japanese C. Kæmpferi and the North-east American C. bignonioides, or possibly C. speciosa.

Rosa berberidifolia.

Before this curious Rose, which has been so successfully grown by the Assistant Curator at Kew, and by Mr. Ewbank, passes once more into temporary oblivion, it may be well to add that, like other Roses, it is subject to prolification. Mr. Watson sends us a flower in which the receptacular tube (the haw) is absent, but in which the stem of the plant is prolonged through the centre of the flower (fig. 13). In endeavouring to come to some conclusion as to the facts, and in the attempt to reconcile some of the widely different views as to the real nature of the foliage and stipules of this plant (see *ante*, p. 8 and 9, July 6), we naturally endeavoured to find a figure or description of an ordinary seedling Rose, feeling sure that it would throw some light on the peculiarities of the Persian Rose. But this is just one of those common things that do not get into books; at any rate, after searching in vain for any account of the characters of a seedling Rose, we applied to Messrs. W. Paul & Son for some seedlings, with which they kindly supplied us. Among them we found what we wanted. In the seedling in question, figured at p. 79, fig. 14, we found the first-formed leaf, subsequent to the two cotyledons, presenting, as we expected it would do, almost precisely the conditions of R. berberidifolia, and confirming the view that arrested growth is the real cause of the appearance in question. Here the first leaf has a petiole without apparent stipules, and a solitary leaflet at the end, just as in berberidifolia, while the subsequently formed leaves exhibit a gradual transition to the adult condition.

It is highly probable that the small amount of leaf-surface in R. berberidifolia is a provision for diminishing the evaporating or transpiring surface in the hot burning climate in which the plant grows.

List of Garden Orchids.

(Continued from vol. v., p. 802.)

82a. Brasso-Cattleya ×, Rolfe, in *Gard. Chron.*, 1889, i., p. 437.—A name proposed to distinguish the following supposed hybrid between the two genera, Cattleya and Brassavola.

(1.) B. × Lindleyana, Rolfe, in *Gard. Chron.*, 1889, i., p. 437. *Cattleya Lindleyana*, Rchb. f., in *Berl. Gartenz.*, 1857, p. 118; *Bot. Mag.*, t. 5449; Rchb. f., *Xen. Orch.*, ii., t. 135. *Bletia Lindleyana*, Rchb. f., *Xen. Orch.*, ii., p. 65, also p. 135. *Lælia Lindleyana*, Veitch, *Man. Orch. Pl.*, pt. 2, p. 73.—Brazil. Introduced by M. Linden from the Province of Santa Catherina, and flowered in 1857. In the place above cited, I have pointed out the probability of its being a natural hybrid between Cattleya intermedia and Brassavola tuberculata.

82b. Lælio-Cattleya ×, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 168.—A name proposed to distinguish the hybrids between the genera Cattleya and Lælia.

(1.) L. × amanda ×, Rolfe, in *Gard. Chron.*, 1889, i., 802. *Lælia Amanda* ×, Rchb. f., in *Gard. Chron.*, 1882, ii., p. 776; Warn. and Will., *Orch. Alb.*, t. 135. *Cattleya Rothschildiana*, Hort., ex Warn. and Will., *Orch. Alb.*, sub t. 135.—Brazil. Introduced by Mr. William Bull, and flowered in 1882. Its supposed parents are Cattleya intermedia and Lælia crispa, or possibly L. lobata, which seems the more probable, because of the absence of yellow on the disc of the lip.

(2.) L. × Amesiana ×, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169. *Lælia Amesiana* ×, Rchb. f., in *Gard. Chron.*, 1884, i., 109; Warn. and Will., *Orch. Alb.*, t. 253.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Lælia crispa ♀ and Cattleya maxima ♂. One of the most beautiful of artificial hybrids.

(3.) L. × bella, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169; also 1888, i., p. 361. *Lælia bella* ×, Rchb. f., in *Gard. Chron.*, 1884, i., p. 174.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Lælia purpurata ♀ and Cattleya labiata (vera) ♂. A very handsome plant.

(4.) L. × callistoglossa, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169. *Lælia callistoglossa* ×, Rchb. f., in *Gard. Chron.*, 1882, i.,

p. 76; Warn. and Will., *Orch. Alb.*, t. 235; Veitch, *Man. Orch. Pl.*, pt. 2, p. 94, with fig. —A hybrid, raised by Mr. Seden for Messrs. Veitch, from Lælia purpurata ♀ and Cattleya labiata var. Warscewiczii ♂. Flower very large, and lip very richly coloured. One of the finest of artificial hybrids.

(5.) L. × CALOGLOSSA. *Lælia caloglossa* ×, Rchb. f., in *Gard. Chron.*, 1877, i., p. 202.—A hybrid raised by Mr. Dominy, for Messrs. Veitch, from Cattleya labiata (vera) ♀, and Lælia crispa, or L. lobata ♂. Professor Reichenbach thinks the latter more probable. I have not seen it.

(6.) L. × CANHAMIANA, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169. *Lælia Canhamiana* ×, Rchb. f., in *Gard. Chron.*, 1885, ii., p. 6.—An *enfant trouvé*, raised in Messrs. Veitch's establishment, whose parentage is supposed to be Lælia purpurata and Cattleya labiata var. Mossiæ. It is not known which was the seed-parent.

(7.) L. × CASSANDRA, Rolfe, in *Gard. Chron.*, 1889, i., p. 491. *Cattleya Cassandra* ×, Rolfe, in *Gard. Chron.*, 1888, ii., p. 596.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Cattleya Loddigesii ♀ and Lælio-Cattleya × elegans, so that it has three parts Cattleya and one part Lælia in its parentage.

(8.) L. × DIGBYANA-MOSSIÆ, Rolfe, in *Gard. Chron.*, 1889, i., p. 742. *Lælia Digbyana* × *Mossiæ*, Veitch, *Gard. Chron.*, 1889, i., p. 630, also pp. 652, 657, 658, fig. 111; *Gardening World*, 1889, p. 613, with fig.—A hybrid, raised by Mr. Seden, for Messrs. Veitch, from Cattleya labiata var. Mossiæ ♀ and Lælia Digbyana ♂. It is a most beautiful plant, and may prove to be the forerunner of a race with fringed flowers.

(9.) L. × DOMINIANA. *Lælia Dominiana* ×, Rchb. f., in *Gard. Chron.*, 1878, ii., p. 332; *Fl. Mag.*, n.s., t. 325. *L. Dominiana rosea*, Veitch, *Gard. Chron.*, 1881, ii., p. 53, also p. 108.—A hybrid raised by Mr. Dominy, for Messrs. Veitch, but whose parentage seems somewhat uncertain. Prof. Reichenbach remarks, "a cross between Cattleya Dowiana and some Lælia, probably elegans," while Messrs. Veitch, in their *Manual*, suggest Cattleya labiata var. Mossiæ as the second parent. Mr. J. Douglas remarks of the variety rosea, that it was "from seed obtained from Cattleya exoniensis crossed with Cattleya Dowiana;" while Messrs. Veitch suggest Cattleya Dowiana and Lælia purpurata. My own impression is that the parents were Cattleya Dowiana and Lælia lobata in the former, if not in both cases. Such a parentage would account for both the unequal pollinia, and the deep rich colour of the segments.

(10.) L. × DORMANIANA. *Lælia Dormaniana* ×, Rchb. f., in *Gard. Chron.*, 1880, i., p. 168.—Brazil. A supposed natural hybrid, between Cattleya bicolor and Lælia pumila. It was discovered near Rio de Janeiro, at 1500—2000 feet elevation, by Mr. Henry Blunt, who sent plants to Mr. Henry Bullen, at Lewisham. It first flowered in the collection of Mr. C. Dorman, at Sydenham, in the spring of 1880.

(11.) L. × ELEGANS, Rolfe, in *Gard. Chron.*, 1889, i., p. 619. *Cattleya elegans*, Ch. Morr., in *Ann. de Gand.*, iv., p. 93, t. 185; *Bot. Mag.*, t. 4700; *Pescatorea*, i., t. 23; *Ill. Hort.*, t. 402. *Lælia elegans*, Rchb. f., in Otto and Dietr., *Allg. Gartenz.*, 1855, p. 242; Puydt, *Orch.*, t. 21. *Bletia elegans*, Rchb. f., in Walp., *Ann. Bot.*, vi., p. 427. *Lælia Brysiana*, Lem., in *Ill. Hort.*, 1857, t. 134.—Brazil. Discovered in 1847 on the island of Santa Catherina, by Devos, and introduced into the establishment of the late M. Ambrose Verschaffelt, of Ghent, where it flowered in the following year. Though at first described as a genuine species, it was soon suspected to be a natural hybrid between Cattleya guttata and Lælia purpurata, and there seems every reason to believe this is its real parentage. Numerous varieties, evidently derived from the same two species, have since received distinctive names, and these are here included. A few others, however, which have been described, are as clearly derived from Cattleya intermedia and Lælia purpurata, and these are enumerated under Lælio-Cattleya × Schilleriana, for it seems undesirable that hybrids of different parentage should be included under the same name, and Lælia Schilleriana, which appeared in 1855, seems to be the earliest name applied to this hybrid. L. × elegans is extremly variable, both in the form and colour of its flowers, and a number of forms have received distinctive names. Some of these are very distinct, but others I have not seen, and it appears to me that varieties might be multiplied indefinitely were every slight variation to receive a distinctive name, for scarcely any two individuals seem exactly alike. The following are the varieties in question:—

Lælia elegans var. *Bluntii*, Rchb. f., in *Bot. Zeit.*,



FIG. 14.—SEEDLING ROSE, SHOWING THE TWO COTYLEDONS, AND THE TRANSITION FROM SIMPLE TO COMPOUND LEAVES, ETC. (SEE P. 78.)

1864, p. 298 (in note). *Bletia elegans* var. *Bluntii*, Rchb. f., in *Bot. Zeit.*, 1864, p. 298.

L. elegans var. *Dayana*, Rchb., in *Bot. Zeit.*, 1864, p. 298 (in note). *Bletia elegans* var. *Dayana*, Rchb. f., in *Bot. Zeit.*, 1864, p. 298.

L. elegans var. *gigantea*, Williams, *Gard. Chron.*, 1870, p. 1125; Veitch, *Man. Orch. Pl.*, pt. 2, p. 67. *L. gigantea*, Warn., ex *Proc. Roy. Hort. Soc.*, II. (1862), p. 247; Warn., *Sel. Orch.*, ser. 1, t. 6.—From the spotted segments it is probable that Cattleya guttata var. Prinzii was one of the "parents."

L. elegans var. *Houtteana*, Rchb. f., in *Hamb. Gartenz.*, xvi. (1860), p. 281; *Lindenia*, t. 71.

L. elegans var. *incantans*, Rchb. f., in *Gard. Chron.*, 1887, ii., p. 533.

L. elegans var. *Littleana*, Little, Hogg's *Gardeners' Year-Book*, 1886, p. 65.—Messrs. Veitch make this synonymous with var. Turneri, but from a photograph received from Mr. Little, I think it distinct. The shape of the lip is very different.

L. elegans var. *lobata*, Rchb. f., in *Gard. Chron.*, 1869, p. 1158.

L. elegans var. *Measuresiana*, Rchb. f., in *Gard. Chron.*, 1887, i., p. 209.

L. elegans var. *Morreniana*, Rchb. f., ex. Warn. and Will., *Orch Alb.*, t. 331.

L. elegans var. *Nyleptha*, O'Brien, in *Gard. Chron.*, 1888, i., p. 178, with plate.

L. elegans var. *picta*, Rchb. f., in *Gard. Chron.*, 1884, i., p. 140.

L. elegans var. *platychila*, Rchb. f., in *Gard. Chron.*, 1885, ii., p. 134.

L. elegans var. *prasiata*, Rchb. f., in *Bot. Zeit.*, 1864, p. 298 (in note); Warn. and Will., *Orch. Alb.*, t. 97. *Bletia elegans* var. *prasiata*, Rchb. f., in *Bot. Zeit.*, 1864, p. 298.

L. elegans var. *prasiata indica*, Rchb. f., in *Gard. Chron.*, 1883, i., p. 11.

L. elegans var. *Tautziana*, Rchb. f., in *Gard. Chron.*, 1888, i., p. 330.

L. elegans var. *Turneri*, Veitch, *Man. Orch. Pl.*, pt. 2, p. 67. *L. Turneri*, Warn., *Sel. Orch.*, ser. 1, t. 12.

L. elegans var. *Wolstenholmiæ*, Rchb. f., in *Gard. Chron.*, 1865, p. 698; Warn., *Sel. Orch.*, ser. 2, t. 29; Warn. and Will., *Orch. Alb.*, t. 285.—The shape of the lip is very different from that of any other variety, approaching very closely *L. purpurata*. It may have arisen from the reversed cross.

L. pachystele, Rchb. f., in *Gard. Chron.*, 1888, ii., p. 596.—Growth of a middle-sized Lælia elegans; flowers twice a year. Flowers equal to those of a rather good Lælia elegans. Pollinia very unequal. Only known to me by the description, but, from the above extracts, it would appear to come in this group. *R. A. Rolfe, Herbarium, Kew.*

(*To be continued.*)

HOME CORRESPONDENCE.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest ot our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

HYBRID NARCISSUS.—I am sending to Kew, where I hope it will get more notice than in my remote garden, a very interesting hybrid Narcissus, which has more than once been mentioned in the *Gardeners' Chronicle*. It is between N. muticus (Gay) and N. juncifolius—one of the largest and coarsest of the Trumpet Daffodils, and one of the smallest of the rush-leaved section. Indeed, when we find such a cross we may fairly presume that any Narcissus will, under favourable conditions, produce hybrids with any other Narcissus. There can be no doubt that this is a hybrid; it was discovered by Mr. Henry Buxton near Gavarnie (Pyrenees), about ten years ago, and I have since received two or three small consignments from the same neighbourhood. They are found scattered sparingly where the parents grow and flower together. No other species of Narcissus occurs within many miles. The flowers vary a good deal, thus showing their independent origin. The bulbs, when growing wild, are about the size of a large Crocus bulb, but grow to three or four times that size in cultivation. The flowers, which are intermediate in size and form, between those of the parents, are generally three on each scape. The plant is more hardy than N. juncifolius—in fact, as hardy as a common Daffodil. Though I have cultivated it in some numbers for several years, I have never been able to find a good seed. *C. Wolley Dod.*

STRAWBERRY "NOBLE."—Although not thinking very highly of the flavour of this Strawberry, it will, I think, be valuable on account of its earliness and fine appearance, as fruit of it is very large, and I find it ripens several days in advance of King of the Earlies, alongside of which I have had it growing this season, so that the test is a fair one, as both are on the same border, and equally exposed to the sun. Not

only is Noble a fine-looking, showy Strawberry, but it is a free bearer, for though my plants are only last year's late runners, and consequently small, they have sent up plenty of bloom, and I hear it is a good one for forcing. This I can readily believe, as the flowers are large and bold, with pistils and anthers prominent, and they therefore ought to set well. If so, it will be a market Strawberry, and being tolerably firm, it ought to be one that will pack and travel well without bruising. *J. S.*

SHRUBBY CALCEOLARIAS.—It was refreshing to see, at the meeting of the Royal Horticultural Society held at Chiswick, an attempt made by Mr. Brown, of Handsworth, Birmingham, once more to popularise the shrubby Calceolaria. Mr. Brown comes of a good stock. His father before him made a considerable reputation as a raiser and cultivator of Calceolarias, and his son has boldly entered upon what is now an almost untrodden floricultural path, and is endeavouring to improve the few varieties of shrubby Calceolarias which yet remain to us. From an old variety named Cole's Gem he obtained a little seed, and from this seed he raised one named Sir Rowland, yellow, with dark spots, and a few others. Seed from these gave the varieties Mr. Brown exhibited at Chiswick on the 9th inst., and I think they deserved more attention than they appeared to have received. All of Mr. Brown's new strains have the true shrubby habit, and they are persistent in blooming; and in this respect—and certainly not one of the least importance—they have a great advantage over those of the herbaceous type. Besides, Mr. Brown says that they make excellent bedders, standing the weather well, and flowering freely and continuously. The leading varieties shown by Mr. Brown were Sir Garnet, crimson-maroon, slightly spotted with yellow; Cossack, bronzy-crimson, spotted with yellow; Ethel Brown, orange-red, blotched and spotted with yellow; Arthur West, gold, with crimson markings; Strawberry, orange-red, with slight golden reticulations; Negro, rich crimson-maroon; Her Majesty, maroon, reticulated with gold; Cluster, in the same way, but having more yellow—quite distinct; The Shah, crimson-maroon, reticulated with gold; Phenomenal, carmine, with dark lines, and slight golden markings—large; Buffalo Bill, rich maroon, reticulated with gold; and some seedlings. Most of the foregoing had flowered for the first time, and all had the stout, stocky, growth, peculiar to the shrubby section. The size of a few of the flowers appeared to me to be particularly encouraging. Of our finest strains of herbaceous Calceolarias in the present day, it can truly be said that not only are the flowers large, coarse, and baggy, but their constitutional vigour has deteriorated. I think these shrubby varieties can be made of great service. What is wanted is, that someone should take them up, and without in any way, if it can possibly be avoided, weakening the habit of growth, endeavor to secure enlargement and variety in the flowers, and especially keep in view one main quality too much neglected in the present day—that of form. I do not see, having regard to the already marked improvement in the direction of size seen in Phenomenal and two or three others of Mr. Brown's seedlings, why in a very few generations of other seedlings there should not be a striking advance in the direction of increase of size. *R. D.*

STRAWBERRY BRITISH QUEEN.—In this age of novelties some of the old and best-flavoured of our Strawberries are apt to be overlooked. Such was our impression when going through the well-managed kitchen garden at The Deepdene, Dorking, with Mr. Burnett, recently. Here most of the newer sorts are represented, some having size to commend them, others colour; some were prolific croppers, while earliness recommended others. For the market, where appearance is nearly everything, the well-known Sir J. Paxton is highly esteemed, although that kind at its best is only second-rate, has a fine appearance, and, above all, the necessary firmness, which makes a good carrying berry. After testing many varieties, I found none of the new comers have the exquisitely fine flavour of British Queen, which, taken together with its good form and fair cropping qualities (indeed, we have frequently seen it crop heavily), has thus all the attributes of a first-class Strawberry, especially the flavour, which, after all, is more what we grow Strawberries for than mere size, unless for market purposes, when of course the public taste must be catered for (!); but in private gardens flavour ought to be the first consideration, and in the old British Queen this will be difficult to beat. *F. R.* [Unfortunately the British Queen is particular as to soil, and is not very hardy, and in every season but a very exceptionally warm one the tip of the fruit remains green or nearly so. Planted on a south border, at wide distances apart, the plants, say, 2½ to 3 feet, without the pernicious intercropping of salading, Violets, and the like, which rows standing wide apart always seem to tempt the gardener into doing, the fruit will ripen off well generally, and the crowns mature thoroughly, without which they will prove miffey. Ed.]

SUMMER GROWTHS.—Although we have experienced what is with us too unfrequent—hot weather, still growth in every direction seems to have been good, and only on very shallow soils have roots felt the drought. In spite of the warmth and the dry state of the ground, vegetable crops seem to have held up bravely, and the work of getting out the usual millions of winter green plants has gone on, some planters watering as they went, some not so; but now having had a very heavy rainfall, everything put out is rooted; whilst everything being put out finds moist soil, very warm and exciting to root action. The rain has saved the early Potatos, and benefited the late ones; also the Peas, and has helped to set the bloom on the Beans, for which we cannot be too thankful, as the breadths are thin this year, and every bloom had need to be fertile. While it is a comparatively poor fruit grower's year, it promises to be a very good one for the vegetable grower and the farmer, for ground crops on the whole are excellent. Early Potatos are being got up clean and good. Early Peas are cleared off, and the ground at once replanted; and planting follows the Potatos. Early sowings of Turnips have now a good prospect for making a plant. We have had a fine time for the destruction of weeds, and the soil generally is clean. Fruit trees are making good growth, which will with a fine autumn ripen well, and create great promise for next year. All sorts of hardy plants, even Primroses, Polyanthuses, Violas?—all too readily devoured by thrips—are green and vigorous, and already making strong growth. The recent rains have come at an excellent time, and should we have fine weather later, a good many Chestnuts will have been pulled out of the fire; whilst, on the other hand, a wet autumn would be productive of great disaster. So far, however, the season has been a good one. *A. D.*

SPIRÆA PALMATA.—Nothing can exceed the beauty of this Spiræa, which has been remarkably fine with us this season, its massive violet-pink heads of flowers being charming to see when the light plays upon them. Those who have seen this plant only when planted in dry borders, have no idea what an altogether more beautiful object it is in places that suit it. Like all the Meadow Sweets, it delights in a moist soil, and in such the plant grows well, and merely demands that the moisture be not stagnant in the soil. Where our fine plants are located is near to small water-courses, and there they grow from 3 to 4 feet high, and produce grand heads of bloom. For a time, rabbits and hares were a bother to us, as they had a partiality to the young shoots, and so we have guarded the plants by placing a piece of wire netting round each. With this lovely Spiræa to breed from, we ought soon to have other forms, as no doubt this, and such as S. japonica would cross; besides, we have the tall kinds, S. aruncus, S. ariæfolia, S. callosa, S. Douglasii, and such like to work at. If they will interbreed, there exists a fine field for the hybridist, as hardy flowering plants have always a value far beyond many of those now grown with trouble and expense under glass; and to get a good new variety might possibly be a great advantage to the gardener. *J. S.*

LATHYRUS DRUMMONDI.—I can find no description of a Pea of this name, nor even authority for the name, which I had on a label in my garden some years ago placed against L. rotundifolius (Willd.), which is figured by Sweet (*Eng. Fl. Garden*, series ii., t. 333), and described by E. Boissier and others as a native of Transylvania and South-Eastern Russia, as well as of Western Asia, but no authority I can find mentions L. Drummondi as a synonym. As regards L. Sibthorpii, of which there seems to have been no portrait up to 1855 (see Pritzel's *Index*), I have in vain tried to grow it as a hardy plant at Edge; but at a flower show near Chester, on July 11, a fine bunch of flowers of it was exhibited amongst a collection of hardy herbaceous flowers, and was the most striking feature in all the hardy collections. I have wrongly supposed this, from the name, to be from the Levant, but "A. D." says it is Australian. I can find no description of it. De Candolle does not include it in his *Prodromus*. *C. Wolley Dod, Edge Hall, July* 13.

THE PHYSIC GARDEN, OXFORD.—"Through England on a Side-saddle in the Time of William and Mary, being the Diary of Celia Fiennes." (1888.) In this interesting Diary the following passage occurs:—"The Physick Garden" (at Oxford) "afforded great diversion and pleaure; the variety of flowers and plants would have entertained one a week. . . . There is also y^e^ sensible plant. Take but a Leafe between finger and thumb, and squeeze it, and it immediately Curles up together as if pained, and after some tyme opens abroad again. It looks in collour like a filbert Leafe, but much narrower, and long. There is also the humble plant that grows on a long, slender stalke, and do but strike it, it falls flatt on y^e^ ground, stalke and all, and after some tyme revives againe, and stands up; but these are nice plants, and are kept mostly under glass's, y^e^ aire being too rough for them." What is the latter plant mentioned? *H. M. V.*

ROYAL HORTICULTURAL CERTIFICATES.—I beg to throw out a suggestion, that in case of floral or other certificates being awarded at our "horticultural meetings," that the proposer, seconder, and even voters' names should be published. This matter, I notice, is always suppressed, and apparently it is of no moment; but I am convinced that not a few horticulturists would be pleased to see a step in the indicated direction. These remarks of mine are due to my having read the report of this matter in the last issue of the *Gardeners' Chronicle*. *A. F. Upstone.*

THE SHIRLEY POPPIES.—If "A. D." wished to pay an extra compliment to these Poppies—or their raiser—he might have done so without the, to say the least of it, somewhat paradoxical method adopted at p. 19. That care will be required to preserve and maintain the constancy of the strain, see what the raiser says at p. 308 of the last volume of the *Gardeners' Chronicle*, where he says:—"I now get very few rogues, but still every year one or two will run back to the old black blood, and nothing but patient perseverance in destroying them will keep the strain pure." Thus clearly enough, the raiser himself thinks that continued selection is still necessary to maintain the constancy of the strain; but "A. D." tacitly admits as much, where, in a sentence farther on, he says:—"We hardly know yet how much of beauty there may be lying in this strain," which may fairly be construed as implying that the strain is still in process of evolution. Thus, although "A. D." cannot comprehend why I should suggest anything as to their inconstancy, yet he has no diffidence about doing it himself. But be all this as it may, since writing at p. 775 of last volume, I have had several opportunities of seeing those Poppies under various conditions, where bunches of selected flowers were put up in the exhibition tent. They were the Shirley Poppies, every inch of them, but when viewed in the mass in the garden, much would be seen that could lay no claim whatever to be called Shirley Poppies; indeed, in the Royal Horticultural Society's garden, where there is a breadth on trial, we saw an eminent authority cull from amongst them specimens of what he declared was the type of their primæval progenitors—this without a doubt proving that much care in selecting seed will be necessary to maintain the strain. And I sincerely hope that growers of seed may give this matter the attention it requires. I may also mention that in another garden I saw a large breadth of them, where matters were worse than in the Royal Horticultural Society's Gardens; close to them there was also a breadth of the so-called P. Hookeri, and it seemed to me that they were very little removed from each other. Indeed, I have noticed a slight tendency in the Shirley towards doubling, which if developed would simply give us the double form of P. Hookeri. Without going further into the matter, I venture to think there is clear evidence that my remark anent their constancy of character was perfectly justifiable—beautiful as the Shirley Poppies are. *F. R.*

SLUGS.—Being engaged in collecting information respecting the facilities possessed by slugs (Limax and Arion), for ascertaining the whereabouts of their food, I beg to invite the co-operation of the readers of the *Gardeners' Chronicle*. Any notes on

this subject with which I may be favoured will be welcomed and carefully acknowledged. I should be particularly glad to hear from bee-keepers as to whether they are accustomed to see slugs entering their hives. *H. Wallis-Kew*, 112, *Hanley Road, Stroud Green, London, N.*

PROLIFICATION IN LILIUM AURATUM. — At Alderley Edge last week I found among some plants of L. auratum, which had evidently suffered from the continuous drought, one very abnormal head of flowers. In one flower, petals, sepals, and stamens were all there, correct as to number and form, but instead of the ovary with its single style, were, seemingly, a dozen or more free carpels, each terminated by a conspicuous style and stigma. Closer examination showed me that the floral axis was pushing out through the original three-celled ovary (normal to all of the Lily tribe), and in its unusual growth it had separated the three carpels one from another. These carpels so separated, and pushed to one side by the extending axis, bore upon their edges numerous ovules. This might be expected by all who uphold the "carpellary theory," but what strange freak was it which determined that all the parts of the second flower, which in so unceremonious a manner poked through the centre of the first, should be carpels each with style and stigma, some even bearing ovules? In the centre of all, terminating the aggressive axis, was an ordinary trilocular ovary, but the number of the abnormal carpellary leaves surrounding it was not sufficient to account for the six parts of the perianth and the six stamens. Instead of twelve there were but nine. Another flower showed the abnormality just about to appear, in which the curious styles were just pushing through the syncarpous ovary, which was likely to be ruptured, as in the older flower. I do not know whether this case of a further growth of the axis when once the flowers had been formed may be at all accounted for by anything in the unusual weather of the last few weeks; but it is perhaps worthy of note, that I had a few days previous been struck with the widespread phenomenon of a second growth at the ends of the branches of many of the trees in the neighbourhood of Manchester. Such is quite homologous, if of commoner occurrence. *Philip Sewell.*

SOCIETIES.

EDINBURGH BOTANICAL.

July 11.—The last meeting of this session was held in the class-room, Royal Botanic Garden, Dr. Craig, President, in the chair.

Dr. Buchanan White communicated a critical paper on the Willows in the University Herbarium, which was illustrated by specimens. Professor T. Fraser read an obituary notice of the late Professor Dickson. Mr. A. Taylor communicated obituary notices of the late Churchill Babington, D.D., and John Percy, M.D., F.R.S., both early members of the Society.

The following is Mr. Lindsay's Report on Vegetation and Temperature in the Royal Botanic Garden for June:—

"The past month of June has been one of the finest recorded, the beneficial effects of which will probably be felt more next season even than this. Just as many of our garden plants are still suffering from the bad effects of the previous cold summer, so we may not expect to reap the full benefit of the splendid weather of the last two months till next season. The foliage of all forest and ornamental trees is now complete, and remarkably fine. Aphides, caterpillar, and other insect pests have been very abundant, owing to the prolonged drought, and in many parts of the country the leaves of Beech, Oak, and Lime trees, have been very much injured by their ravages; here no serious damage has been done as yet.

"Nearly all variegated plants have developed richly coloured leaves, Conifers being particularly bright. Generally speaking, flowers are less abundant on most plants than usual. Elder seems to be an exception here. A very large number of plants came into flower in the rock-garden during June, no fewer than 444 species and varieties having been counted, many of which went quickly past out of flower. The lowest night temperature was 35°, which was recorded on the 11th of the month. Other low readings were on the 5th, 40°; 6th, 42°; 8th, 39°; 13th, 42°. The lowest day temperature was 56°, on the 2nd; and the highest 85°, on the 26th of the month. Rain fell on five days only. A few of the more interesting plants in flower on the rock-garden were:—

Androsace foliosa
,, lanuginosa
,, ,, Leichtlini
Aquilegia pyrenaica
Cyananthus lobatus
Cypripedium parviflorum
Campanula Allioni
Edraianthus caudatus
,, pumiliorum
Dianthus neglectus
,, superbus
Eriophorum alpinum
Exarrhena Lyallii
Gentiana lutea
Gillenia trifoliata
Leontopodium alpinum
Linaria origanifolia
Mulgedium alpinum
Nardostachys Iatamansi
Orchis maculata superba
,, foliosa
Oxalis braziliensis
Pentstemon pubescens
,, secundiflorus
Primula capitata
Rosa pyrenaica
Rhododendron ferrugineum album
Ranunculus parnassifolius
Saxifraga odontophylla
,, valdensis
Saponaria cæspitosa
Senecio laxiflorus
Vella spinosa, &c."

From the garden a large number of insectivorous plants were exhibited, amongst which were:—

Nepenthes Khasyana, N. sanguinea
,, ×Mastersiana
,, Rafflesiana, N.Veitchii
,, ×Dicksoniana
,, Rafflesiana, Chelsoni
,, ×Edinensis
,, Curtisii
,, ×cylindrica
,, distillatoria
,, ampullaria
,, ×Dormanniana
,, ×hybrida maculata
Sarracenia purpurea
,, Drummondi
,, flava
,, ,, ornata
,, crispata
,, rubra
,, variolaris
Sarracenia × Chelsoni
,, ×Maddisoniana
,, ×Mesoniana
,, ×Patersoni
,, ×Flambeau
,, ×Illustrata
Darlingtonia californica
Roridula dentata
Drosera binata
,, Burkei
,, capillaris
,, dichotoma
,, longifolia
,, capensis
,, rotundifolia
,, spathulata
Drosophyllum lusitanicum
Dionæa muscipula
Cephalotus follicularis
Pinguicula caudata

Mr. Bullen's was a similar report for the Glasgow Botanic Garden for the same month, as follows:—

On Temperature and Vegetation, &c., at the Botanic Garden, Glasgow, for June.—This is the most tropical-like month recorded here, not even excepting the corresponding month of 1887, which was remarkable for its great heat. A severe thunderstorm was experienced on the afternoon of the 2nd. Since then we have had no rain worth recording, consequently all kinds of garden crops are suffering from lack of moisture. Hardy shrubs recently transplanted, and those under the shade of large trees, are suffering much. The strongest kinds of hardy herbaceous plants have grown and bloomed remarkably well on our heavy soil. Of the spring-sown annuals few have germinated, and these have had a severe struggle for life. The lowest night temperature during the month was 38° on the night of the 10th, but with this exception, the nights have been very warm, varying from 45° to 53°.

On no one day or night has the temperature been so high as recorded for some few days and nights in June, 1887, but the heat has been more continuous, the thermometer in the sun having registered upwards of 100° on twenty days, the highest reading being 129° on the 22nd. The temperature in the shade at the same time was 78°.

PORTSMOUTH.

July 9.—The summer exhibition of the Chrysanthemum Society of Portsmouth, is usually held with the object of benefiting the local benevolent institutions, took place in the Victoria Park, and so far as the horticultural part of it was concerned it was regarded as being successful, and we hope that the financial part of the undertaking was equally successful, as it deserved to be.

Plants in pots formed the larger part of the objects exhibited, and were shown in large numbers, making as a whole an imposing display. The principal class was that for twelve specimen plants, not less than half of the number to be in bloom. In this competition there were three entries: Mr. J. Cypher, of Cheltenham, was an easy 1st, with excellently flowered plants, and foliage plants, which if not of the enormous size sometimes shown by him, were fine objects in robust health; Latania borbonica, and Croton Queen Victoria, especially the latter, being very finely coloured, whilst the Allamandas—Hendersoni and nobilis—Statice profusa, Erica Parmenteriana and Ixora Williamsii, were freely flowered. Mr. E. Wills, gr. to Mrs. Pearce, Bassett, near Southampton, was a good 2nd. Amongst his plants were Statice profusa, quite 5 feet in diameter, and freely flowered; Impatiens Hawkeri, fully 6 feet in diameter of head, and very rich in colour; and a beautiful specimen of Clerodendron Balfourianum.

The class for four specimen stove or greenhouse plants was the occasion for much spirited competition. The best collection came from Mr. Curry, gr. to Colonel Pepper, Milford Hall, Salisbury, and amongst them we noted a capital plant of Croton Prince of Wales, and a Rondeletia speciosa; Mr. C. Penford, gr. to Sir F. Fitz-Wygram, Bart., M.P., Leigh Park, Havant, was 2nd, a nicely flowered Trachelospermum jasminoides was one of his best plants.

The groups, which were displayed to show effect by the use of a variety of plants, brought many competitors. Some groups showed much taste and skill in the use of materials, and out of eight rivals, Mr. Wills was adjudged the best; and Mr. Penford, with plants taller and brighter in colour, was 2nd.

Messrs. W. & J. F. Legge, nurserymen, Gosport, were placed 1st for three Palms, large varieties, of indifferent quality; Mr. Wills, with a more modern species, was 2nd.

Mr. Wills was 1st for three specimens, and also for one specimen Fern, having, in the larger class, healthy plants of Microlepia hirta cristata, Cibotium spectabile, and Davallia Mooreana; Mr. Penford followed in both classes, showing well.

For one specimen plant in bloom, there was a spirited competition. Mr. Cypher took 1st honours with a freely flowered Erica Juliana, very fresh; Mr. Penford followed with Statice profusa.

Fuchsias were well shown by Mr. Hatch, gr. to the Victoria Park Committee, and who also took 1st honours for a capital group of plants, open only to residents on Portsea Island.

Mr. H. C. Gale, gr. to G. E. Kent, Esq., Stubbington Lodge, Portsmouth, staged the best Coleus, pyramids, 4—5 feet in height, well-grown and coloured.

Mr. Hawkins, gr. to G. E. Bishop, Esq., The Lawns, Swanwick, had the best zonal Geraniums, Cockscombs, Caladiums, and Petunias, in each class were of considerable merit. Mr. Wills had the best table plants.

Cut flowers were not numerous, but the quality was good. Mr. Penford was 1st, for twelve bunches, stove or greenhouse, having, amongst others, Vanda suavis, Nelumbium chinense, and Erica ventricosa major; Mr. R. H. Guy, Palmerston Road, Southsea, was a good 2nd. There was a brisk competition for the same number of hardy herbaceous varieties. Mr. B. Ladhams, florist, Shirley, Southampton, led the way with a capital lot.

The fruit staged was of good quality in most cases. For six dishes, Pines excluded, there was but two entries—1st, Mr. G. Inglefield, gr. to Sir J. W. Kelk, Bart., Tedworth, Marlborough, who had Muscat of Alexandria and Black Hamburgh Grapes Hero of Lockinge Melon, Royal George Peaches, Brown Turkey Figs, and President Strawberries. Mr. Penford was the other exhibitor, having Penrhyn Castle Melon, Lord Napier Nectarine, and Stirling Castle Peaches. For three bunches of black Grapes Mr. W. Tait, gr. to General Napier, Oaklands, Cosham, was 1st, with Black Hamburgh, fair in size and colour, good berries; Mr. Inglefield followed with same variety, the bunches being shapely. The best greenflesh Melon was Hero of Lockinge, shown by Mr. Inglefield, and who also staged the best dish of Royal George Peaches; Mr. T. Wilkins, gr. to Lady Theodora Guest, Inwood House, Henstridge, Blandford, was a good 2nd.

Vegetables made a good show. The principal class was that for nine sorts, two of Potatos allowed. 1st, Mr. Inglefield, who had well-grown Trophy Tomatos, Green Globe Artichokes, Canadian Wonder French Beans, and Sutton's Seedling Potatos, the latter of especial excellence; Mr. Wilkins was a very close 2nd, White Tripoli Onions, Tomatos, and first-rate Peas were amongst his best things. Tomatos were a strong class, and excellent fruits of Trophy were shown by Mr. Inglefield. Cucumbers of good quality and in large numbers were observed.

Cut blooms of Roses of the leading varieties were staged, not for competition, by Messrs. Ewing & Co., Nurseries, Havant, around which were placed cut shoots of shrubs both of the flowering and foliage sections; and a capital lot of hardy herbaceous cut flowers, also marked not for competition, were contributed by Mr. Ladhams, florist, Shirley.

EALING HORTICULTURAL.

July 10. — This popular suburban Society was distinctly unfortunate in having amidst the glorious weather we have been favoured with this summer, so inclement a day as was the 10th, rain falling heavily during the morning, and wind of the fiercest prevailing in the afternoon; still, there was

a fine show, and a large attendance later in the day. The tents were six in number, all being large and well filled; and so numerous are the classes at Ealing, that no fewer than five sets of judges are utilised. The chief plant feature was found in the many charming miscellaneous and competitive groups set up, for, as elsewhere, show plants are gradually becoming fewer, and the whole of the competitions, with one exception, are restricted to the district. Messrs. Fromow & Sons repeated their fine group seen at Chiswick the previous day. Mr. Chadwick (gr. to E. M. Nelson, Esq., Hanger Hill House, in whose delightful grounds the show was held) had a very beautiful miscellaneous group, so also had Mr. Roberts, from Gunnersbury Park Gardens; Orchids, Ixoras, and Gloxinias proving exceedingly effective, as also did some fine Malmaison Carnations.

Messrs. C. Lee & Sons, Hammersmith, arranged one of their fine groups of hardy trees and shrubs; and Mr. Charles Turner, Slough, sent a basket of scarlet Malmaison Carnations, and some beautiful flowers of various other kinds.

With competitive groups, Mr. A. Wright, Devonhurst, Chiswick, was 1st; Mr. Viner, gr. to R. B. Daw, Esq., coming 2nd, both having pretty arrangements.

Chief amongst flowering plants came Fuchsias, which were finely grown and bloomed, but none were named. Mr. W. Wright, gr. to E. B. Greenfield, Esq., Hanwell, had the best four; Mr. Wigmore, gr. to F. Hicks, Esq., having the best pair—all tall pyramids. Mr. W. Wright came 1st with four well-flowered zonal Pelargoniums. There was a large competition in this class. Begonias were good, Mr. A. Wright having the best six plants, very finely flowered. Mr. Davis had the best six Gloxinias, also superb plants; with Mr. A. Wright 2nd, with specimen stove and greenhouse plants. Mr. Viner, was 1st with a capital Bougainvillea glabra; Mr. A. Wright coming 2nd with a good Clerodendron Balfouriana, whilst a good Eucharis took the 3rd place. A fine pyramid of Asparagus plumosus was the best foliage plant.

Roses.—With these was formed the only open class of the show, the trade competing well for the honour of winning the prizes in the one for twenty-four trebles. Here Messrs. Paul & Sons, Cheshunt, were 1st with a superb lot of blooms, amongst which Merveille de Lyon, Niphetos, Her Majesty, Lady Mary Fitzwilliam, Duchess de Morny, Countess of Rosebery, Horace Vernet, and A. K. Williams, were very fine blooms. Messrs. Jas. Veitch & Sons exhibited a brilliant lot of blooms, both of show flowers and cluster Roses, also adding bearded Irises and Shirley Poppies, very lovely. Roses were plentiful from local exhibitors. Mr. J. Cransford, Ealing, sent a huge window-box, filled in fan-shape with Lilium candidum.

Mrs. H. B. Smith, of Ealing, exhibited some beautiful floral combinations in baskets, bouquets, a huge horseshoe composed of pink Carnations and Roses, all attractive.

Gloxinias in bunches made a charming class, and many fine flowers were shown. Mr. Eaton, gr. to H. Bonnin, Esq., had the best.

Mr. H. Collyer, gr. to Mrs. Murrell, Ealing, had the best twelve bunches of show Pelargoniums; Mr. Sutton, gr. to Mrs. Wilkinson, coming next. Mr. Beesley, gr. to A. Fraser, Esq., had the best twelve bunches of hardy flowers.

Floral table decorations were chiefly set up by ladies, whose exhibits were very attractive, as also were the various baskets and bouquets.

Fruit was very well shown, the best four dishes coming from Mr. Chadwick, who had Muscat of Alexandria Grapes, Royal George Peaches, &c. Mr. Chadwick was also 1st, with six dishes of hardy fruits, and had in Black Tartarian the best dishes of Cherries.

Very fine bunches of Duke of Buccleuch and Buckland's Sweetwater Grapes got Mr. Viner the 1st prize in one class, and he was also 1st in blacks, with good Hamburghs.

Strawberries and various other fruits were well shown, but it is impossible to refer to one tithe of the classes.

Vegetables are always a very fine feature at Ealing, even the cottagers competing in the open class with remarkable boldness, as well as in their own section.

Mr. Edwards, gr. to W. Owen, Esq., had the best six dishes.

Mr. W. Wright had the best three dishes of Potatos. Telephone and Duke of Albany were the finest and chief Peas shown. Mr. Holden, gr. to C. J. Amherst, Esq., took 1st place in Beans, with fine Seville. Mr. W. Wright had the best Tomatos, and Mr. Chadwick very fine clean Cauliflowers.

WOLVERHAMPTON.

JULY 16, 17, and 18.—This was the first of what, it is hoped, will prove a series of annual exhibitions on a large scale in this town. It was organised and carried out with considerable spirit, the Mayor of Wolverhampton being the President, and the show took place in the public park. Four large tents were required to take the exhibits, but they were scarcely lofty enough to do justice to the leading exhibits; the staging arrangements, also, are capable of improvement, but any defects will, no doubt, be remedied another year.

The leading features of the show were found in the classes open to all. A handsome prize of £20 was offered for the best collection of sixteen stove and greenhouse plants; and here Mr. James Cypher, Cheltenham, led, having a very fine lot indeed, his flowering plants consisting of a huge Phœnocoma prolifera Burnesii, Statice profusa, Clerodendron Balfourianum, Ixora salicifolia, I. regina, I. Fraseri, Allamanda nobilis, A. grandiflora, Erica Parmenteriana, and E. Irbyana. His foliage plants were a huge Latania borbonica, Cycas circinalis, Cordyline indivisa, and Crotons Queen Victoria, Sunset, and Thomsoni. In addition this received the Mayor's special prize of 5 guineas for the most meritorious exhibit in the show. Mr. W. Finch, gr. to J. Marriott, Esq., Coventry, was 2nd; he had an excellent piece of Ixora Duffi, with seven fine and well-coloured trusses; I. Williamsii, Statice profusa, Erica Shannoni, E. Juliana rubra, E. Parmenteriana rosea, E. repressa, and Kalosanthes coccinea; his leading foliaged plants, Cycas revoluta, C. circinalis, Kentias Fosteriana and australis, Croton Johannis, and Dasylirion acrotrichum.

Mr. Cypher was the only exhibitor of six plants in flower, and was placed 1st with Allamanda grandiflora, Ixora Williamsii, I. Pilgrimii, Kalosanthes coccinia, Erica Parmenteriana, and E. Juliana.

The best group of plants, arranged for effect, covering a space not to exceed 140 feet, came from Mr. W. H. Dyer, gr. to Mrs. Marigold, Edgbaston, Birmingham—this showed some skill in effective arrangements; the names of the others were heaped up as if so many piles of rubbish to be set on fire.

Mr. Cypher had the best six exotic Ferns, staging fine examples. In the class for six Palms, Mr. Cypher was again 1st with a very fine lot, consisting of Kentias Balmoreana, K. australis, and Fosteriana, and Astrocaryum rostratum.

In the open classes, cut Roses were a very good feature, Messrs. Cranston & Co., Hereford, were 1st with forty-eight blooms, having Ulrich Brunner, La France, Mrs. C. Wood, Star of Waltham, Heinrich Schultheis, Princess Beatrice, Countess of Oxford, Duke of Edinburgh, Madame C. Crapelet, Rosiériste Jacobs, Duchess of Bedford, Marie Finger, Countess of Rosebery, Prince Arthur, Eclair, Reynolds Hole, Louis Van Houtte, Earl of Pembroke, &c. Messrs. Perkins & Son, nurserymen, Coventry, had the best thirty-six blooms, staging Ulrich Brunner, Countess of Rosebery, Mrs. J. Laing, Horace Vernet, Devienne Launy, Harrison Weir, Marguerite Dombrain, Emille Hansbergh. Messrs. Perkins & Sons had the best twenty-four varieties. The best twelve blooms of any dark Rose came from Messrs. J. Cranston & Co., who had Alfred Colomb. Messrs. Cranston & Co. had the best twelve light, showing La France.

In the gentlemen's gardeners and amateurs' divisions there were on the whole good competitions. Mr. W. H. Dyer had the best six stove and greenhouse plants; staging two very fine Crotons Queen Victoria and Weismanni, Latania borbonica, Allamanda Hendersonii, and Stephanotis floribunda. Mr. Finch had the best six Orchids, staging fine specimens of Cattleya Gaskelliana and Lælia purpurata; with smaller but well-bloomed ones of Cattleya gigas, Aërides callosum, Odontoglossum Alexandræ, and Miltonia vexillaria. Mr. Dyer also had the best six exotic Ferns, a very good lot; and he also had the best arranged group of plants, covering a space of 100 feet.

Coleus were very good, shown in the form of well-grown and coloured specimens. Zonal Pelargoniums were also a good feature.

In the other cut-flower classes, Mr. Finch was 1st, with a very fine collection of twenty-four distinct varieties. Some very good cut zonal Pelargoniums were staged also.

Fruit and vegetables were limited in quantity. There were classes for vegetables for cottagers, who showed well all along the line.

Miscellaneous exhibits were a striking feature. Messrs. R. H. Vertegans & Co., of Birmingham, had a large collection of cut flowers, bouquets, &c. Double Potentillas being a feature of especial excellence. Mr. R. Lowe, nurseryman, Wolverhampton, had collections of plants, cut flowers, wreaths, &c. Messrs. E. Webb & Sons, seedsmen, Stourbridge, had choice vegetables. Mr. J. H. Blackwell, Darlington Street, Wolverhampton, had a trophy of plumes of Pampas-grass and various others. Mr. A. R. Brown, Handsworth, Birmingham, cut blooms of Carnations and Picotees. Messrs. R. Smith & Co., St. John's nursery, Worcester, collections of cut flowers, including Roses, Clematis, &c. Messrs. Hewett & Co., nurserymen, Solihull, cut blooms of hardy plants. Mr. William Dean, Mill Lane Nursery, Solihull, bunches of cut blooms of pretty bedding Violas, such new and novel forms as The Mearns, Lady Amory, Rev. J. Tilly, Mrs. Baxter, and Duchess of Albany; and Mr. M. Smout, of Hastings, a remarkable collection of ocean flowers, Seaweeds, Corallines, &c.

The judges were entertained at luncheon after the awards were made, the Mayor presiding, a very large number of ladies and gentlemen being present.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature.						Rainfall.			Bright Sun.	
	Above (+) or below (—) the Mean for the week ending July 15.	Accumulated.					More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.		Below 42°, difference from Mean since Jan. 1, 1889.					
		Day-deg.	Day-deg.	Day-deg.		Day-deg.	10ths Inch.		In.		
1	3 —	69	0	+ 192	+	4	2 —	129	19.9	23	25
2	3 —	83	0	+ 87	+	5	5 +	101	12.1	23	31
3	2 —	110	0	+ 68	+	7	4 +	92	11.1	16	29
4	1 —	135	0	+ 48	+	112	17 +	97	13.4	30	30
5	2 —	122	0	+ 68	+	60	12 +	91	15.8	23	28
6	0 av.	139	0	+ 102	+	75	5 +	96	12.1	24	29
7	2 —	95	0	+ 124	—	23	7 +	106	19.8	24	33
8	2 —	111	0	+ 100	—	1	4 +	97	14.2	29	32
9	2 —	120	0	+ 38	+	88	6 +	95	17.1	31	35
10	3 —	96	0	+ 75	—	53	4 +	118	17.2	30	28
11	3 —	102	0	+ 46	—	14	3 —	105	16.8	43	34
12	0 av.	136	0	+ 111	—	16	3 +	105	13.7	28	39

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 15, is furnished from the Meteorological Office:—

"The *weather* has been in an unsettled condition very generally. Frequent falls of rain have been experienced, with occasional thunder and lightning. The rainfall which occurred over south-eastern England on the 12th was extremely heavy in some localities; at Cambridge the fall amounted to 2·15 inches, and at Rothamsted to 3·06 inches.

"The *temperature* has just equalled the mean in 'England, S.,' and the 'Channel Islands,' but in all other districts it has been less. The highest of the maxima, which were registered on somewhat irregular dates, ranged from 68° in 'Scotland, N.,' to 77° in 'England, S.' The lowest of the minima were

recorded in most places on the 9th, and varied from 35° in the north and west of Scotland, to 47° in 'England, S.,' and 54° in the 'Channel Islands.'

"*Rainfall* has been less than the mean in 'Scotland, N.,' and 'Ireland, S.,' but more in all other districts; in the 'Midland Counties' and 'England, E.,' the excess has been very large.

"*Bright sunshine* shows a considerable and general decrease, the percentage of the possible amount of duration having ranged from 16 in 'England, N.E.,' to 31 in 'England, S.W.,' and to 43 in 'Ireland, S.'"

MARKETS.

COVENT GARDEN, July 18.

Market now heavily supplied with hothouse fruit, and prices are receding. Soft fruit is supplied in medium quantity, and prices are firm. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	5 0–	8 0	Lemons, per case	12 0–	21 0
Currants, Black, ½-sieve	4 0–	6 0	Peaches, per doz.	6 0–	15 0
— Red, ½-sieve	3 6–	4 0	Pine-apples, Eng., lb.	1 6–	3 0
Gooseberries, ½-sieve	3 0–	3 6	— St. Michael, each	2 0–	6 0
Grapes, per lb.	0 6–	2 6	Strawberries, per lb.	0 4–	1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, English, per 100	5 0–	...	Mushrooms, punnet	1 6–	...
Beans, Jersey French, per lb.	0 6–	...	Mustard and Cress, punnet	0 4–	...
Beet, red, per dozen	1 0–	2 0	Onions, per bunch	0 5–	...
Carrots, per bunch	0 6–	...	Parsley, per lb.	0 6–	...
Cauliflowers, each	0 6–	...	Peas, per quart	1 3–	...
Celery, per bundle	1 6–	2 0	Potatos, new Jsy., lb.	0 3–	...
Cucumbers, each	0 6–	0 9	Rhubarb, bundle	0 6–	...
Endive, per dozen	2 6–	...	Shallots, per lb.	0 6–	...
Green Mint, bunch	0 4–	...	Spinach, per bushel	3 6–	...
Herbs, per bunch	0 4–	...	Tomatos, per lb.	1 0–	...
Leeks, per bunch	0 3–	...	Turnips, per bunch, new	0 5–	...
Lettuce, per dozen	1 6–	...			

Potatos.—Jersey and French supplies have been heavy at 3*s.* 6*d.* to 5*s.* per cwt., Home-grown coming to hand in large consignments, and prices rule low; Kidneys, 4*s.* 6*d.* to 5*s.* 6*d.*; Beauties, 3*s.* 6*d.* to 4*s.* 6*d.* per cwt. Market dull. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	18 0	Ficus elastica, each	1 6–	7 0
Arum Lilies, p. doz.	6 0–	12 0	Fuchsias, dozen	3 0–	8 0
Balsams, doz.	4 0–	6 0	Hydrangea, per doz.	9 0–	18 0
Begonias, dozen	4 0–	12 0	Lilium lancefolium, per dozen	18 0–	30 0
Cactus, per dozen	9 0–	18 0	— auratum, doz.	12 0–	30 0
Calceolarias, dozen	4 0–	9 0	— longefolium, doz.	12 0–	24 0
Crassula, per dozen	12 0–	30 0	Lobelias, dozen	3 0–	5 0
Cyperus, per dozen	4 0–	12 0	Marguerites, doz.	6 0–	12 0
Dracæna terminalis, per dozen	30 0–	60 0	Mignonette, doz.	3 0–	6 0
— viridis, per doz.	12 0–	24 0	Musk, dozen	2 0–	4 0
Erica, various, doz.	12 0–	30 0	Nasturtiums, doz.	3 0–	5 0
Euonymus, in var., per dozen	6 0–	18 0	Palms in var., each	2 6–	21 0
Evergreens, in var., per dozen	6 0–	24 0	Pelargoniums, per dozen	6 0–	15 0
Ferns, in var., doz.	4 0–	18 0	— Ivy-Leafed, doz.	3 0–	4 0
Foliage plants, various, each	2 0–	10 0	— scarlet, doz.	2 0–	4 0
			Rhodanthe, per doz.	4 0–	6 0
			Stocks, dozen	4 0–	6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0–	4 0	Marguerites, 12 bun.	3 0–	6 0
Arum Lilies, 12 blooms	2 0–	4 0	Mignonette, 12 bun.	2 0–	4 0
Bouvardias, per bun.	0 6–	0 9	Pansies, 12 bun.	1 0–	2 0
Cactus blooms, doz.	1 6–	2 0	Pelargoniums, 12 spr.	0 6–	1 0
Carnations, 12 bun.	3 0–	6 0	— scarlet, 12 spr.	0 3–	0 6
— 12 blooms	1 0–	3 0	Pinks (var.), 12 bun.	2 0–	4 0
Cornflowers, 12 bun.	1 0–	4 0	Primulas, dbl., 12 sp.	0 9–	1 0
Delphinium, 12 bun.	3 0–	6 0	Rhodanthe, 12 bun.	4 0–	6 0
Eucharis, per dozen	3 0–	6 0	Roses, Tea, per doz.	0 6–	2 0
Gardenias, 12 blooms	2 0–	4 0	— coloured, dozen	2 0–	4 0
Gladioli, 12 bun.	2 0–	9 0	— red, per dozen	0 4–	1 0
— 12 sprays	1 0–	2 0	— Safrano, dozen	0 6–	1 0
Heliotropes, 12 spr.	0 6–	1 0	— Moss, 12 bun.	6 0–	12 0
Iris, 12 bunches	4 0–	12 0	Stephanotis, 12 spr.	2 0–	4 0
Lavender, 12 bun.	6 0–	8 0	Stock, 12 bunches	4 0–	8 0
Lilium, vari., 12 bls.	1 0–	5 0	Sweet Sultan, 12 bun.	4 0–	6 0
Maiden Hair Fern, 12 bun.	4 0–	9 0	Sweet Peas, 12 bun.	2 0–	6 0
			Tuberoses, 12 blms.	0 6–	1 0

Orchid bloom in variety, fairly good supply.

SEEDS.

London: *July* 17.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that to-day's market was thinly attended, with scarcely any business doing. Samples of Trifolium, Rye-grass, Trefoil, Rapeseed, &c., of this year's growth, are now coming to hand, but no business of importance has yet resulted. Prices generally promise to open low all round. For Blue Peas there is a continued inquiry; available stocks are now reduced to very narrow limits. In Hempseed the tendency is distinctly upwards. Canaryseed keeps dull and neglected. Other articles at this quiet season call for no comment.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, for the week ended July 13:—Wheat, 29*s.* 3*d.*; Barley, 19*s.* 9*d.*; Oats, 18*s.* 11*d.* For the corresponding week in 1888:—Wheat, 31*s.* 6*d.*; Barley, 28*s.*; Oats, 16*s.* 8*d.*

FRUITS AND VEGETABLES.

Spitalfields: *July* 17.—Cabbages, 2*s.* 6*d.* to 4*s.* 6*d.* per tally; Cauliflowers, 3*s.* to 4*s.* 6*d.* per dozen; Peas, 2*s.* to 3*s.* per bushel; do., 3*s.* to 5*s.* per sack; Broad Beans, 3*s.* per bushel; do., 5*s.* to 6*s.* per sack; Radishes, 4*s.* to 5*s.* per tally; spring Onions, 3*s.* 6*d.* to 4*s.* per dozen bunches; Turnips, 3*s.* to 3*s.* 6*d.* do.; Carrots, 2*s.* 9*d.* to 3*s.* 3*d.* do.; Mint, 1*s.* to 1*s.* 6*d.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Vegetable Marrows, 1*s.* 9*d.* to 3*s.* per dozen; frame Cucumbers, 2*s.* to 2*s.* 6*d.* do.; natural do., 9*d.* to 1*s.* 6*d.* do.; Sea-kale, 1*s.* to 1*s.* 6*d.* per punnet; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 1*s.* 2*d.* to 1*s.* 8*d.* per score; Lisbon Onions, 6*s.* per case; English Apples, 3*s.* to 4*s.* per half bushel; Gooseberries, 3*s.* to 3*s.* 6*d.* per half-sieve; Black Currants, 5*s.* do.; White Currants, 4*s.* 6*d.* to 5*s.* do.; Red Currants, 3*s.* 9*d.* to 4*s.* 3*d.* do.; black Cherries, 5*s.* to 7*s.* do.; white Cherries, 7*s.* to 8*s.* do.; Raspberries, 25*s.* per cwt.; Strawberries, 2*s.* to 3*s.* per peck; Walnuts, for pickling, 3*s.* 6*d.* to 4*s.* per half-sieve.

Stratford: *July* 17.—Trade and supply has been good during the past week at this market.—Quotations:—Cabbages, 3*s.* 6*d.* to 5*s.* 6*d.* per tally; Mangels, 17*s.* to 22*s.* per ton; Swedes, 17*s.* to 22*s.* do.; Onions, Egyptian, 4*s.* 6*d.* to 5*s.* 6*d.* per bag; Tomatos, 1*s.* per box; Strawberries, 3*s.* per peck; Apples, 3*s.* 6*d.* to 4*s.* 6*d.* per half-sieve; Gooseberries, 6*s.* do.; black Currants, 6*s.* do.; red Currants, 5*s.* do.; Cherries, 8*s.* to 10*s.* do.; Walnuts, 7*s.* per sieve; Raspberries, 1*s.* 9*d.* per 5 lb.; white Currants, 2*s.* 6*d.* per peck; Lettuce, 1*s.* 3*d.* per score; Carrots, 3*s.* 6*d.* per dozen bunches; Cucumbers, 1*s.* to 1*s.* 6*d.* per dozen; Watercress, 6*d.* per dozen.

POTATOS.

Borough and Spitalfields, *July* 16.—Supplies of new increasing, and prices easing down. Old Magnum Bonums, 60*s.* to 80*s.*; Jersey kidneys, 90*s.* to 100*s.*; French flukes, 90*s.* to 100*s.*; rounds, 80*s.* per ton.

Stratford: *July* 16.—Quotations:—Jersey kidneys, 100*s.* to 120*s.*; Cherbourgs, 80*s.* to 90*s.*; English kidneys, 70*s.* to 90*s.*; Hebrons, 70*s.* to 90*s.*; Early Rose, 65*s.* to 75*s.*; Regents, 70*s.* to 100*s.* per ton.

NOTICES TO CORRESPONDENTS.

Book: *G. P. The Carnation and Picotee*, by Mr. E. S. Dodwell, published by Messrs. Groombridge & Sons, Paternoster Row.

Camellia Leaves Brown-spotted: *R. Weaver.* Usually this is the result of stagnant water in the soil. Retub the plant now, clearing away the sour wet soil, and use a sufficient quantity of crocks to secure good drainage, covering them with lumps of peat; and for compost, employ loam, one-half; burnt earth, if you have it, one-quarter; charcoal, one-eighth; leaf-mould, well rotted, one-eighth, with enough sand to keep it open. When the job is finished, stand the plant in partial shade for a fortnight; water once thoroughly, and afterwards, when dry; protect the soil from heavy rain by pieces of tarred felt or the like.

Carnation: *A. H.* Similar to Mary Morris in colour, and nearly of the good quality of that favourite. It keeps well after being cut.

Correction.—At p. 49 of last week's issue, in "A New Strawberry," *for* Mattock Bank, *read* Matlock Bank.

Cucumbers for Winter: *W. G.* Make a brine with common salt so strong that a new-laid egg will sink in it to half its depth. Put into this short and long prickly varieties of Cucumber as they become ready. Have a floating lid, which can be sunk under water by means of a piece of stone. This will keep the fruits below the surface. Skim off any scum that rises to the surface. Carraway-seeds, about 1 oz. to the gallon, may be put into the cask. It is in reality a kind of *sauer-kraut*, and the fruits are nice eating with cold meat in the winter season.

Moss Roses: *A. B.* There is no objection to Moss Roses being employed in beds of other Roses, if they are put in little colonies, and allowing them space to increase by the timely removal of the other Roses, on which they will in time encroach—that is, if you would like these colonies of Mosses to increase in area. They propagate themselves sparingly by means of suckers, and to prevent impoverishment of the soil from this increase of the plants, transplantation every third or fourth year is desirable.

Names of Fruits: *G. L.* Your specimens of Raspberries were damaged in the post, and quite beyond recognition when we received them.

Names of Plants: *C. A. L.* 1, Taxodium sempervirens (the red wood); 2, Pinus cembra; 3, P. strobus (both doubtful); 4, Picea clanbrassiliana; 5, Retinospora plumosa aurea reverting to squarrosa.—*Ipso facto.* Garden variety of Alströmeria pelegrina. — *G. H.* Clethra alnifolia. — *M. C.* 1, Veronica; 2, Deutzia crenata, fl.-pl.; 3, Spiræa Douglasi; 7, Aristolochia clematitis; 4, 5, 6, next week. — *W. W.* Verbascum nigrum, probably; but you send no leaves.—*Rev. H. H. C. G.* Rosa microphylla, doubled flowered variety.—*J. Wilson.* Tecoma jasminoides.—*E. D. L.* Veronica cupressoides. — *W. H. R.* Rubus occidentalis—Canadian Raspberry.—*T. M.* Nos. 1, 2, and 3 are, as you take them to be, Camellias; 4 is probably a Eupatorium; but you should send flowers as well as leaves.

Peach Disease: *Rev. H. G.* Your Peach leaves have what is termed the silver-leaf disease, the cause and cure for which are unknown. Cut away all the affected shoots; or, if the tree is badly affected, remove the tree and burn it.

Preserving Fruit Whole in Bottles: *A. B.* Pick the fruit clean, and let it be dry; fill the bottles with sound fruit only, and for a one pint bottle put in two table-spoonfuls of pounded loaf-sugar; the corks — new, close-fitting ones — should be put in loosely, the bottles being stood together in a boiler or copper with hay between them, to prevent breakage during the boiling of the water. Fill up with water almost to the top of the bottles, and boil for twenty minutes. Let the bottles remain in the boiler until all is cold. Cork the bottles tightly, and place in a cool cellar. Some persons add just a trifling amount of alum, or salicylic acid, but it is hardly necessary to do so, unless the fruit has to be kept for more than twelve months, or is kept in a fluctuating atmosphere. The most suitable fruits for bottling are Plums of all kinds, green Gooseberries, Cherries, small Crabs—the bright-looking Siberian varieties, Grapes plucked from the bunch, Cranberries, Barberries, Apricots, Loquats, Peaches in quarters.

Rafflesia Arnoldi: *T. J.* Yes; one of the marvels of the plant-world, figured in a former volume (1874, p. 91). It is not an Aroid, nor has its cultivation been successful in this country. It is parasitic on the roots of Cissus, and has been cultivated in the Botanic Garden, Buitenzorg, Java. There is a model of it in the museum at Kew.

Raspberry Superlative: *G. B. & Co.* The fruits were so shaken and bruised in transit that no just opinion as to their merits can be formed. Juice was oozing from the box on arrival. The fruits appear to have been of large size and good colour.

Scale on Camellias. *W. H. M.* The leaf sent is infested with a coccus scale, which may be destroyed by applying methylated spirit to the creature by means of a small brush or pointed stick. An illustration of a leaf attacked with this scale appeared in our issue for April 27 last.

Tuberose, and Pear Leaves: *A. P.* The flowers of the first mentioned seem to come from bulbs which have been subjected to the wrong kind of treatment; possibly, too much moisture afforded them before there were many roots formed to appropriate it. The leaves of the Pear seem to be scorched, perhaps by the sun shining hotly upon them when wet.

Tubers on the Haulms of Potatos: *F. W.* This

is not uncommon as the result of injury to the tuber or roots, as by wireworm; the plant being prevented from forming tubers in the ordinary way, forms them in the axils of the leaves, thus proving that the tuber is a modified leaf-bud. In your specimen the tubers are unusually large, and, what is more, diseased.

WATER LILY: *F. G. M.* See our issue for May 11, 1889, where the planting and general treatment of Water Lilies are fully treated of.

WHITE BLACK CURRANTS: *Kingsby.* White-fruited forms of Ribes nigrum are occasionally met with in gardens, but they do not please on account of their undecided colour, and therefore their cultivation does not extend much beyond the places where they originate. We have seen some which were even lighter in the colour of the skin than those you have sent to us.

YEW TREES AND MANURE: *Yew.* All the Conifers are impatient of manure that is not very mild and thoroughly decayed. Leaf-mould is found to be the best form of manure, and this substance may be applied alone, or it may be mixed with loam. Coniferous plants, being possessed of great numbers of surface-roots, the manure cannot be dug into the soil over the roots, but must be laid on as a top-dressing of varying thickness; for large trees, 4 inches; small ones, 1 or 2 inches. The Yews delight in a chalky, therefore a dry soil, and they will be found to do best on the edge of declivities, and banks where the drainage is perfect. We should be afraid to use manure about the roots of newly-moved Yew trees, although a little mild stuff might be dug into the surrounding ground.

CATALOGUES RECEIVED.

ALFRED LEGERTON, 5, Aldgate, London, E.—Wholesale List of Dutch and other Flower Roots.

J. BACKHOUSE & SON, York—Flower Roots, Strawberries, &c.

COMMUNICATIONS RECEIVED.—J. B., Berlin.—P. L. S., Paris.—U. D., Berlin.—F. H., San Francisco.—H. J. R., Florence (with many thanks).—W. S.—Professor B.—F. W. B.—H. M.—M. H.—W. N. & Co.—P. S.—Baron von M., Melbourne.—R. H.—M. B.—Dr. C., Dantzic.—R. J. M.—J. W., Oodepore.—B. & Co.—V.—A. G. R.—Folièjon. (under examination) —Rosa—Harry Engel.—W. Crump.—F. R.—W. N.—J. O.—M. Dunn.—T Hincks (not unusual).—Frank Cant.—C L. & S.—A Subscriber (next week).

☞ *Correspondents 'sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect in all cases to obtain an answer to their enquiries in the current week.*

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

HYBRIDISING.—Is any case known of the hybridisation of annual species with perennial ones? Are there any cases where hardy species have been crossed with plants requiring stove treatment, and in such case is the offspring hardy? *Hybridiser.*

VAPOURISING ORCHID-HOUSE.—My house is 25 feet long, 20 feet wide, 13 feet high, and 5 feet to the eaves. Which is the best vaporiser to employ in the house—Mr. Williams' Thanatophore, or Field & Harrison's Nicotyl vapouriser? and which is the best substance to employ—tobacco-water, as sold by Corry, Soper & Co., or nicotyle? *G. A.* [Perhaps some of our readers who have experience in the above matters will kindly answer our correspondent's inquiries. ED.]

Obituary.

DAVID DARTNALL.—We regret to announce the death of David Dartnall, which occurred on the 2nd inst. at Tunbridge Wells, where he was in business as a nurseryman and florist. Formerly, he was in the employment of Messrs. J. Veitch & Son (for over twenty years), being for several years Manager of their Coombe Wood Nurseries; and he also served with Messrs. T. Cripps & Son, of Tunbridge Wells.

WILLIAM CLINGO.—We have also to announce the death of William Clingo on the 12th instant, at Victoria Terrace, Kilburn, at the age of seventy-four years. The deceased had been in as nurseryman and florist at St. John's Wood successfully for upwards of fifty years, retiring from active business a few years back.

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Mr. W. G. HEAD, Superintendent of the Crystal Palace Gardens, says:—"We were so satisfied with your Weed Killer and its price, that we have used it absolutely. I have every confidence in recommending it."

Highly Commended by the Judges at the Alexandra Palace Rose Show, 1889.

Price:—1 *Gallon, 2s. (tin included);* 5 *Gallons,* 1*s.* 6*d. per Gallon;* 10 *to* 20 *Gallons,* 1*s.* 4*d. per Gallon.*

Carriage paid on 10 Gallons and upwards.

Used in the proportion of 1 gallon to 25 gallons of water, and applied with an ordinary watering can.

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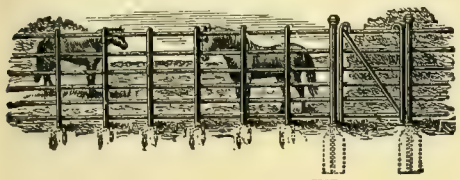
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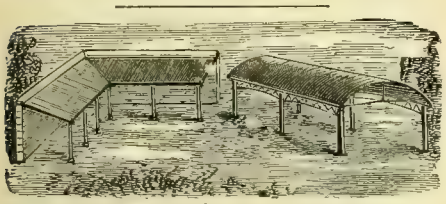
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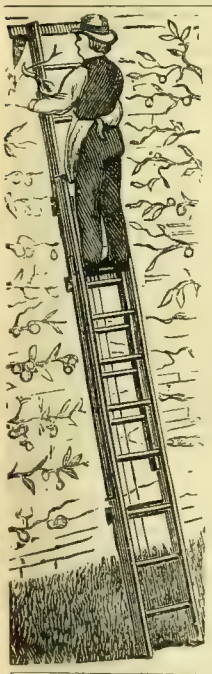


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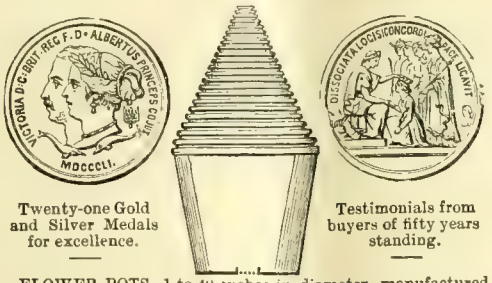
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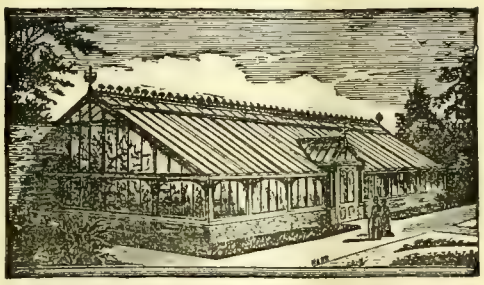
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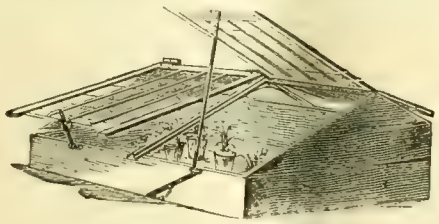
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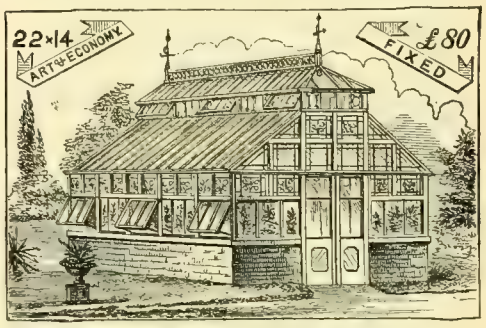
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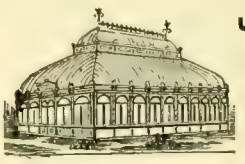
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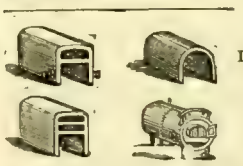
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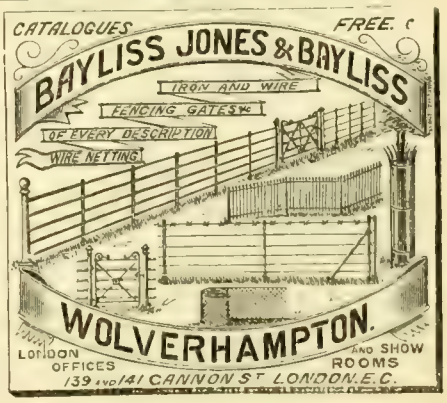
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10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
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WANTED, a Christian UNDER GARDENER, married, and to live in the garden, and able to Manage Flower and Kitchen Garden, &c.—Apply with all particulars, to J. MADDOX, Gardener, Pontypool.

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WANTED, a respectable young PERSON, well up in Bouquets, Wreaths, &c.; from London preferred Also a young MAN to serve in the Fruit Department.—W. G. HODGE, Florist, Plymouth.

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Mr. ROBERT BELL, late Gardener, Morton Hall, Midlothian, has been appointed Gardener and Steward to the Duke of ABERCORN, at Baronscourt, Co. Tyrone.

Mr. WILLIAM KING, late Gardener at Dalzell, Lanarkshire, has been appointed Gardener to Sir ROBERT JARDINE, Bart., Castlemilk, Dumfries-shire.

Mr. JOHN BORTHWICK, late Gardener at Stobo Castle, Peebles-shire, has been appointed Gardener to the Earl of BREADALBANE, at Taymouth Castle, Kenmore, Perthshire.

Mr. J. OSWALD, late Gardener at Hoddam Castle, Dumfries-shire, has been appointed Gardener to W. T. CRAWSHAY, Esq., Cyfarthfa Castle, Glamorganshire.

Mr. JAMES DICKIE, late Gardener at Curraghmore, Co. Waterford, has been appointed Superintendent of the Alexandra Public Park, Glasgow.

Mr. WILLIAM SHARP, late Gardener, Priorwood, Melrose, has been appointed Gardener to C. L. WOOD, Esq., Freeland, Perthshire.

Mr. ALEX. ANGUS, Foreman, has been appointed Gardener to Lord HAMILTON, of Dalzell, at Dalzell, Motherwell, Lanarkshire.

Mr. THOMAS HOGG, late Gardener, Aikenhead, has been appointed Gardener to ARCHIBALD COATS, Esq., Woodside, Paisley, N.B.

Mr. THOMAS CRASP, late Head Gardener to Earl SYDNEY, Frognall, Foot's Cray, Kent, has been appointed Head Gardener to Lord WIMBORNE, Canford Manor, Dorsetshire.

Mr. A. REID, late Foreman at Dover House, Roehampton, has been appointed as Head Gardener to D. TODD, Esq., Eastwood Park, near Glasgow.

Mr. JOHN WILLIAMS has been engaged as Head Gardener to J. H. ROBERTS, Esq., Cefnycoed, Carnarvon.

Mr. J. LIDDLE, late Foreman at Sunningdale Park, has been engaged as Head Gardener to A. WESTON, Esq., Holme Grange, Wokingham, Berkshire.

WANT PLACES.

Gardeners, Farm-Bailiffs, Foresters, &c.

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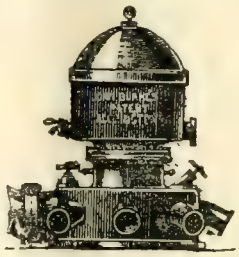
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden in the said County.—SATURDAY, July 20, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2535.

No. 135.—Vol. VI. {Third Series.} SATURDAY, JULY 27, 1889. [Regt. as a Newspaper. {PRICE 3d. Post-Free, 3½d.

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6 FUCHSIAS, £3, £1 10s., 15s.
ROSES, 36 varieties, Cup or £5, 50s., 30s.
Apply to FRED. C. HENLY, Hon. Sec.

MAIDENHEAD HORTICULTURAL SOCIETY.
The ANNUAL SHOW will be held in the Grounds of Ray Lodge, Maidenhead, on THURSDAY, August 15, 1889. Entries Close August 8. Schedules from—
Ray Park Cottage, Maidenhead. Mr. O. KING, Secretary.

LILIES OF THE VALLEY!
English-grown!
The best for early forcing, finest large flowers, and superior in every respect to German crowns. Price per 1000, 10.000. to 100,000 on application.
T. JANNOCH, Lily of the Valley Grower by Special Appointment to H.R.H. The Prince of Wales, Dersingham, King's Lynn, Norfolk.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey, and Flower Market, Covent Garden, W.C.

PUBLIC DISTRIBUTION of CHOICE DAFFODILS.—Bulbs now ready (and better for early plantation), being surplus from the finest private collection in the kingdom. Some good LILIES in September from same gardens. Lists —WOOD'S Hardy Plant Club, Kirkstall, Leeds.

KAFFRARIAN PALM. — Fresh Seeds in July of PHŒNIX RECLINATA.
Apply to Messrs. HURST AND SON, 152, Houndsditch, E.; or to J. C. NELSON, Cambridge Nurseries, Kaffraria, South Africa. Nurserymen's CATALOGUES desired.

NATIVE PLANTS, FERNS, and SEEDS, of New Zealand:—Ranunculus Lyalli, R. Buchanani, R. Godleyanus, Cordylinis, Clematis, Celmisias, Ourisias, &c.—Can be supplied in any quantity at low rates by GEORGE MATTHEWS, Nurseryman and Seedsman, Dunedin, New Zealand.

BARR'S CATALOGUES
Free on application.
List of Autumn-flowering Crocus and Meadow Saffron.
Daffodil Catalogue, Illustrated, contains the only complete list of these beautiful hardy spring flowers.
Bulb Catalogue of cheap, rare, beautiful hardy bulbs, &c., for all seasons.
Plant Catalogue of hardy, free-flowering, beautiful perennials for flower borders, and as cut flowers.
Seed CATALOGUE, ready 1st January, 1890.
BARR AND SON, 12, King Street, Covent Garden, W.C.

LILY OF THE VALLEY.
First-class German flowering Crowns.
Any quantity.
H. DAMMANN, Jun.,
Treslau.

PRIMULAS, Double White, 5s. per doz., 35s. per 100. Prices for quantities on application. Terms cash with order.
TAYLOR AND CO.,
Nurserymen, Timperley, Cheshire.

The Best Present for a Gardener.
VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

16 VARIETIES of STRAWBERRIES, which R. Gilbert considers the cream. They include all the modern varieties, but the good old Standards are not forgotten. In pots for forcing, and ordinary hand layers.
Send for R. G.'s STRAWBERRY LIST, where all are described and priced, with Hints upon Culture. Warranted true to name.
R. GILBERT, High Park, Stamford.

FOR SALE, 33 FRUIT TREES in pots.—9 Nectarines, 9 Peaches, 6 Plums, 6 Oranges, 3 Pears. All the above are fine trees, from 4 to 6 feet high, clean, and in good condition.
The GARDENER, Stoneleigh, Edgerton, Huddersfield.

WANTED, a few Dozen Stock Plants of PANDANUS VEITCHII and DRACÆNAS LINDENII and MASSANGEANA; in EXCHANGE, or for Cash.
Send full particulars to B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London, N.

LAXTON'S NEW STRAWBERRIES
Must be grown by all.
Descriptive LIST, with prices of "Latest of All" (new, 1889), "Noble," "A. F. Barron," "Commander," &c., now ready. Six First-class Certificates.
See large Advertisement, page 92.
THOMAS LAXTON, Seed Grower, Bedford.

BULBS — BULBS — BULBS.—The cheapest offer of first-class Bulbs ever submitted to the Public, the finest produced in Holland (selected by us on the spot) being offered at Auction Prices. Many people last year doubted the possibility of really FIRST-RATE Bulbs, true to name, being offered at the rates we quoted, and only gave us half their orders in order to compare the blooms with those produced from bulbs supplied by other firms. Our Bulbs stood the test in every case, and we have received many Testimonials of a most flattering character. CATALOGUES now ready.
J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

PRIMULAS—PRIMULAS—PRIMULAS.—Twentieth year of distribution. Williams' Superb Strain, 1s. 6d. per dozen, 10s. per 100. CINERARIAS, same price; also double white PRIMULAS, 6d. each. Carriage free for cash with order.—JOHN STEVENS, The Nurseries, Coventry.

ROMAN HYACINTHS, NARCISSUS, LILIUMS, TUBEROSES, and many other FRENCH BULBS, grown and offered by LOUIS BREMOND, fils, Ollioules, France.
WHOLESALE LIST on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, London, W.C.

"MRS. SINKINS."—Double White Pink Pipings, flower large as a Carnation, strike well now, 25, 1s.; 3s. per 100, post-free.
SHEPPARD, Seedsman, Hounslow, Middlesex.

Dutch Bulbs Direct from the Growers.
ANT. ROOZEN AND SON, of Overveen, Haarlem, beg to state that their CATALOGUE for 1889, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (94 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

Strawberries.
CHARLES TURNER'S New and Descriptive LIST is now ready, and may be had free on application.
The Royal Nurseries, Slough.

Strawberries, from the Garden of England.
GEORGE BUNYARD AND CO. can now offer very fine Runners and Plants in small pots of all the finest kinds. LIST free.
Old Nurseries, Maidstone.

STRAWBERRY RUNNERS for FORCING.—Black Prince, Thury, Paxton, President, and other favourite varieties. Descriptive LIST, with prices, on application. Sample of plants, post-free, 3d.
W. LOVEL AND SON, Strawberry Planters, Driffield.

STRAWBERRIES.—Leading kinds, in 3½-inch pots, for immediate Planting or Potting on for Forcing. Send for LIST.
FRANCIS R. KINGHORN, Sheen Nurseries, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. £1 per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
DICKSONS (*Limited*), The Royal Seed Warehouse, CHESTER.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

CHRYSANTHEMUM CULTURE.—Standen's Manure, admitted by growers to be unrivalled for this purpose; in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each.
Sold by all Seedsmen.

SALES BY AUCTION.

North Dulwich.

CLEARANCE SALE of the whole of the well-grown GREENHOUSE PLANTS, comprising many fine Specimen Ferns, Palms, Crotons, &c., 60 Camellias and Azaleas, fine Orange Trees, quantity of well-grown Orchids, 200 Chrysanthemums, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, "Menival," 2 minutes' walk from North Dulwich Station, on TUESDAY NEXT, July 30, at 1 o'Clock precisely, by order of H. Barrett, Esq., who is going abroad.

May be viewed the day prior and morning of Sale. Catalogues had of Mr. J. WAKEHAM, Gardener on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Acton.

Important to Builders, Florists, Speculators, and others.

An exceedingly CHOICE FREEHOLD ESTATE.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at the Mart, Tokenhouse Yard, London, E.C., on WEDNESDAY, July 31, at 2 o'Clock, in one Lot, the VALUABLE FREEHOLD NURSERY or BUILDING ESTATE, known as the Priory Nursery, Acton Lane, Acton, situate within a few minutes walk of Acton, South Acton, Acton Green, and Turnham Green Railway Stations.

The Estate comprises an area of about 4 Acres, with 28 well-built Greenhouses, containing nearly 40,000 feet of Glass, heated by 9000 feet of Hot-water Piping, Stabling for 4 Horses, Coach Houses, and Numerous Trade Buildings. The Property possesses great advantages for being continued as a Nursery, but the Land is thoroughly ripe for Building Purposes, and, with the important frontages of 383 feet, affords ample scope for development for Building Purposes. The Subsoil is fine Sand. Possession will be given on completion of the purchase.

Particulars, with plan, may be had on the Premises; at the Mart, E.C.; of Messrs. FORD, LLOYD, BARTLETT AND MICHELMORE, Solicitors, 4, Bloomsbury Square, W.C.; of W. H. HUDSON, Esq., Solicitor, 1, Furnival's Inn, E.C.; and of the Auctioneers and Surveyors, 67 and 68, Cheapside, London, E.C.; and Leytonstone.

Friday Next.

CYPRIPEDIUM SCHLIMII.
CATTLEYA AUREA.
CATTLEYA GIGAS.
ODONTOGLOSSUM VEXILLARIUM.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Charlesworth, of Heaton, Bradford, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 2, at half-past 12 o'Clock precisely, an exceedingly fine lot of IMPORTED ORCHIDS, brought home personally by the Collector; the plants are, therefore, in the finest possible condition, and intending purchasers need not fear losing any.

Special attention is drawn to the Cattleya aurea; they surpass any offered before. The Collector saw some of them in bloom, and was struck with the large size and colouring of the flowers. He found amongst them three very fine Hybrid Cattleya gigas and aurea, and no doubt there will be more in the lots offered.

The plants are in capital condition, well-leaved, and perfectly dormant.

The Odontoglossum vexillarium have been collected in the same locality as last year, whence those dark and large-flowering varieties come; they are no doubt the finest strain known, varying in colour to great extent. Flowers will be shown at the Sale.

Cattleya gigas, a very dark and large-flowering type, embracing pieces of marvellous size. A plant in flower was shown at the Royal Horticultural Society's meeting at Chiswick on July 9.

Also a few plants of CYPRIPEDIUM SCHLIMII, ODONTOGLOSSUM LUTEO PURPUREUM SCEPTRUM.

On view morning of Sale, and Catalogues had.

Friday Next.

ORCHIDS IN FLOWER.

MESSRS. PROTHEROE AND MORRIS will include in the SALE at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 2, a large quantity of ORCHIDS in FLOWER, from various collections.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7959.)

ESTABLISHED ORCHIDS, many in Flower and Bud.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 1, at half-past 12 o'Clock precisely, a fine lot of ESTABLISHED ORCHIDS, from various Collections, comprising many fine varieties and rare species, chiefly in Flower and Bud.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7959.)

The COLLECTION of ORCHIDS formed by T. M. Shuttleworth, Esq.

MR. J. C. STEVENS has received instructions from T. M. Shuttleworth, Esq., who is giving up his Town House, to SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 1, at half-past 12 o'Clock precisely, his Collection of ESTABLISHED ORCHIDS, comprising choice varieties, Cattleya Mendelii, C. Trianæ, Odontoglossum Alexandræ, O. Harryanum, and O. vexillarium, Sophronites grandiflora (large form), Lælia anceps, L. purpurata, Dendrobes, &c.

Also fine PALMS, AZALEAS, about 50 splendid pots of EUCHARIS AMAZONICA, in fine condition; E. CANDIDA, and E. MASTERSII, &c.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 15, and he will be glad if Gentlemen desirous of ENTERING PLANTS FOR THIS SALE, will please SEND LISTS AS SOON AS POSSIBLE

THE ADVERTISER, a Practical Gardener, would like to RENT a PRIVATE GARDEN, with one or two Glass-houses and Cottage; or, a Small NURSERY.
Address particulars, A. B., 9, Bath Road, Banbury.

FOR SALE, a compact FLORIST and SEED BUSINESS, with Dwelling-house, Shop, and Nursery in main market thoroughfare, and good Shop opposite the station.
Apply, W. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

MUST BE DISPOSED OF, IMMEDIATELY, an Old-established SEED BUSINESS, being through death. No reasonable offer refused. Address,
SEEDS, G. A. Stewart, Solicitor, 60, Fore Street, E.C.

Dunholme, near Lincoln.

TO BE SOLD, a good MARKET GARDEN, about 3 acres, well stocked with Fruit Trees and all kinds of Vegetables, in highly profitable condition, together with 2 Cottages adjoining garden.
For particulars, apply to Mr. S. ELLIS, on the Premises.

FOR SALE, privately, VINERIES, HOT-HOUSES, and GARDENS, within 30 miles of Glasgow, 5 minutes' from Railway Station, wholly enclosed by stone walls. There are 6 Houses, embracing about 12,000 feet of Glass, producing on an average 2 tons of Grapes, 1 ton of Tomatos. One acre of Ground under Strawberries. There is also capital Dwelling-house, Coach-house and Stables within the grounds.

The Glasgow Market and Hotels afford ready outlet for whole produce, and the Purchaser would have the benefit of the valuable business connection which has been formed.

To a Gardener with little means this affords a splendid opportunity for acquiring a going business.

For further particulars apply to Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.; or to GORDON SMITH AND PARKER, Solicitors, 205, Hope Street, Glasgow, who will give Cards of Admission to see the Properties.

Snaresbrook, N.E.—To Nurserymen and Florists.

TO LET or for SALE, a commodious Freehold HOUSE, with Outbuildings, 4 Glass-houses, and about half an acre of Land. A first-class opening for an energetic man.
SUTTON ABBOTT, Auctioneer, The Mall, Wanstead, N.E.

To Market Gardeners.

TO BE SOLD or LET, large GREENHOUSES, containing 15,000 feet of Glass, situated close to Liverpool. Returns can be seen, showing from £10 to £20 per week, in the season. Splendid houses for Tomatos. Rent £90, including Cottage and 5 Acres of Land.
Further particulars from DONNISON AND EDWARDS, Solicitors, 41, Lord Street, Liverpool.

Ponder's End, Middlesex (8 miles from London).

To NURSERYMEN and FLORISTS.

TO BE LET, on Lease, one to twenty acres of rich MEADOW LAND for 21, 60, or 80 years at £10 to £12 per acre, with option of Purchasing the Freehold during the first 9 years.
Apply to A. AND G. GUIVER, Land Agents, Ponder's End, Middlesex.

TO LET, on Lease (owing to the death of owner), a compact NURSERY, 11 Greenhouses, well-heated Pits, good Stabling, Sheds, and Outhouses. Situated in St. John's Wood.—Apply, 18, Finchley Road, N.W.

TO LET, an Old-established MARKET NURSERY, of an acre, 8 Houses, &c., well stocked, at a valuation.—Apply, BOUNDS, Green Nursery, New Southgate.

TO BE LET, with immediate possession, 1½ acres of good walled-in GARDEN, planted with Fruit Trees, Asparagus, &c., and containing 132 feet of 19 feet rafted Vineries, in full bearing; also Cucumber or Tomato House, 4 feet 6 inches by 12 feet, all heated; Gardener's House and Cottage, Stable, Cart Lodge, Pig and Fowlhouse, all in grounds. Within quarter of an hour's distance of Westgate-on-Sea and New Birchington-on-Sea.
Apply, Mr. JOHN GREAVSON, Lingfield, Westgate-on-Sea.

To Nurserymen.—A good Opportunity.

TO LET, VICARAGE NURSERY, Vicarage Road, Lower Tottenham, consisting of double-fronted House of nine rooms, and five Glass-houses in rear of house. Rent £45 per annum; or could be purchased, payment to extend over a term of years.
Apply to CARETAKER on Premises to view.

TO LET, FLORIST and SEED BUSINESS, High Street, Tunbridge Wells. Immediate possession. STURT AND CO.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Make SPECIALTIES of the following:—

ORCHIDS, of which they have an immense stock, and they are constantly receiving fresh importations from various parts of the world.

ORCHID BASKETS, made of the best Teak and Copper Wire.

COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.

ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.

TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.

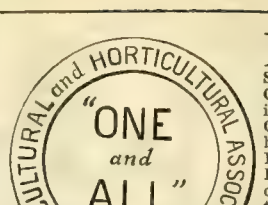
FERNS, a large and fine stock of the leading kinds.

GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.

STOVE and GREENHOUSE PLANTS, suitable for table and other purposes, in great variety.

The Company offer all the above at the lowest possible prices. Descriptive PRICE LISTS, post-free, on application to

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.



NATIONAL CO-OPERATIVE FLOWER SHOW, to be held at the Crystal Palace on August 17, in connection with the Great Co-operative Festival and Exhibition. FIVE HUNDRED POUNDS in Prizes and Medals. Entries close August 7. Schedules free on application to the Agricultural and Horticultural Association (under whose auspices the Show is held).

EDWD. OWEN GREENING, Secretary.
3, Agar Street, Strand, W.C.; Creek Road, Deptford, S.E.

GARDENERS' ORPHAN FUND.

Result of the Election at the Annual General Meeting, July 19, 1889.

NAMES OF CANDIDATES.	NO. OF VOTES.
ALLEN, WILLIAM CHARLES	133
BUTCHER, FRANK	43
CHAPELOW, OLIVE	87
DEEDMAN, BESSIE STRONACH	73
GRIEVE, MARY	47
GUTHRIE, DAVID GEORGE...	108
HENDERSON, THOMAS	44
IRELAND, ARTHUR JOHN	233
LACEY, ARTHUR	49
MOSEDALE, EDMUND WALKER	151
PRESTON, HARRY ROBINSON	103
SKELTON, HENRY EDMUND	55
TAYLOR, BESSIE	237
TODD, ROBERT JAMES	92

The Meeting thereupon declared BESSIE TAYLOR, ARTHUR JOHN IRELAND, EDMUND WALKER MOSEDALE, WILLIAM CHARLES ALLEN, DAVID GEORGE GUTHRIE, and HARRY ROBINSON PRESTON, duly elected.

A. F. BARRON, *Hon. Sec.*
Royal Horticultural Society's Gardens,
Chiswick, *July* 22, 1889.

HENRY SQUELCH (late Squelch & Barnham) RECEIVES CONSIGNMENTS of good Black Grapes, Muscats, Cucumbers, Tomatos, and Beans; also all kinds of choice Hothouse Flowers. H. Squelch's trade being especially for First-class Hothouse Produce, and he having a connection amongst the best Houses in London and Country, is able to command highest Market Prices. Account Sales furnished daily, and accounts settled weekly, or as desired.
Empties and Labels Supplied. Bankers' and other references.
North Row, Covent Garden Market, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

Surplus Cut Flowers.

HOOPER AND CO. (Limited) RECEIVE and DISPOSE of any quantity of above at best Market Prices. Boxes, &c., supplied.—Address, Commission Department, HOOPER AND CO. (Limited), Covent Garden, W.C.

J. W. BARNHAM (late of Squelch & Barnham) RECEIVES ON COMMISSION, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

PEACHES, FIGS, MELONS, GRAPES, CUCUMBERS, TOMATOS, &c. Highest Market Prices guaranteed. Prompt Cash.—HENRY RIDES, Covent Garden.

CARTERS' "TESTED" SEEDS FOR PRESENT SOWING.

CABBAGE.—CARTERS' HEARTWELL MARROW, acknowledged to be the finest early Cabbage in cultivation, price 1*s.* 6*d.* per ounce, 6*d.* and 1*s.* per packet, post-free.
CARTERS' MAMMOTH BEEFHEART, the best main crop Cabbage, price 1*s.* 6*d.* per ounce, 6*d.* and 1*s.* per packet, post-free.

LETTUCE.—CARTERS' GIANT WHITE COS, price 2*s.* 6*d.* per ounce, 6*d.* and 1*s.* per packet, post-free.
DUNNETT'S GIANT WINTER COS, price 2*s.* 6*d.* per ounce, 6*d.* and 1*s.* per packet, post-free.
ALL THE YEAR ROUND, price 1*s.* 3*d.* per ounce, 6*d.* per packet, post-free.

ONION.—CARTERS' GOLDEN GLOBE TRIPOLI, price 1*s.* and 2*s.* 6*d.* per packet, post-free.
CARTERS' GIANT WHITE TRIPOLI, price 1*s.* per ounce; 6*d.* per packet, post-free.
CARTERS' WHITE EMPEROR, price 1*s.* and 2*s.* 6*d.* per packet, post-free.

CARTERS', ROYAL SEEDSMEN by Sealed Warrants, 237 and 238, HIGH HOLBORN, LONDON.

Hyacinths, Tulips, Crocus, Lilies, &c.

C. G. VAN TUBERGEN, Jun., Haarlem, Holland.—Wholesale CATALOGUE now ready, and may be had free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

NEW DEPARTURE IN TUFTED PANSIES (VIOLAS).

A DELIGHTFULLY SCENTED TRUE WHITE VIOLA, "COUNTESS OF WHARNCLIFFE,"

With a clear Eucharis white flower of grand substance; stout stalks, 4 to 5 inches long, stems thick, unusually erect and bushy, robust; may be shorn in handfuls for vase decoration; in effect equalling or surpassing the Orchid Cœlogyne cristata. One of the finest white, cool-frame, pot plants ever introduced. Sensational market and window plant; thoroughly tested in the rooms here last spring, cut, and in pots. Described by the Editor of *The Garden*, June 29th last, as "worth a dozen of even those with the best points;" and besides which popular "pure white" varieties sent for comparison, and figured as such in *The Garden*, are described as "Yellow." To be sent out about August and onwards. Stock limited. Prepaid Orders only acknowledged, and booked in strict rotation.

Price, 3s. per Plant; 30s. per dozen.

J. SIMPSON, GARDENS, WORTLEY HALL, SHEFFIELD.

EARLY WHITE ROMAN HYACINTHS,

Double Roman and Paper-white Narcissus.

JAMES VEITCH & SONS

BEG TO ANNOUNCE THEY HAVE RECEIVED THEIR USUAL CONSIGNMENTS OF

THE ABOVE VALUABLE BULBS FOR EARLY FORCING,

And will be pleased to receive Orders for immediate delivery.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, LONDON, S.W.

STRAWBERRIES.

JAMES VEITCH & SONS

BEG TO INTIMATE THAT THEY

CAN SUPPLY ALL THE LEADING KINDS OF THE ABOVE,

EITHER IN POTS OR PREPARED RUNNERS.

Special LIST, just published, and can be had on application.

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

PALMS AND FOLIAGE.

SPECIALTIES.

An immense Stock always on hand of the leading varieties, in finest possible condition. ARECAS, CHAMÆROPS, CORYPHAS, COCOS, KENTIAS, LATANIAS, SEAFORTHIAS, PHŒNIX, FICUS ELASTICA, ARALIAS. A very large Stock of extra-sized plants of the above varieties, from 6 to 12 feet.

WILLIAM ICETON, Putney Park Lane, Putney; and 129 & 130, Covent Garden Flower Market.

FERNS A SPECIALTY.

The finest, most varied, choice, and interesting Collection in the Trade.

1400 species and varieties of Stove, Greenhouse, & Hardy Ferns.

Partially descriptive CATALOGUE free on application.

Illustrated CATALOGUE (No. 21), containing 120 Illustrations, and much valuable information on the Cultivation of Ferns, 1s. 6d. post-free.

W. & J. BIRKENHEAD,

FERN NURSERY,

SALE, MANCHESTER.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18s. to 36s. per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,

Nurserymen and Seed Merchants,

WORCESTER.

EAST LOTHIAN INTERMEDIATE STOCKS.

THOMAS METHVEN AND SONS offer their choice strain of the above, in five varieties, viz., Scarlet, Purple, White, Crimson, and White Wall-leaved, at 1s., 2s. 6d., and 5s. each colour. Price to the Trade on application.

By Royal Warrant, Nurserymen and Seedsmen to the Queen, Edinburgh.

ORCHIDS AND PALMS

The Stock is of such magnitude that, without seeing it, it is not easy to form an adequate conception of its unprecedented extent.

INSPECTION INVITED.

The Glass covers an area of upwards of **300,000** super. feet.

HUGH LOW & CO.,

CLAPTON NURSERY, LONDON, E.

KELWAY & SON

Now is the time to plant:—

PYRETHRUMS, of which we grow 3 acres.
DELPHINIUMS, do. do. 3 ,,
GAILLARDIAS, do. do. 2 ,,
PHLOXES,
PENTSTEMONS.

"The largest collection in the world," for which the highest awards of the Royal Horticultural and Royal Botanic Societies of London have been given.

See our MANUAL for 1889, Gratis and Post-free.

LANGPORT, SOMERSET.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price, 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

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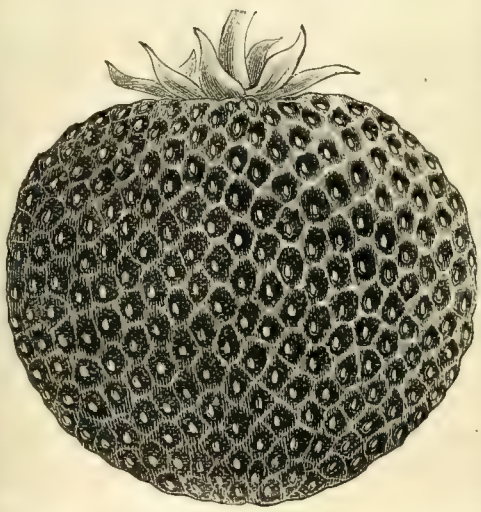
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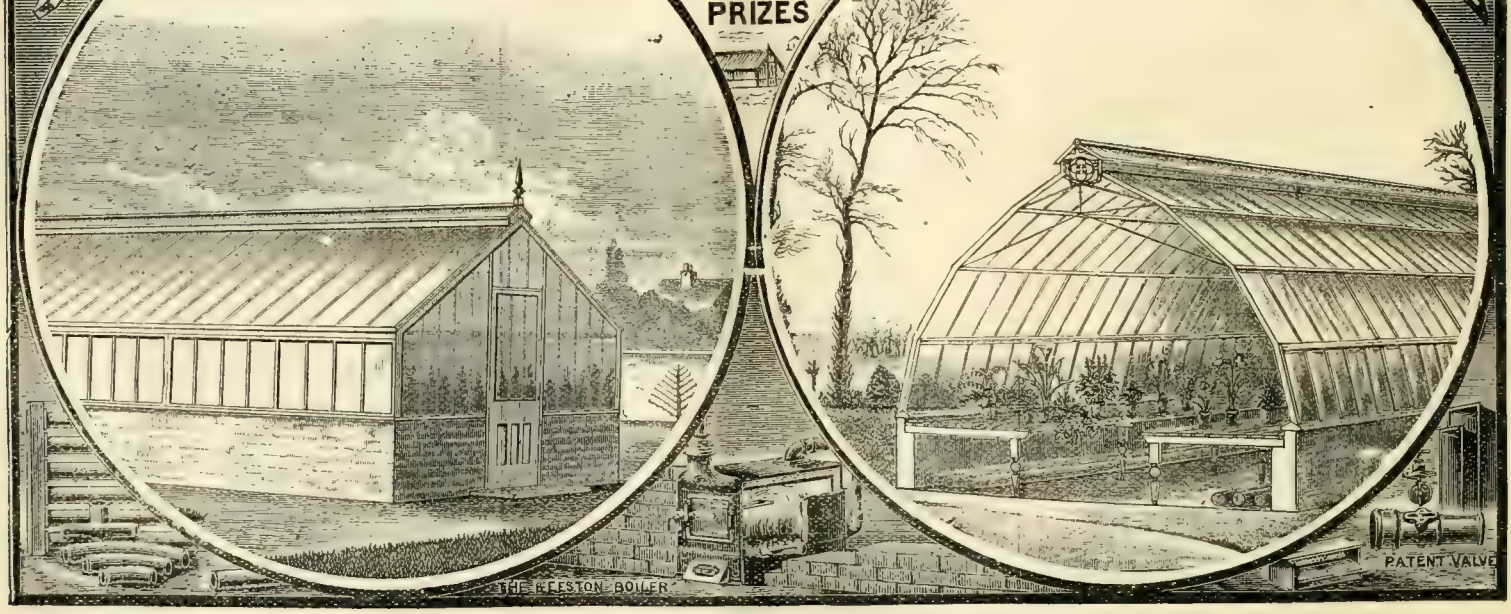
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"Rather more than a quarter of a century ago a gorgeous stranger appeared in our gardens, and was regarded with as great surprise and admiration as some scarlet warrior by the lads and lasses of his native village, to which he comes on furlough. Our English Flora, startled in her sweet simplicity and fascinated by his splendid presence, forgot her engagement to that which may be called the natural system, and transferred her affections to this gaudy suitor, who called himself 'Bedding-out.' Like the fair Imogene, when the Baron, all covered with jewels and gold, arrived at her front door, she became 'untrue to her vows.' She exchanged her graceful undulations and curves, her green alleys and cool grots, her walks amid the shrubberies in which she roved in maiden meditation, and heard the mellow ouzel fluting in the Elm, for treeless squares of sward, as flat as the spirit-level and the garden roller could make them. On these were cut all the figures in Euclid, with an assortment of stars, crowns, Maltese crosses, serpents, tadpoles, and nameless enormities, to be coloured when the summer came with Verbenas and Calceolarias (purple and gold, like the cohorts of the Assyrian), scarlet Geranium, and white Alyssum. The dining room carpet was to be reproduced on the lawn; the landscape gardener was to learn his art from the kaleidoscope. Flowering trees and shrubs, Laburnums, Lilacs, Syringas, Almonds, Roses, Berberis, Laurustinus, went down by the hundred (alas! the hand which writes this paper grasped the axe and saw!), and grand clumps of flowers, denounced as coarse and dingy, in comparison with these new importations, were dug up and destroyed. Now we were to have three months of dazzling coruscations, and, when the frost came, a shabby, flowerless exposition of flabby leaves, and then beds bare and brown. The catherine wheels and other fireworks collapsed into charred wood and tinder. Even this brief period of efflorescence was liable to curtailment. Happily, and *apropos* of Imogene and midnight, a change came o'er the spirit of this dream. When this new system of floral development seemed to have obtained a Papal supremacy, and when every garden which was not 'bedded out' was regarded as 'mean and poky,' when even cottagers had expelled their Gillyflowers, their Ladslove, and Michaelmas Daisies, to make room for a few of these gay novelties, bought or begged from the gardener at the hall; when the marriage between Flora and the Baron was celebrated with universal joy, and the 'tables they groaned with the weight of the feast, and the bell of the castle struck one,' then appeared the Nemesis of retribution, the ghost of Alonzo—Alonzo by William Robinson, accompanied by an escort of avenging spectres. His book, as a guide and reference, must be welcomed with its beautiful and truthful illustrations, the most important and instructive addition which has been made for many years to the florist's library."

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THE
Gardeners' Chronicle.

SATURDAY, JULY 27, 1889.

CATERPILLARS.

THE repetition of the caterpillar plague of 1888 has caused much havoc throughout the fruit-growing counties, and a cry for remedies is commonly expressed; but no adequate means have yet been found to cope with the insects in old standard trees, although in plantations and orchards consisting of dwarf fruits, hand-picking and shaking the larvæ into cloths is largely practised, not so much, as far as I can find out, to save the present year's crop, as to keep the trees alive, and enable them to recover from the loss of foliage. After the recent heat, much of which was retained in the soil, heavy rains would no doubt enable the trees to make more leafage, and with a favourable autumn, and no crop to carry, the trees will probably recover. The means adopted range themselves under two heads, viz., prevention and destruction. I will take the latter first, as there may yet be time to do something for the affected trees, though the larvæ of many will be full grown, and pass into the chrysalis stage this month. (A) The portable fowl-house; by keeping chickens in the plantations—and especially ducks—and letting them out twice a day (in relays), after a little education the birds will soon understand their work, and follow the men who shake the grubs from the trees. A correspondent remarks that he could not find a live caterpillar after their visits. It would, perhaps, be necessary to keep them short of other food to stimulate their activity, as some of our local growers have gathered bushels of grubs on the shaking and cloth system; any and no means of destruction should be left untried. (B) Washing with soft soap, quassia, and paraffin, diluted in water, have all been tried, and in some cases with success. This would be in the earlier stages of the life of the caterpillar and before much mischief was apparent in the foliage. When they become fourteen days' old, they are too strong to be affected by these methods, and even if stupefied, they eventually recover, and crawl up the trees again. (C) Dusting with lime, or any unpalatable dust (road-dust), will kill

numbers, as they breathe through their sides by stomata, and this dust chokes up the air passages, in the same way that oil will kill wasps and other insects.

I have not seen the "Strawsonizer" at work, but that machine appears from the engraving to be a likely mechanical means of supplying remedies both liquid and in the form of powder. In point of fact, the number of the caterpillars is so great, and they are so well protected from their enemies by the rolled leaves, webs, &c., and escape on the approach of danger by dropping down on a thread, that more means should be used in the way of prevention, by (D) pruning, and by cleaning off old bark. I should start this as soon as the fruit is gathered, as the foliage will then indicate to the pruner the dead wood; first saw out, and cut away all crossing and useless wood, then scrape all the main boughs with an old hoe or a piece of bent iron-hoop, looking well to the under sides of the boughs, and the crannies of the bark, and destroy lichens; while this operation is going on, a threshing-cloth should be placed under the tree, and after the work is completed, the whole of the cuttings should at once be burned thoroughly. (E) As soon as the leaves fall, a dressing of lime, soot, clay, or soft-soap, should be well-rubbed in the tree with a tar-brush, or an old dandy-brush, and the part of the tree not conveniently reached should be dusted with lime. This will destroy all larvæ and eggs left from the scraping, and the tree will be cleaned by Nature before the spring buds open; and the same dressing will destroy the lichens, which harbour many insects. (F) Early in October, the trees should have a band of 6 to 9 inches of best wheel-grease plastered round them, say, 4 feet from the ground, to catch the wingless females of the winter moth, as they will then be crawling up the stems. Possibly a little oil in the grease would prevent it hardening, and, if necessary, this should be kept in a sticky state, by renewal, until Christmas, in open weather. The marvellous fecundity of this little creature under favourable circumstances is surprising, and every female should be caught as far as possible. Cases are reported where the moths were so thick in the grease as to form a bridge for their successors to pass over; and one gentleman says the mate is so gallant that he carries the lady up in his claws to the upper branches (?). This requires confirmation. It must, however, be borne in mind that there are several species of moth which affect fruit trees; and besides these, there are the weevils, which, owing to their depredations being carried on at night, frequently escape notice; other weevils work by day, and in severe cases would pay for a search being made for the night-workers by lantern-light, when a tap on the tree-stem or the branches will bring them down on to the cloth, which should be spread beneath; the insects must then be killed with boiling water, no insecticides being of any avail. (G) Other means of prevention are by encouraging those birds which feed upon insects. The sparrow has a bad name, but yet I take him to be a friend, rather than a foe; the starling also, and the active family of tits, are great devourers of insects, grubs, &c., in the winter months (and at other times); also the tree creepers, chaffinches, and all the summer songsters and soft-billed birds generally, as nightingales, whitethroats, blackcaps, warblers, &c. I would make it punishable to take the eggs of any of these birds, excepting sparrows. Fruit-eaters—like the blackbird, the thrush, and the bullfinch — we must keep within reasonable limits; but, from observation, I am convinced that most birds are our friends, and we must allow them some fruit for their good deeds in other ways.

In Kent, many of our fruit tree plantations are thickly planted with both over-head fruit trees and low bushes, Cob-nuts being beneath all. Some amount of summer pruning is done in these, and I advise that all the cuttings should at once be collected and burned, instead of being allowed to lie upon the land, or stacked in a heap, as methods offering a ready shelter to insects. A large fruit salesman says that he could distinctly trace the path of the caterpillars near a roadway where this kind of rubbish was allowed to lay about in heaps. In the nursery we are now keeping all our small paths (formerly grass) free from weeds, as we found that they formed convenient hiding-places for many kinds of insects. In Cob-nut plantations, the trees and fruit and Nut bushes are pruned in the winter at the same time; this wood is usually stacked in the plantation itself for the use in many cases of the "Hoppers" the next season, or for starting fires on the grattans (oasts), when the stubble is also burnt.

I believe that it would pay the grower over and over again to burn the whole of the prunings and trimmings directly the pruning is completed, as the mining insects (Sesias), &c., are often hidden in the larvæ state in the soft shoots, and have to be guarded against, also the Currant mite, &c. We attribute the immunity we enjoy from insect pests in our fruit nursery to the cleanly cultivation that is insisted upon, and, as a rule, we burn all stock-heads and prunings at once. I enter a plea for the birds, as there is no doubt the extensive planting of fruit, and the equally extreme grubbing of their woodland shelters, has really upset the balance of Nature, and we must do all we can to restore this. Nightingales were much more numerous than usual this season, and possibly, if the present laws (Wild Birds Act) are carried out fearlessly, we shall, by degrees, get more useful birds, and as the nightingale and swallow return for years to build in the same spot, probably other insectivorous birds will do the same. This season, loss by caterpillars is felt all over the country, although some fortunate patches are free, and every means should be taken to overcome the present excessive development of the injurious lepidoptera. There should be no grass roads in fruit plantations, still, strange to say, the trees on grass in many places are more free from the pests than those on ploughed or dug land. Probably because in this case the chief danger was from weevils, but who found succulent food ready for them below. On the other hand, some even contend that the spade cultivation increases the evil, by affording a softer soil for the larvæ to penetrate when they prepare to take the chrysalis stage; others, again, point to neglected plantations, not dug for years, which are free from the pests. Perhaps the birds had full swing in the latter; but from whatever cause this great evil springs, it is a present and growing one, and no methods should be left untried in doing battle with them.

In the culture of dwarf or plantation trees (distinct from standards) the leaves can be pinched, and the leaf-rollers killed at home, while the nests of the lackey-moth can be easily destroyed in the web stage. I trust these notes will do something to ventilate this subject, and put growers on the alert, so that next season may see a marked improvement in our fruit returns.

Since penning the above I have received a circular from St. Mary's Cray, which gives admirable figures of the chief destructive moths, and remedies for their destruction. Messrs. Harlow and McMunn (the latter a surgeon, who admirably illustrates the work) claim that they have, after many trials, found the best remedy for dressing the trees, and are sending it out under the name of the "Insecticide and Ovicide Compound;" also a solution for syringing purposes, which promises to be very useful. The little work (price 3*d.*) is well worth the attention of growers, and may be had from the publisher, Edw. Clarke, Printer, High Street, St. Mary's Cray. *Geo. Bunyard, Old Nurseries, Maidstone.*

New or Noteworthy Plants.

ACINETA CHRYSANTHA, *Lindl.*

This is a showy and very interesting plant, which originally appeared as Nieppergia chrysantha E. Morr., in *Annales de Gand*, t. 282. It was exhibited at Ghent by M. Auguste Mechelynck, in September, 1849, and was supposed to come from Mexico. Lindley at once transferred it to Acineta (*Paxt. Fl. Gard.*, i., p. 31), to which it unquestionably belongs. Since that time it has been either very rare or quite lost sight of, but now a plant sent from New Granada, by Patin, has flowered in the Kew collection, and on looking for a name for it, I find it belongs to the above. I therefore suspect that New Granada, and not Mexico, is its native country. Like other Acinetas, it produces a pendulous raceme, the flowers in this case being of a bright yellow, something like A. Barkeri, the lip heavily blotched with crimson. It is readily distinguished from all other species by a strong curved horn, directed backwards at the base of the crest, on which Morren seems to have relied in separating it from Acineta. It is, however, present in a more rudimentary condition, or in another form—perhaps it may be said, in other species. There is a good deal of confusion in the above cited accounts of the species. Morren figures the raceme erect, but this is evidently an arrangement of the artist's, to get it on the plate. Lindley remarks:—"This noble-looking plant has exactly the habit of other Acinetas, except that the raceme grows erect." He then proceeds to doubt whether the raceme is habitually erect, because, on the drawing, one raceme is upright, and another bent downwards. But I can only find one erect raceme on the plate. He also transposes the colour of the column and lip, saying, "the lip appears to be white, and the column crimson," while the plate shows exactly the reverse, as does also the living plant. As the plant was only known from these accounts, it was with a good deal of satisfaction that I recognised it. One or two others are showing flower, but I cannot yet say if they are the same species. *R. A. Rolfe.*

Albuca (Eualbuca) trichophylla, *Baker, n. sp.**

This is a new species of Albuca that has just been flowered at the Cambridge Botanic Garden by Mr. R. I. Lynch. He received it from Natal by Mr. R. W. Adlam. Its nearest ally is A. juncifolia, Baker (*Bot. Mag.*, 6395). It has small bright yellow flowers, and several slender pubescent subterete leaves. The known species of Albuca have increased rapidly of late years. There are now above thirty of them described.

Bulb ovoid, $\frac{1}{2}$ by $\frac{5}{8}$ inch in diameter. Outer tunics white, membranous, not splitting into fibres at the top. Leaves 7, contemporary with the flowers, erect, subterete, pubescent, deeply channelled down the face, 9—10 inches long, 1-16 inch in diameter. Peduncle slender, terete, flexuose, as long as the leaves. Flowers few, in a lax raceme half a foot long; pedicels ascending, the lower 1 inch long;

* *Albuca (Eualbuca) trichophylla*, Baker, n sp.—Bulbo parvo ovoideo tunicis pallidis membranaceis; foliis 7 synanthiis subteretibus gracilibus pubescentibus; pedunculo foliis æquilongo; floribus laxe racemosis; pedicellis brevibus ascendentibus; bracteis parvis membranaceis; perianthio parvo luteo; antheris alternis rudimentariis; stylo cuneato ovario æquilongo.

bracts small, lanceolate from a deltoid base. Perianth bright yellow, ½ inch long; segments oblong, faintly tinted with green. Stamens nearly as long as the segments; alternate anthers rudimentary. Style cuneate, prismatic, as long as the ovary. *J. G. Baker, Herbarium, Kew.*

Dendrobium transparens, alba, *n. var.*

This, as its name indicates, is a pure white variety of Dendrobium transparens, without the slightest trace of colour anywhere, and an exceeding chaste and lovely form it is. Of course, it possesses no other difference, being simply an albino, but it is quite a rarity, for the species has been in cultivation since 1852, and frequently imported, but I do not find that anything has been seen like it before. It was sent by Messrs. F. Sander & Co., of St. Albans, who received it from Mr. Hamilton, gr. to Hamar Bass, Esq., of Burton-on-Trent. The plant was originally introduced by Mr. Sander. *R. A. Rolfe.*

WATERING OF POT PLANTS.

The watering of pot plants, or rather the time when they require that attention, seems but little understood by amateurs, or one would not so frequently hear the inquiry, "How often shall I water?" the query leading one to suppose that the questioner expects that there are set times for the operation, and that they come as regularly as do the periods for meals to ourselves. This may be the case at certain seasons of the year as regards some plants, such as are of a soft-wooded nature, and form roots quickly, and become pot-bound, when they take up moisture freely, and, if the drainage is good, they cannot well be over-watered, so that with these it would be pretty safe to say, give it daily; but, as regards others, great discrimination is needed, as without it, much harm may be done, and especially is this so during the dead time of year, when there is little or no activity in vegetation, and both plants and roots are almost dormant, and not only so, but at the period referred to, there is nothing to bring about dryness, and soil that is made wet then soon becomes sour and inert. The plants which suffer most when they get into that condition, are those of a hard-wooded nature, that require peat to grow in, and if this is made sodden the fine roots soon die, or, if they live, they become sickly. To prevent this, they should have no more water afforded them during winter than is absolutely necessary to keep the balls moist, and it is good for the plants that these should become rather dry sometimes, as then more air is let into the soil, and air sweetens and purifies.

The time of greatest danger with hard-wooded subjects is immediately after they have been potted, as then it often happens that the water passes away through the new soil without wetting the old. This occurs through non-amalgamation of the two, the one being comparatively loose and open, and the other hard and impervious. To make matters safe, with such things as Azaleas, it is a good plan, before repotting takes place, and after the plants are knocked out of their pots, to soak the balls by standing them in a tub of water, and after they have been there some few hours, they should be stood aside to drain. So treated, there is no fear of the centres being dry, and instead of watering becoming necessary immediately potting is over, and the plants requiring it frequently after, they will stand without for some time, and gradually get hold of the fresh peat, which, when used, ought to be in a moist, useable condition; as in that state it can be pressed or rammed firmly, which is essential to good potting of these plants. A cultivator who is accustomed to the cultivation of plants knows at a glance when to give water, and if he cannot see the surface of the soil distinctly can quickly tell by the ring of the pot, as this, when rapped by the knuckle, gives out a clear sound if the ball be dry, and a dull dead response if the reverse. This latter is caused by the pressure of the soil on the sides, owing to its expansion, and ring by contraction, through the water being out and air in instead. Another guide to plant growers is the condition of the top of the plant, as the quantity or frequency of watering depends much on the amount of the foliage, or whether fresh growth is taking place, for with abundant leafage, and more forming, the power of absorption by the roots is great, as so much is taken up and evaporated on bright sunny days, and the same if the plants have a head of bloom to support. This draws much on their resources, and atmospheric conditions outside affect plants much, as when there is a quick movement of air, and it is dry and light, it licks up, as it were, all moisture on its way, and makes foliage look distressed from the loss. To rectify this, a sprinkling of the floor of the house the plants are in, or a syringing overhead, or both, is the best thing; but the latter only when the sun is off, and the revival will be quick and apparent. Plants with large fleshy roots and big leaves drink freely, and at and after this time for some months to come cannot well be over-watered; and yet in their case judgment is required, or the best of soils may be spoiled. *J. S.*

ORCHID NOTES AND GLEANINGS.

SELENIPEDIUM CAUDATUM, *Rchb. f.*

A very curious form of the above comes from Mr. A. J. Keeling, gr. to D. O. Drewett, Esq., of Riding Mill-on-Tyne. In front of the lip and round the mouth of the same is wholly suffused with dark purple-brown, while the infolded side-lobes are also darker than usual, owing to the spots being nearly suffused, especially towards the base. It is only a case of colour variation, the flower being normal in other respects, but it gives to the plant a somewhat unusual appearance. *R. A. R.*

Cattleya superba.

The difficulty of getting this Orchid to succeed for any length of time under cultivation can be the only reason for its comparative scarcity, for few even of the gorgeous genus Cattleya surpass it in beauty. It was discovered originally by Schomburgk, in British Guiana, and was first flowered in this country in 1838. The pseudobulbs are stemlike, 6 to 10 inches high, and produce the flowers from between the two leaves at the top. A plant at Kew now bears a spike of four flowers, each of these being 5 inches across. The sepals are oblong, pointed, and of a bright purple-rose, the petals differing only in being broader. The lip is extremely beautiful; the side-lobes close over the column, and, like the broad, cuneate, central lobe, are of a rich purple-crimson; the disc is yellow.

Mr. James Anderson mentions this Orchid along with Epidendrum bicornutum, Ionopsis paniculata, and a few others, as one of those best adapted to test the grower's skill. It undoubtedly requires a warmer temperature when growing than such as C. Mossiæ, and should only be shaded when the growths are young and succulent. Abundance of moisture at the roots and in the atmosphere is necessary, together with a constant supply of fresh air. Judging by imported pieces, it grows naturally on the branches of trees with little or no covering to the roots, and it has been found best under cultivation not to attempt to confine them in pots. Blocks or shallow baskets are to be preferred. *W. B.*

Cypripedium Wallisii.

This plant requires similar treatment to that of Cypripedium caudatum, that is to say, pot culture appears to suit it admirably, but it is necessary to well drain the pots, as it requires a liberal supply of water during the season of vigorous growth; when this is completed, it must still be kept in a moist condition, for as the plant has no pseudobulbs to assist in maintaining it through a period of drought, it must not be allowed to become dry, or the leaves will be liable to shrivel, and the plants fall into bad health, which is a perilous condition for this section of the genus. We find good fibrous peat when mixed with leaf-mould and sharp sand to be the best potting material for this plant, to which may be added with advantage some nodules of charcoal. It should be elevated upon a cone-like mound, which not only carries away the water more quickly from its base, but it gives a greater surface, and allows the roots to work more freely. Upon the slightest sign of the potting material becoming bad, it must be at once removed from contact with the roots, and replaced with new and sweet mould; care, however, is requisite in the performance of this operation, or serious injury may arise from damage to the roots. The cool end of the East India-house is a very suitable place to grow this plant; we have, however, grown C. caudatum equally well at the warm end of the Cattleya-house, and in all probability this plant may be so grown successfully. It requires to be shaded from the sun's influence during the hotter portion of the season, but when the sun's heat begins to decline, let the plants have all the light possible, in order to secure and finish up strong flowering shoots.

The most suitable time for potting or re-potting we find to be just as it begins to put forth new shoots, which takes place sometimes shortly after flowering. It should also be kept perfectly free from insects of every description: green-fly sometimes becomes a great plague by getting amongst its blossoms, and causing great havoc, but these must be carefully destroyed. "*Orchid Album*," *May.*

Bletia catenulata, *Ruiz and Pavon.*

This is a large and handsome Bletia, one of the showiest species of the genus, though very seldom seen in cultivation at the present day. A fine specimen has been sent to Kew for determination by Mr. James O'Brien, having been imported from Northern Peru. B. sanguinea, Pœpp. and Endl., is a later name for the same. The flowers are large, and of a bright rosy-purple shade. *R. A. R.*

Aganisia cœrulea.

This should be grown on a block of wood, or, better, perhaps, a raft, in which position its creeping stems will have space to ramble, and its roots will be able to better absorb the moisture from the atmosphere than is the case when an attempt is made to grow this plant in a pot. In its native country the plants grow upon the branches and stems of the forest trees, where they derive nourishment from the tropical rains, and from the decayed leaves which fall from the trees and alight amongst their pseudobulbs; and in the dry season they are sustained by heavy dews. Under cultivation the present plant enjoys a liberal supply of water during the growing season, and during the period in which growth is not active the roots must be kept in a moist condition in order to maintain the pseudobulbs plump and firm. Neglect of this enfeebles the plant, and prevents the development of its handsome flowers in due season.

The temperature of the East India-house with abundant atmospheric moisture is most congenial to this species during the period of active growth. It should be well exposed to the light, and shaded from the sun during the hottest parts of the day in summer; but during the winter no shading will be necessary, and the plant or plants may be hung up near the roof-glass in order that they may obtain all the light possible. The plants of this genus do not require much material about their roots, but a little is necessary when grown on a raft in order to avoid rapid evaporation. To this end a little living sphagnum moss should be placed about its roots, and a gentle sprinkling from the syringe morning and evening will be highly beneficial to continue them in robust and vigorous health. In addition, the rafts should be frequently taken down and dipped in a tub of water, allowing them to become well saturated before hanging them up again in position. This, however, will not be needed frequently in winter, but even then do not allow the plant by any means to suffer in health by shrivelling. It will also be necessary to carefully keep these small-growing plants free from insects, because, if these are allowed to increase, they rapidly produce a sickly appearance, which is

too frequently succeeded by death; but at any rate, it leads to anything but the desirable appearance from whence its generic name is derived. "*Orchid Album*," *April*.

Catasetum purum, *Nees*.

This is a very old species, which occasionally reappears in gardens, and which has twice recently been sent to Kew for determination; first, by Mr. W. Bull, and then by M. Godefroy Lebeuf. It produces an erect raceme of green flowers; the lip is bright green, and the other segments of a pale whitish-green. It belongs to the Eucatasetum group, with erect galeate lip, but differs from many of the species in having the antennæ in the same plane; not one standing forward and the other curved round near the base of the column. This character cannot be made out from dried specimens, and I was doubtful if it occurred in the section at all till a short time ago. Now I find it occurs also in C. atratum, Lindl., received from Messrs. F. Sander & Co., of St. Albans, for determination, and will therefore serve to separate these from C. macrocarpum, Rich., and its allies. The peculiarity is not meaningless, but when one of the antennæ is curved backwards, away from the other, it has been found to have lost its function of ejecting the pollinia when touched. The species appeared in 1824, being described by Nees, in *Pl. Hort. Med. Bonn.*, t. 1. It is also well figured in *Bot. Mag.*, t. 3388. C. semiapertum, Hook., *Exot. Fl.*, iii. (1826), t. 213, is synonymous. *R. A. Rolfe.*

Oncidium splendidum.

We have found the imported plants of Oncidium splendidum thrive admirably in either a basket or a pot, and the strong growths bloom very freely. In the earlier time we had very little opportunity of estimating the habit of growth or its free-blooming qualities, as the few plants then known were cut for making stock as frequently as possible. In February of the year 1871, however, Lord Londesborough, then a distinguished patron of horticulture, exhibited a plant of Oncidium splendidum in flower before the committee of the Royal Horticultural Society at South Kensington, when it was much admired, and received a First-class Certificate. Whether grown in a basket or pot, it requires to be well drained, and it does not require a great amount of soil about its roots; this should consist of rough fibrous peat, from which all the fine soil has been beaten, and to this may be added a small portion of sphagnum moss. Some small pieces of potsherds, mixed with the soil, will also serve to keep the soil open and porous, and thus the water is carried away quickly instead of remaining, causing the soil to become sour and stagnant, in which condition this plant soon deteriorates, an evil which I have so frequently explained in these pages, and cautioned my readers against. In potting, or basketing, make the soil very firm; when growing, a liberal supply of moisture and a moist atmosphere are requisite, but when the growth is mature a very little will suffice. In the autumn, or beginning of winter, the spikes begin to push up, when an increase in the water supply will be necessary, in order to induce good development of flowers. This plant should be grown in the Cattleya-house, and it requires all the light possible; but in the most powerful sunshine a little shade will be found necessary. It is a plant very little troubled with insect pests, yet sometimes the white scale infests it, and unless this is speedily cleared away, the plant soon declines in health, and fails to make new growth. "*Orchid Album*," *April*.

Lycaste cruenta

is a fine bold-growing species; the bulbs are ovate, supporting a pair of broadly plicate leaves of a light green colour. The flowers rise from the base of the bulb, the stem rising some 6 inches in height. It is usually one-flowered, but sometimes a pair of flowers are produced upon the same scape, both opening together, and each measuring upwards of 3 inches across. The sepals are bright yellow inside, and green without; petals smaller, of the same form, and of a uniform rich yellow, the lip being three-lobed, and shorter than the sepals. It blooms in the months of March, April, and May, and it continues in bloom for three weeks or a month without distressing the plant. This plant is of easy culture, and we prefer to grow it in a pot, for, although it will thrive in a hanging-basket, or on a raft, we find it requires more care and attention, without yielding the slightest additional improvement either in the strength of the plant, or number of blossoms produced. It roots freely, and requires a liberal supply of water to maintain it, and enable it to develop large and vigorous bulbs, which shall afterwards produce an abundance of flowers. After growth is mature, the supply of water must be gradually reduced until it stops entirely, and the plant must be allowed to become quite dry; but during the season care must be taken that the pseudobulbs do not shrivel, as when this occurs the plant is weakened. The pots must be well drained, and the plants potted in good fibrous peat, from which all the fine particles have been beaten, and to this should be added some small potsherds, or a few nodules of charcoal to keep the whole open and porous. This plant does not like the coolest house, and we have found it to thrive best when placed at the coolest end of the Cattleya or Brazilian-house, where it should enjoy an abundance of light, and be lightly shaded during the hottest part of the day, otherwise the leaves are apt to become scorched and disfigured—and one of the chief beauties of any plant lies in its perfect foliage. "*Orchid Album*," *April*.

Hybrid Cattleyas.

M. Bleu has raised a hybrid between C. amethystina and C. Acklandiæ, and a Metis between the hybrid above-named and C. Mossiæ, which Metis he calls Cattleya Parthenia. The two forms are described in the May number of the *Journal of the National Horticultural Society of France*.

POLEMONIUM PAUCIFLORUM.

In a recent issue (p. 772, vol. v.) a correspondent favoured us with an account of this singular Polemonium, remarkable for the paucity of its flowers, their shape, and yellow colour—so different to the conditions that obtain in other species of the genus. The illustration at p. 97, fig. 15, drawn at Kew by Mr. Weathers, will suffice to complete the account of this desirable novelty.

CEDAR PENCILS.

The manufacture of Red Cedar pencil-wood has for years been almost exclusively confined to Florida, where this tree (Juniperus Virginiana), grows to a large size and in great perfection. The business has been in the hands of a large foreign house, which supplies a good part of the world with lead-pencils, and has been profitable. Large Cedar timber, straight grained, and of a suitable quality for pencil-stuff, has become scarce in Florida along the streams on the west coast, where the best was found; and factories are springing up in different parts of the south, especially in Alabama, where, at Gurley, sawing pencil-stuff is already a considerable industry. The best Red Cedar, however, now left will be found near the Red River, in Texas, and in the Indian Territory, where this tree attains a greater size than it reaches in Florida, while the quality of the lumber is not, probably, in any way inferior.

The world has become so accustomed to using pencils made of Red Cedar, that it will not readily adapt itself to any others. The supply of this lumber of suitable quality, however, is not large in proportion to the demand, and cannot hold out many years longer.

The Red Cedar is the most widely distributed of North American Conifers, and in some parts of the country it is one of the most common trees; but it is in a few favoured localities only that it grows in a way to produce the straight-grained material essential for pencil-making.

The distillation of oil of Cedar, for which there is now a large commercial demand, from the sawdust and other refuse, has been profitable in the pencil-mills at Cedar Keys in Florida, and might be carried on to advantage in other parts of the country. It can be made, of course, from wood of the poorest quality. *Garden and Forest.*

THE SHORTENING OF THE NAMES OF ROSES.

So far as I am aware, nothing was said or done in this direction at the late Conference. Nevertheless, it is a subject of great practical importance, alike to editors, reporters, and rosarians. Every word or letter added to the name of a Rose beyond what is needful to distinguish it from any other species or variety is a sheer waste of space, time, or force, repeated every time it is thought, spoken, written, or printed; and yet words and names are piled up over the poor Roses, as if the longer the name the better and more fragrant the Rose. Neither is it any uncommon thing to find the smallest Roses with the longest ugliest names. Why, even at the Chiswick Rose Conference, one of the choicest gems of a fancy or Polyantha Rose was weighted with the name of Anna Marie de Montravel; neither was that the longest name, for a choice Tea was handicapped with one half as long again, viz., Mademoiselle Elizabeth de Grammont.

In some of our new Roses we approach almost the perfection of brevity—such as in The Bride, Puritan, Luciole, Emperor, Empress, Sappho, Eclair, Sunset, Red Dragon, Masterpiece, Her Majesty, &c. Among older Roses we have a few brief names, among Perpetuals, as Abel Grand, Alfred Colomb, Annie Laxton, Annie Wood, Black Prince, Clara Cochet, Dr. Andry, Dr. Don, Dupuy Jamain, Duke of Teck, Egerie, Elie Morel, John Bright, John Hopper, La France, Le Havre, Louis Doré, Magna Charta, May Pochen, Mrs. Baker, Paul Neyron (the largest of all Roses with almost the shortest name), Queen Victoria, Queen of Queens, Victor Hugo. Amongst Teas we have Adam, Alba rosea, Bougeri, Devoniensis, Etoile de Lyon, Goubault, Homer, Marie, Niphetos, Rubens, Safrano.

Among Noisettes we have the reasonably short names of Cloth of Gold, Aimée Vibert, Lamarque, Rêve d'Or, Maréchal Niel, and Salfaterre. What could hinder several of these being yet further reduced, thus—Gold, Vibert, Niel, d'Or, to distinguish it from the Tea La Boule d'Or, which latter might surely be cut down to B. d'Or. On the same principle, most of the preliminary prefixes might be got rid of, for such Teas as Catherine Mermet, Comtesse de Nadaillac, Francisca Kruger, Madame de Watteville, Mademoiselle Elizabeth de Grammont, Souvenir de Madame Bernet, Souvenir de Thérèse Levet. As, so far as I am aware, there are no other Tea Roses under their proper names, there seems no practical difficulty in henceforth reducing these, thus—Mermet, Nadaillac, Kruger, Watteville, Grammont, Bernet, Levet. Surely, too, our favourite Bourbon might well afford to drop the Souvenir de la, and be known in future as Malmaison, the Baronne be dropped for Gonella, Sir Joseph for Paxton, and so on.

The hybrid perpetuals opens a yet wider field for abbreviation. There are, for example, three Rothschilds—a Baroness which would have to be retained—and two Barons Nathaniel de's, the latter could be written Rothschild—with the name of their respective raisers after the surname, thus (Pernet or Leveque) as these are two separate Roses. But it is rare to find two Roses with the same surname. Surely, too, this endless array of Comtesses, Duchesses, Madames, and Mademoiselles, might be cut down to a letter or two, thus Cse. for French; Cs. for English; Dse. for French Duchesse; Ds. for English; Mm. for English Madam; Mme. for French; Mle. for Mademoiselle. Then such well known Roses as the following might surely be cut down to the

surname only : Camille Bernardin, Captain Christy, Charles Darwin, Charles Lefebvre, Comtesse de Serenye, Duchesse de Caylus, Duke of Wellington, Ferdinand de Lesseps, François Michelon, Général Jacqueminot, Madame Clémence Joigneaux, Madame Ferdinand Jamain, Madame Hippolyte Jamain to Mm. or H. before the surname; Madame Isaac Pereire, Madame Prosper Laugier, Mademoiselle Marguerite Dombrain, Mdlle. Marie Cointet, Marguerite de St. Amand, Monsieur Alfred Dumersiel, Souvenir de Monsieur Boll. These will suffice to show what might readily be done through this simple scheme of cutting down names, and retaining the last only. Where more was needed, as in the case of Rothschild, Verdier, and others, initials would distinguish between varieties as well as long names that are tedious to write, burdensome to the memory, and of no earthly use, unless to damp the zeal of Rose enthusiasts, and warn off amateurs from the culture alone of Roses.

But some contend that these long names are useful, if not indispensable, as a sort of order of honour and of Roses, conferring a kind of immortality on great persons—authors, soldiers, poets, or statesmen. But they would obviously fulfil this function better by dropping all the Christian names or honorary titles, for while there may be many Dukes of Wellington or Marlborough, Sir Robert Peels, Richard Cobdens, or Wm. Ewart Gladstones, there is but one Wellington, Marlborough, Cobden, Lesseps, or Gladstone, who is likely to be immortalised in our distinguished order of Rose merit. *Rosa.*



Fig. 15.—Polemonium pauciflorum: flowers pale yellow. (see p. 96.)

The Apiary.

TAKING HONEY AT THIS SEASON.

As soon as sections are filled, they ought to be removed from the hives. No good can result by allowing them to remain on the hives, but much evil. The bees would be sure to go over them more or less, and this would discolour the honey contained in them. So much trouble is caused by smokers who will not smoke, that we will again refer to the carbolised cloth. Two ounces of carbolic acid, two ounces of glycerine, to be mixed with about a quart of boiling water. Stir the mixture well, and when cool it is ready for use. Take a piece of calico large enough to cover all the frames or sections, dip it in the mixture, and wring it out. Do not forget the latter process, for two reasons. First, it is quite unnecessary to waste the mixture and punish the bees too much; and, secondly, carbolic acid will not improve the honey, if it drops on the combs. If used in the above way, the happy medium will be preserved, the bees will be frightened, and the honey not injured. When a piece of calico thus treated is laid on sections or combs, the bees at once retire below, and give no trouble to the bee-keeper. This plan is far better than removing one section at once, and the bees are much more easy to handle.

Extracting.

This will soon be in full swing. As this season may certainly be ranked a good one, most bee-keepers will probably have a lot of new combs. These look very beautiful, but great care must be exercised in extracting the honey from them, or they will fall to pieces. Even the uncapping process has to be done carefully, and the combs should not be laid down flat, but propped up a little. I speak feelingly on the subject, because in earlier stages of my experience these things happened to me. I have before said, do not turn the machine too fast, and I might add, that very often it is best to extract half of one side, then the whole of the other, then the remaining half. Though this is what we might call a triple trouble, it is a kind of trouble which is well repaid by seeing whole combs come out the extractor. When the honey is extracted, the combs may be given back to the bees to clean out, and then wrapped up and put away in a dry place. If the combs and frames are carefully wrapped in paper, they will come out next spring as clean and fresh as when put away, and will be gladly taken to by the bees at once. *Bee.*

Nursery Notes.

CARNATIONS AND PICOTEES AT MESSRS. J. VEITCH & SONS.

The hot sun of a few days ago and the recent rains have done much to spoil the beauty of the flowers, and hasten the end of the Carnation season of the present year Londonwards. It is with infinite trouble and care that the plants can be got to grow fairly well at Chelsea now, and the task becomes yearly greater as the locality fills up with dwellings, each pouring out its little amount of smoke, but yet adding to an ever-growing bulk of, to plants, poisonous gases, under which they pine and dwindle. Fortunately there is compensation in the case of plants which bloom in the summer; the fires are mostly "out" at the same time as the flowers, and if plants must be harboured in frames at the time when smoke is king, at least they flower at a pleasant time.

All the best varieties of Picotees and Carnations find place in this collection, and we do not remember missing any good one that ought to be there. This is as it should be in a first-rate nursery, and having said so much, it will be our pleasant task to take note of a few novelties, and call attention to indispensable ones of older date.

As in Chrysanthemums, we have an Elaine in Carnations. It is white, full, with grass of fair strength, the height of flower-stems being 2 feet—a novelty of last year. Brilliant, a flower of the same year, is a self of deep rose-pink, the reverse of the petals whitish—a neat, full-cupped bloom; flower-stems 2½ feet, and growth correspondingly stout and strong. Defiance is the colour of Defiance Verbena; old gardeners well know it, a brilliant scarlet, the flower is pretty good in quality, it might be fuller with advantage; as it grows strongly and is dwarf—1½ feet, there ought to be many uses to which to put the variety. William Toby is a very dark velvety crimson, of regular build with capital grass, readily admitting of layer-

ing, which is not true of all the fine bred varieties. It is a very neat flower, and has flower-stems 2½ feet in height. Purple King is said to be an improved Purple Emperor (Turner). The growth is of fair strength, and the flower is beautiful. Notable are—

Thalia, a rose flake, is a full, large flower, with stems 2 feet high; Master Fred, of the same class, is also good. In purple flakes, mention may be made of Earl Stamford, only 1 foot high, good for pots and window boxes and narrow borders; Purple Prince, and Bijou not showing well this year, its grass being extremely weak. Venus, a white self—very pure, has good grass, showing vigorous ancestors, and has the true Clove perfume. Joe Willet, with its bright scarlet colour would be soon in general cultivation, but the flower, has too few petals, and is otherwise wanting. King of Yellows, Will Threlfall (yellow self), Elise, with primrose-yellow ground, flaked with crimson, and of strong growth, are all very desirable varieties of a section of Carnations not too well filled. Alice Ayres is a strong-growing rose flake; Virgo, a white self, of much merit; Annie Benary is a crimson flake, the ground colour white, being finely marked. The grass is that of the Clove Carnation, and the height of the stems is 1 foot. Raby is a cerise-pink self, growing 2½ feet high, robust and long grass. Walter Ware, a purple self, is of equal merit and height; W. P. Miller, a neat flower, pure white, is somewhat dwarfer.

We cannot close this list of Carnations without mentioning the Blush Clove, a counterpart of the old crimson, but of a soft rose colour. Everyone should get this. It has the fault of splitting, but a little indiarubber ring slipped over the still closed bud obviates this fault.

In red-edged Picotees, pretty flowers were observed in Miss Polly, a variety with very abundant grass, and stems 2½ feet high; Elise, the edge very narrow, the florist so-called wire edge; Jewess, and Mrs. Keynes, of about equal merit; Favourite is a strong grower, with a wire edge—a neat-looking, full bloom.

Of crimson-edged flowers mention must be made of Ensign, Brunette, and J. B. Bryant, the last with a wire edge. H. B. Camm and Miss H. Chancellor are excellent purple-edged flowers. Alice is a remarkable rose-ground Picotee, with a crimson edge. The colour is soft and pleasant to view, and the plant is possessed of a dwarfish habit, with grass of good strength.

Plants and Their Culture.

The Greenhouse.—Pleromas may now be afforded abundance of water, and some assistance from liquid manure, and young stock of the plants should be shifted and the shoots kept stopped. The useful autumn blooming Cassia corymbosa should get attention, this being one of those free-blooming plants whose cultivation should be more general. It is of easy culture. The plants will now be improved by being afforded weak liquid manure occasionally, and should have their shoots tied in loosely, and not allowed to want for water at the roots at this period of their growth. Chorozemas should now be growing freely, any needing shifting into larger pots should be attended to at once; and as the Tetrathecas lose their bright colour, dead flowers should be picked off, the shoots regulated and tied out, repotting them if it is required. In the potting soil a small portion of loam should be used, and more loam, say one part to three of peat for most of the other plants above-mentioned, and for Pimeleas, Polygalas, Chorozemas, and Pleromas. No time should be lost in completing all potting work, so as to give the plants a long season in which to grow, employing clean pots and clean drainage, avoiding too large a shift at one time, and giving plants a little extra attention for a short time after potting.

The early propagated Bouvardias should now be ready to shift into their flowering pots; 5 or 6-inch will be found large enough, as the plants can be given plenty of liquid-manure when the pots are full of roots. Some bone-dust should be used in the compost. Any strong shoots unduly taking the lead should be stopped. Succession plants should now be all out of the cutting-pots, and making good progress. Old plants in pots should get abundance of weak liquid-manure, but the old stock which was planted out will not require so much feeding if they stand on an old hotbed.

Fuchsias should be kept well pinched back, and potted on as required; and the plants to bloom in September should not now be stopped. Show and fancy Pelargoniums will soon be past their best; the earliest plants will now be ready to cut hard back, having been dried off previously. The later succession of these will be ready to place out in the open, and should not be kept in the greenhouse or conservatory a day longer than can be helped after the best of the flower is over, greenfly being found very troublesome. The plants should get no water for two or three weeks, and during stormy weather they should be laid on their sides. Cut them back when ready, and when they have broken, repot them in smaller pots than they occupied before, placing them in a cold frame. I do not advocate the propagation of these Pelargoniums from cuttings of the wood when ripened off, but prefer taking young shoots early in spring, and which will make good plants in one season.

The late lot of Celosia pyramidalis and Cockscombs, also Balsams and Impatiens, should receive a shift, and be kept growing in a warm pit, gradually hardening them off as the plants complete their growth, and begin to bloom. A few pots of Petunias, Abutilons, and Coleus, should also be propagated if required for late decorative work; these plants will be useful in small pots in autumn. Eupatoriums should get a shift, and be stopped occasionally. These plants will take abundance of water at this time, the pots being full of roots. A few cuttings of these struck now, and grown in small pots, make very effective decorative plants. Old plants of the hardier kinds, such as E. riparium, should be plunged out in the open, where they will make sturdy growth, without requiring so much attention in watering them. *George Wythes, Syon House, Brentford.*

Fruits Under Glass.

Fruiting, and Winter-fruiting Tomatos.—Put in a few cuttings of Vick's Criterion, Hathaway's Excelsior, and Sutton's Perfection, or some tried winter croppers, and shift into larger pots plants intended for late bearing, not using too rich a compost for this purpose, and harden off as soon as they begin to root, bearing in mind not to employ large pots if the plants are for planting out. Take off all the old foliage and side shoots from those in fruit.

Strawberries.—Runners should now be potted for next season's forcing, placing them in a position fully exposed to the sun, and on a floor impervious to worms. When potting, it is a good thing just to give a sprinkling of soot over the crocks, and always pot firmly, using the same kind of compost as that recommended in last month's Calendar. Remove runners and weeds as soon as they appear on the potted plants, and if possible water them with rain-water, and plentifully when the roots have penetrated the soil, and afford them a light syringing in the afternoon of sunny days. For forcing, La Grosse Sucrée, Vicomte Héricaut de Thury, President, and Sir J. Paxton are good.

Melons.—Those in full bearing will require top-dressing with old Mushroom dung, or similar materials, a watering with manure-water occasionally, or slight sprinklings (once a week) with Thomson's Vine manure before affording water. Give plenty of ventilation to the pits or houses whenever possible, to keep the foliage healthy and the texture firm, and do not stint the plants of space to expand their leaves; the trellis should be 6 or 8 feet long, and the plants 2 feet apart. Plants in good health, when afforded this amount of space, will bring from eight to twelve fruits to perfection, if well cared for. Red-spider should this season not be so prevalent, with the little necessity there has been for excessive firing. Keep the laterals on fruiting plants pinched to one leaf when a sufficient number of fruits are set; fertilise the blooms at mid-day, when the pollen and the stigmas are dry. The plants may be syringed lightly on bright days when shutting up the houses. Prepare beds for and plant out successional plants. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Fruiting Strawberries for Next Year.—In the event of the ground to be planted with layered Strawberry plants to fruit next year not having been as yet prepared for the plants, no time should be lost in doing it, so as to get the plants put out early without receiving a check, this being the secret of obtaining a good crop from one-year-old plants. If the ground is a moderately heavy loam, of good depth, very little will be required in the preparing of it, as compared with very heavy land; a deep turn over, with a fair coating of manure, will suffice, and some capital crops of fruit may be obtained when nothing more than this is done. Heavy soils, in opposition to this minimum of preparation, will require to be well trenched, turning in at that operation considerable quantities of strawy stable manure, and road-scrapings, if obtainable; but in trenching, the lower spit need not to be brought to the surface, but merely turned over, and left alone. Light and poor soils will be greatly improved if clay be added to a plentiful supply of rich manure, deeply trenched in, and the whole trodden firmly before being planted.

Layered Plants.—See that these do not want for water, and any layering that is required to be done should be seen to without delay. Laxton's Noble has proved itself of use as an early "berry"—is of good size, if a little wanting in flavour; while Oxonian leaves nothing to be desired for late work. Remove some of the lower leaves, and all the runners, from plants which are cleared of their fruit, and keep down weeds; prick up slightly the surface of the soil between the rows, and mulch again, if necessary, to encourage a free growth. The nets and frame-work should be packed away when dry, and labelled as to size, &c. *H. Markham, Mereworth Castle, Kent.*

The Kitchen Garden.

Potatos.—Early Potatos, when the skins are set, may be lifted, and what is for seed should be thinly spread out to get well hardened. The remainder which are intended for use should be spread out thinly, and covered with some loose straw. If some of the latest sorts which have been kept from growing, and placed in boxes, and kept in a pit, new Potatos can be obtained during the early months of winter; Potato sets may also be planted in the open at this time, and if allowed to remain in the ground all the winter, some protection against frosts and rain being employed, the small Potatos formed may be dug up as they are required.

Globe Artichokes.—In order to have succulent heads of a large size, manure-water in considerable quantity should be afforded the plants in dry weather, and where the offsets are many, it is well to thin liberally, so that strong crowns and good heads may be had the following year.

Parsley.—A late sowing may be made on a south or west border, and if the winter is favourable, and wireworms few in numbers, the young plants will stand well, and prove very serviceable in spring and early summer in not being so liable to run to seed as early-sown plants. Where their supply is likely to be short, no time should be lost in thinning out and transplanting all available plants. In planting these, a distance of 12 to 14 inches is not too much space if the plants are to develop fully. Much of the loss of Parsley in winter is traceable to over-crowding in the seed-beds and lines. A number of roots may also be potted-up, or pricked out into boxes, and be removed to an unheated house during hard weather.

Seakale.—Cut off any flower-heads as soon as seen, and in the case of roots intended to be forced, the crowns reduced to one on weakly plants, and to two or three on strong ones. If the ground be light or poor, a slight dressing of nitrate of soda or some other manure may be applied, but caution is necessary, as an overdose will destroy the plants. [1 cwt. to the acre, or 11 oz. to one square rod of land, is strong enough. Ed.] *Wm. M. Baillie, Luton Hoo.*

REPORT ON THE CONDITION OF THE FRUIT CROPS.

[FROM OUR OWN CORRESPONDENTS, JULY, 1889.]

The words "average," "over," or "under," as the case may be, indicate the amount of the crop; and "good," "very good," or "bad," indicate the quality.

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SCOTLAND.										
ABERDEEN	Average	Under	Over	Average	Under	Under	Over	Over	.....	James Boddie, Slains Castle Gardens, Cruden
	Under; good	Under; good	Average; good	Under; good	.....	.....	Average; good	Average; good	.....	John Forrest, The Gardens, Haddo House
	Under	Average	Over	Under	.....	Under	Over	Average	Under	R. Farquhar, Fyvie Castle Gardens, Fyvie
	Average; good	Under; bad	Over; very good	Average; good	Over; very good	.....	Average; good	Over; very good	.....	Francis Duncan, Dunecht House
ARGYLL	Under	Under	Under	Average; good	.....	Under	Average	Average; good	.....	G. Taylor, Castle Gardens, Inverary
AYR	Under; good	Under; bad	Over; good	Over; good	.....	.....	Over; very good	Over; very good	.....	William Priest, Eglinton Gardens, Irvine
BANFF	Under; bad	Under	Average; good	Under; good	Failure	Under	Average; very good	Average; very good	.....	Jas. F. Smith, Cullen Gardens, Cullen
	Under; good	Under; good	Over; good	Average	Under	Average; very good	Abundant	Average; good	.....	John Webster, Gordon Castle, Fochabers
CAITHNESS	Under	Under; good	Under; good	Under; good	.....	Under	Under; good	Average; good	.....	John Sutherland, Langwell, Berriedale
CLACKMANNAN	Average; good	Average; good	Average	Over; good	Under	Under	Over; good	Over; good	Under	Thomas Ormiston, The Gardens, Alloa Park, Alloa
DUMBARTON	Over; good	Under; good	Average; good	Average; good	.....	.....	Over; good	Average	.....	James Mitchell, Camis Estean Gardens, Helensburgh
	Average; good	Under; bad	Average; good	Under; bad	.....	.....	Over; very good	Over; very good	.....	Robert Fleming, Garscube Gardens, Maryhill, Glasgow
DUMFRIES	Under	Average; good	Under	Average; good	.....	.....	Over; good	Under	Under	Alexander Henderson, Jardine Hall Gardens, Lockerbie
EAST LOTHIAN	Under	Under	Under	Over	Average	Under	Over	Over	.....	James Morrison, Archerfield Gardens, Drem
	Average; good	Under average; good	Average; good	Sweet under; Morellos average	Failure	Average; good	Average; good	Average; good	Average; good	L. Dow, The Gardens, Newbyth, Prestonkirk
	Under; good	Under; good	Under; good	Under	Under; good	Under; very good	Average; good	Over; very good	.....	R. P. Brotherston, Tyninghame, Prestonkirk
FIFE	Over	Average	Under	Over; good	Under	Average	Over; good	Over; good	.....	Wm. Lumley, Broomhall, Dumfermline
	Average	Under	Average	Under	Much under	Average	Over	Average	.....	Robert Gossip, Crawford Priory, Cupar
	Under	Under	Under	Average; very good;	.....	Average	Average; very good	Over; very good	.....	G. Ramsay, Fordell Gardens, Inverkeithing
FORFAR	Average	Under	Over	Average; good	Under; good	Thin crop	Very abundant	Average	.....	William McDowall, Brechin Castle Gardens, Brechin
	Average	Under; bad	Average	Average	.....	.....	Average; good	Average; good	.....	James Mitchell, Panmure Gardens, Carnoustie
KINCARDINE	Under	Under	Average	Under	.....	.....	Over	Over	.....	J. M. Gairns, Arbuthnott Gardens, Ferdoun
KINROSS	Under; good	Under; bad	Under	Under; good	.....	.....	Average; good	Average; good	.....	John Fortune, Blair Adam Gardens, Blair Adam
MIDLOTHIAN	Average; very good	Average; very good	Over average; very good	Average; good	Scarce; good	Over average; very fine	Over average; Raspberries under; very good	Average; very fine	Scarce	Malcolm Dunn, The Palace Gardens, Dalkeith
	Over; good	Average	Average	Average	.....	Over	Over; good	Over; good	.....	Charles Johnston, Dalhousie Castle Gardens, Lasswade
MORAYSHIRE	Average	Over; very good	Over; good	Under	Average; good	Over; good	Average, but small	Over; very good	.....	D. Cunningham, Darnaway Castle Gardens, Forres
NAIRN	Average	Under	Average	Under	Under	Under	Average	Average	.....	James Maitland, Cawdor Castle, Nairn
	Average	Average	Standards; good	Average	Under	Under	Average	Average; good	.....	James Manson, gr., Kilravoch Castle, Fort George
ORKNEY	Under	Average; good	.....	Over	Over	.....	Average	Under	.....	Thos. Macdonald, Balfour Castle Gardens, Kirkwall
PEEBLES	Average	.....	Under	Abundant; good	.....	.....	Abundant; good	Over; very good	.....	M. McIntyre, The Glen, Inverleithen
PERTH	Average; very good	Under; bad	Over; good	Under	Under; bad	Over; very good	Over; very good	Average; good	.....	George Goodfellow, Kinfauns Castle Gardens, Perth
	Under	Under	Average	Under	.....	Average	Average	Over	.....	John King, The Gardens, Blair Drummond
	Very good	Under	Under	Average	.....	.....	Over	Over	.....	George Croucher, The Gardens, Ochtertyre, Crieff
	Average; very good	Under; bad	Under; good	Average; good	.....	.....	Average; good	Under; not promising	.....	John Robb, Drummond Castle Gardens, Muthill
	Bad; Pippins good	Bad, excepting Jargonelle	Very good	Good	Under; good	Good; large	Gooseberries good; Currants bad	Very good	.....	P. W. Fairgrieve, Dunkeld House Gardens, Dunkeld
RENFREW	Under; bad	Under; bad	Under	Under	.....	.....	Average; good	Over; very good	.....	Thomas Lunt, Ardgowan, Greenock
STIRLING	Average; good	Under; bad	Average; good	Average; good	.....	Under	Over	Average; very good	.....	M. Temple, Carron House, Falkirk
	Under; bad	Under; bad	Under	Average; good quality	Under	Under	Average	Good; quality fine	.....	Maurice Fitzgerald, Dunmore Park, Larbert
SUTHERLAND	Average	Under	Under	Over; good	.....	.....	Under	Average	Average	D. Melville, Dunrobin Castle Gardens, Golspie
WIGTOWN	Average; very good	Under; good	Average; very good	Average; very good	.....	.....	Over; very good	Over; very good	.....	W. Cruden, Castle Kennedy Gardens, Stranraer
ENGLAND—NORTHERN COUNTIES.										
NORTHUMBERLAND	Under	Under	Average	Average	Under	Average	Average; good	Average; good	.....	George Harris, Castle Gardens, Alnwick
	Under	Under	Under	Average	Average	Average; good	Average; good	Average; very good	Under	David Inglis, Howick Hall, Lesbury
WESTMORELAND	Under	Under	Average	Morellos very good	.....	.....	Gooseberries very good	Good	.....	W. A. Miller, Underley, Kirkby Lonsdale
DURHAM	Very good	Average	Very good	Very good	.....	Good on heated walls	Very good	Very good	Bad	Richard Westcott, Raby Castle, Darlington
YORKS	Under average; good	Under; good	Under; good	Under; bad	Failure	Under; good	Average; good	Very good; average	.....	Thomas Jones, Ribston Gardens, Wetherby
	Under	Under	Over	Average	Under	Under	Under	Average	Under	Robert C. Kingston, Brantingham Thorpe, Brough, East York

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
NORTHERN COUNTIES.										
YORKS	Under	Under	Average	Average	Under	Under	Good	Good	.....	Joseph Shaw, Nunappleton Gardens, Bolton Percy
	Under; bad	Under; bad	Average	Under	Under; bad	Under	Average; good	Average; good	Under	W. Chuck, Broadsworth Hall, Doncaster
	Average	Average	Average	Under	Under	Under	Over	Over	.....	William Culverwell, Thorpe Perrow, Bedale
LANCASHIRE	Average	Under	Average	Morellos average	.....	.....	Over	Over	.....	W. B. Upjohn, Worsley Hall Gardens, Worsley, Manchester
	Average; good	Under; good	Over; good	Average; good	.....	.....	Average; good	Over; good	.....	Wm. P. Roberts, The Gardens, Cuerdon Hall, Preston
	Fair crop	Bad	Under	Morellos good	.....	.....	Average; good	Average	.....	H. Lindsey, Huntroyde Park, Padiham
	Under; good	Under; fair	Under; good	Average; fair	Under; good	.....	Over; good	Over; good	Under	J. Hathaway, Lathom House, Ormskirk
EASTERN COUNTIES.										
LINCOLN	Under; good	Under; good	Over	Average; good	.....	Average; good	Red Currants average; Black under; Raspberries over	Over; very good	Under	A. S. Elder, Highfield, Gainsborough
	Under	Under	Bad	Under	Bad	Average	Good	Average	Average	James Seth, Thurlby, Bourne
	Under; bad	Under; bad	Under; poor	Under; poor	Under	Under; good	Average; good	Over average; very good	Under	David Lumsden, The Gardens, Bloxholm Hall
	Average; good	Under; very small	Over; bad	Under	.....	Under; good	Average	Average; good	Under	J. Rowlands, Bardney Manor, Lincoln
	Under	Under	Average	Under	Average	Under	Over; good	Average; very good	Under	J. Spilsbury, Blankney Hall, Sleaford
	Under	Under	Under	Under	Much under	Under	Average	Over	Under	Thomas Vinden, Harlaxton Manor, Grantham
NORFOLK	Under	Under	Under	Under	Under	Failure	Under	Average	Failure	H. Batchelor, The Gardens, Catton Park, Norwich
	Under	Under	Very bad	Under	Under	Very bad	Under	Good	Under	O. Real, Shotesham Park, Norwich
	Under	Under	Under	Under	Under	Under	Average	Average	Under	F. Lee, Lynford Hall, Mundford
	Under	Average	Average	Average	Under	Under	Average; good	Over; very good	Under	Robert Punton, The Gardens, Wroxham Hall, Norwich
SUFFOLK	Under	Under	Under	Under	Average	Under	Average	Under	Under	John Wallis, Orwell Park, near Ipswich
	Under	Under	Under	Under	Under	Under	Very good	Very good	Under	Robert Squibbs, Ickworth, Bury St. Edmunds
	Under	Under	Under	Under	Average	Under	Average	Over	Under	D. T. Fish, Hardwicke, Bury St. Edmunds
	Under	Under	Under	Under	Under	Under	Average; good	Average; good	Under	J. Sheppard, Woolverstone Park, Ipswich
	Under; bad	Under; bad	Under; bad	Average; good	Average; good	Average; good	Over; good	Over; good	Under; good	H. Rogers, Rendlesham Gardens, Woodbridge
	Under; bad	Under; good	Under; good	Average; good	Average; good	Over; very good	Over; very good	Over; very good	Average	G. W. Eden, Henham Gardens, Wangford
ESSEX	Under; good	Under; almost a failure	Average; good on walls	Average; good	Under; bad	Under; very good	Over; very good	Over; very good	.....	Arthur Ocock, Havering Park, Romford
	Average	Average; good	Under	Over	Average	Under	Over	Average	Under	D. Donald, Knot's Green, Leyton
	Under	Under	Under	Under	Average	Under	Average; very good	Average; very good	.....	W. Bowman, Hylands, Chelmsford
	Under; good	Under; bad	Average; bad	Over; very good	Average; good	Under; good	Average; very good	Over; good	Under; good	Jas. Douglas, Great Gearies, Ilford
	Under; good	Under; bad	Average crop	Average; good	Under; good	Failure	Over; good	Over; good	Under	Chas. Butler, Parndon Hall Gardens, Harlow
	Over; very good	Average; good	Over; good	Average; good	Under	Under	Average; very good	Over; very good	Under	William Earley, Double House, near Ilford
	Under; good	Under; bad	Under; good	Under; very good; Morellos average	Under; good	Very few	Average; good	Over; very good	Under; good	James Vert, Audley End, Saffron Walden
MIDLAND COUNTIES.										
DERBY	Under	Under	Under	Under	.....	Under	Average; very good, except black Currants	Average; very good	Under	James Keetley, Darley Abbey
NOTTS	Average	Under	Average	Average	.....	.....	Over; very good	Over; very good	.....	John Horton, Welbeck Gardens, Worksop
	Under	Under	Average	Average; very good	Under	Under	Average; good	Average; very good	Under	S. A. Woods, Osberton Gardens, Worksop
	Under	Under	Good	Very good	.....	Under	Abundant and good	Very good	Under	A. Henderson, Thoresby, Ollerton, Newark
	Under	Under	Under	Average	Bad	Bad	Very good	Very good	.....	M. Gleeson, Clumber Park, Worksop
LEICESTERSHIRE	Under	Under; bad	Average; good	Average; good	.....	.....	Very good	Very good	.....	Alfred Hamshere, The Gardens, Beaumanor Park, Loughborough
	Under; bad	Under; bad	Standards under; wall-trained good	Under	Under	Under	Over	Over	Under	William Ingram, Belvoir Castle Gardens
	Under; bad	Under; bad	Under; bad	Under; good	Under	Under; bad	Over; good	Over; very good	.....	G. C. Maynard, Cole Orton Hall Gardens, Ashby-de-la-Zouch
RUTLAND	Under	Under; bad	Under	Under	Under	Under	Average; good	Average; good	.....	John Grey, Normanton, Stamford
	Under	Under	Average	Average; good	Average	Under	Average; good	Average; good	Under	H. Mason, The Gardens, Bisbrook Hall, Uppingham
WARWICK	Failure	Under; bad	Under	Under	.....	.....	Plentiful	Plentiful	Very thin	William Miller, Combe Abbey Gardens, Warwick
	Under	Under	Under	Under	Average	Under	Over; very good	Over; very good	Under	James Rodger, The Gardens, Charlecote Park, Warwick
	Under	Under	Very bad	.....	.....	Under	Very good	Very good	Under	John Bowler, Caldecote Gardens, Nuneaton
	Under	Under	Under	Under	Under	Under	Average; good	Average; good	.....	Thomas Beddard, Stoneleigh Abbey, Kenilworth
	Average	Average	Average	Under	Under	Under	Plentiful; good	Average	Average	Robert Greenfield, The Priory Gardens, Warwick
NORTHAMPTON	Under	Under	Average	Under	Under	Under	Average; good	Over; good	Under	James Trigger, Milton Gardens, Peterborough
	Under	Under	Average	Under	Average	Average	Average	Average	.....	John House, Fengate Nursery, Peterborough
	Average; very good	Under	Average	Average	.....	Under	Average	Under	.....	G. Goldsmith, Floore House, Weedon

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
MIDLAND COUNTIES.										
NORTHAMPTON	Bad	Bad	Under	Average	Average	Average	Very good	Good	Failure	Henry Birch, Castle Ashby Gardens, Northampton
	Under	Under	Good	Under	.....	.....	Good	Very good	Bad	W. S. Miller, Whittlebury, Towcester
	Under; good	Under; good	Average; good	Under; bad	Under; good	.....	Over; very good	Over; very good	Under; good	H. Turner, Fineshade Abbey Gardens, Stamford
BEDS.....	Under; good	Under; bad	Average; good	Under; good	Under; good	Much under; good	Average; good	Average; good	Much under	Geo. Ford, Wrest Park, Amptill
	Under	Under	Average; good	Average	Under	.....	Over	Over; very good	.....	Wm. M. Baillie, Luton Hoo Park, Luton
	Under	Under	Under	Under	Under	Under	Raspberries average; Currants under	Over average; good	Under	A. McKay, Woburn Abbey, Woburn
	Under	Under	Under; bad	Under	Average	Under	Over; good	Over; good	Under	Charles Turner, Cranfield Court, Newport Pagnell
OXFORD	Under	Under	Average	Average	Under	Under	Average	Over	Under	Henry Downing, Heythrop Park, Chipping Norton
	Under	Under; walls, average	Under; bad	Under; bad	Under	Under; bad	Over; very good	Over; very good	Under; bad	George Stanton, Park Place, Henley-on-Thames
BUCKS	Under	Under	Average	Under	Under	Under	Over	Over	Under	Geo. Thos. Miles, Wycombe Abbey Gardens, High Wycombe
	Average; good	Under	Average; good	Under	Under	Under	Over; good	Over; extra good	Under	J. Smith, Mentmore, Leighton Buzzard
	Average	Under	Under	Under	Average	Below average; bad	Currants, Gooseberries, and Raspberries, over; very good	Over; very good	Under; bad	James Thomas, Shardeloes Gardens, Amersham
	Failure	Under	Under	Under; good	Average; good	Under	Average; good	Average; very good	Under	Chas. Herrin, Dropmore, Maidenhead
	Bad	Bad	Under	Average	Under	Under	Very good	Very good	Bad	W. Waters, Bulstrode Gardens, Gerrard's Cross
	Under; bad	Under; good	Average; good	Under; good	.....	Under	Over; good	Over; very good	Under	Jas. Bone, Latimer Gardens, Chesham
HERTFORD.....	Under	Under	Under	Average	Average	Under; good	Gooseberries, Currants, and Raspberries, over; good	Average; good	Under	Richard Ruffet, Panshanger, Hertford
	Under	Under	Average	Average	.....	.....	Over	Over	.....	Thos. Hedley, The Gardens, Putteridge Park, Luton
	Failure	Average on walls	Under	Under	Average	.....	Good	Very abundant; good	Bad	J. C. Mundell, Moor Park Gardens, Rickmansworth
	Average; good	Average; good	Over; good	Under; good	.....	Under; good	Average; good	Over; good	Under; bad	J. Thompson, Gorhambury Gardens, St. Albans
	Under	Under	Average; good	Under	Under	Under	Over; very good	Over; very good	.....	J. Kipling, Knebworth, Stevenage
WESTERN COUNTIES.										
GLOUCESTER	Under; bad	Under; bad	Average; good	Under; good	Under	Under; good	Average; very good	Over; very good	Under	William Nash, Badminton Gardens, Chippenham
	Under; bad	Average; good	Over; good	Average; good	Over; good	Average; good	Average; good	Average; good	Under; bad	Alexander Scott, The Gardens, Sherborne House, Northleach
	Under	Under	Under	Average	Average; good	Average	Average; good	Average; very good	Under	John Sowray, Highnam Court, near Gloucester
	Under	Under	Under	Average; good	Average	Under	Average; good	Over; very good	.....	W. R. Greenway, Fretherne Court Gardens, Stonehouse
	Bad	Under	Good	Good	Average	Under	Good	Very good	Bad	Arthur Chapman, Weston Birt Gardens, Tetbury
MONMOUTH	Under	Under; good	Average; good	Under; good	.....	Under; good	Over; very good	Over; very good	Greatly under	Thomas Coomber, The Gardens, The Hendre, Monmouth
HEREFORD	Under	Under	Under	Average	Average	Under	Over; good	Average; good	Under	William Coleman, Eastnor Castle, Ledbury
	Under	Under	Under	Average	Under	Under	Under	Over; very good	Under	Richard Thomas, The Gardens, Downton Castle, Ludlow
	Under; bad	Under; bad	Under; bad	Under	Under	Under	Over; very good	Over; good	Under	Kenneth McKenzie, Allensmore Court, Fram Green
	Under; bad	Under; bad	Under; good	Morellos over; sweet under; good	Under	Average; good	Over; good	Over; good	Very few	A. Ward, Stoke Edith Gardens, Hereford
WORCESTER.....	Under; bad	Under; good	Average; bad	Under; good	Under; good	Average; good	Over; very good	Over; very good	Under; bad	William Crump, Madresfield Court, Malvern
	Much under; bad	Under; good	Good	Much under; bad	Under; good	Under; good	Good	Over; good	Under; bad	John Austen, Witley Court, Stourport
	Under	Under	Under	Under	Average	Average	Average	Average	Under	R. Robbins, Rhydd Court Gardens, Hanley Castle
	Under	Under	Under	Under	Average	Under	Average; good	Average; good	Average	James Aston, Cotheridge Court, Worcester
	Average; good	Average; good	Under; good	Over; very good	Under; bad	Over; very good	Over; very good	Under; good	Under; bad	Walter Childe, Croome Court, Severn Stoke, Worcester
SHROPSHIRE	Under; good	Over; good	Average; good	Under	Under	Under	Over; good	Over; very good	Failure	A. S. Kemp, Haughton Hall, Shifnal
	Under; good	Under; good	Under; good	Under; good	Average; good	Under; good	Under; good	Average; very good	.....	James Louden, The Quinta, Chirk
	Under; good	Average; good	Under; good	Average; good	Failure	Failure	Over; very good	Over; very good	Over; very good	Richard Milner, Sundorne Castle Gardens, Shrewsbury
STAFFORD	Under	Average	Average on walls	Good	Average	Under	Very good	Very good	Scarce	——, Stourbridge
	Under	Average	Under	Good	.....	.....	Average	Over average; good	.....	James Campbell, Biddulph Grange Gardens, Congleton
	Under	Under	Under	Average	Average	Under	Good	Much over; good	Under	H. G. Wilks, Sandon Hall Gardens, Stone
	Under; bad	Under	Under	Under; bad	.....	Under; bad	Over; good	Over; very good	Under; bad	W. Ward, Little Aston, Sutton Coldfield
	Average; very good	Much under; good	Under; good	Average	.....	Much under; good	Average; very good	Over; very good	.....	John Wallis, Keele Gardens, Newcastle
CHESHIRE.....	Average	Under	Under	Under	.....	.....	Under	Under; good	.....	Robert Mackellar, Abney Hall, Cheadle
	Under; good	Under	Under	Under; bad	Under; bad	Under; bad	Over; very good	Over; very good	.....	John V. Smith, Arley Hall Gardens, Northwich
SOUTHERN COUNTIES.										
MIDDLESEX	Average; good	Under; good	Average; good	Over; good—especially Morellos	Under; bad	Over; on south walls good	Average; very good	Abundant; very good	Under	Geo. Wythes, Syon House, Brentford

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
SOUTHERN COUNTIES.										
MIDDLESEX	Average; good	Under	Under	Under	.....	.....	Over	Average	.....	A. F. Barron, Royal Horticultural Society's Gardens, Chiswick
	Average	Under average	Average	Average	Under	Bad	Average; good	Average; good	Under	William Bates, Poulett Lodge Gardens, Twickenham
	Under	Average; good	Under	Average	Average	Average	Average; good	Over; very good	.....	John W. Odell, The Grove, Stanmore
SURREY	Under; good	Under; good	Under	Average; good	.....	.....	Over; good	Over; good	.....	Alex. Dean, Bedfont
	Failure	Failure	Under	Under	Average	Under; bad	Over; very good	Over; very good	Average	A. Evans, Lythe Hill, Haslemere
	Very scarce	Under; good	Under; good	Average; good	Under; good	Under; good	Average; good	Over; very good	Under	J. Burnett, The Deepdene Gardens, Dorking
	Under; good	Under; very good	Average; very good	Average; good	Average; good	Under; good	Over; very good	Over; very good	Under; good	John Tanner, Tandridge Court, Godstone
	Under	Under; bad	Average; good	Under; good	.....	Average; good	Over; very good	Average; very good	Under; bad	Jas. Gold, High Ashurst Gardens, Englefield Green
	Average; good	Average; good	Under	Average; good	Under; bad	Under	Average	Over; very good	Under	W. Swan, Castle Hill Gardens, Englefield Green
KENT	Average; good	Under	Under; bad	Average; good	Good	Bad	Good	Good	Bad	Fredk. Moore, Blendon Hall, Bexley
	Under; bad	Under; bad	Average; good	Under; good	Average; good	Average; good	Average; good	Over; very good	Under; bad	William Craik, Gardens, Hothfield Place, Ashford
	Under; bad	Under; good	Average; good	Morello, average; others under	Under; good	Average; good	Average; good; Raspberries over	Average; good	Under	G. A. Don, Bedgebury Park, Hawkhurst
	Under; good	Under; good	Under; good	Under; good	Under; bad	Under	Average; good	Over; very good	Under	C. Sutton, Chevening Gardens, Sevenoaks
SUSSEX	Average; good	Under; good	Average; good	Average; good	Average	.....	Over; very good	Over; excellent	Under	Joseph Rust, Eridge Castle, Tunbridge Wells
	Under	Under	Under	Under	Under	Under	Average	Over	Under	Alexander Reid, Possingworth, Cross-in-Hand
	Under	Scarce	Very good	Abundance	Very good	Half crop	Abundant	Very good	Scarce	Fruit-grower, Uckfield
	Under	Under	Average	Under	Average	Average	Average; Currants middling	Average	.....	Fredk. Geeson, Cowdray Park, Gardens, Midhurst
	Under; good	Under; good	Average; good	Under; good	Average; good	Bad	Over	Over	Bad	Sidney Ford, Leonardslee, Horsham
	Under	Under	Under	Under	Average	Average	Average	Average	Much under	F. Rutland, Goodwood, Chichester
	Average; very good	Average; good	Under; good	Morellos good; others failure	Over; very good	Under; bad	Over; very good	Over; very good	Under; good	H. R. Holmes, Ashburnham Gardens, Battle
HANTS	Over; good	Average; very good	Under; bad	Average; very good	.....	.....	Over; good	Much over; good	.....	T. D. Myles, The Gardens, Appley Towers, Ryde, I.W.
	.....	Under; bad	Under; good	Under; good	Average; good	Under; good	Average; good	Over; very good	Under	W. Wildsmith, Heckfield Gardens, Winchfield
	Under	Under; bad	Under; good	Average; good	Under	Failure	Over; very good	Over; very good	Failure	Edwin Molyneux, Swanmore Park Gardens, Bishop's Waltham
	Under	Under	Average; good	Under; bad	Average; good	Under	Over; good	Over; good	.....	Wm. Smythe, Basing Park, Alton
	Under	Under	Under	Under	.....	.....	Abundant	Good and fine	Bad	Philip Edwards, Fowley Gardens, Liphook
BERKS	Average; very good	Under	Average	Over; good	Average	Under	Average; very clean	Very abundant and good	Under	T. Jones, Royal Gardens Windsor
	Under; bad	Average	Average	Average	Under	.....	Average	Average; good	Under	James Tegg, Bearwood, Wokingham
	Under; good	Under	Average on walls	Over; good	.....	Under; good	Over; good	Over; very good	.....	J. H. Rose, Lockinge Gardens, Wantage
	Very under	Under	Under	Average	Under	Under	Over	Over	Under	Robt. Fenn, Sulhamstead Abbots, near Reading
WILTS	Under	Under	Under	Under	.....	Under	Average	Over	Under	Thomas King, The Gardens, Devizes Castle
	Under	Under	Under, except Greengages	Average	Over; good	Average	Over	Average; good	Average	H. W. Ward, Longford Castle Gardens, Salisbury
	Average; good	Under	Average	Average	Average	Average	Over; good	Over; good	Under	Charles Warden, Clarendon Park Gardens, Salisbury
	Very few	Under	Over	Under	Average	Average	Over	Over	.....	J. Horsefield, Heytesbury
SOUTH-WESTERN COUNTIES.										
SOMERSET	Under	Under	Average	Average	Under	Average	Average; very good	Average; good	Under	Wm. Hallett, Cossington House Farm, Bridgewater
	Under	Under	Average	Average; good	Average	Average; good	Average; very good	Average; very good	Under	W. Iggulden, Marston House, Frome
DORSET	Under	Under	Average	Average	Under	Under	Average; good	Average; very fine	Under	D. Williams, The Gardens, Canford Manor, Wimborne
	Under	Average	Average	Under	Average	Average	Over; very good	Over; very good	Under	William P. Leach, Bryanston Gardens, Blandford
DEVON	Average	Under	Average; bad	Over; good	Average; good	Good	Average; fair	Over; very good	Average; good	James Enstone, Wear, near Exeter
	Average; bad	Under; good	Over; blighted	Average; good	.....	.....	Over; good	Over; good	Under	G. J. Barnes, The Gardens, Stoodleigh Court, Tiverton
	Average; good	Under	Average; very good	Over; very good	Under	Under	Average; very good	Average; good	.....	George Baker, Membland, Plymouth
CORNWALL	Average; good	Under; good	Average; good	Under	Under	Average; good	Over; good	Over; good	Under	James Murton, Pencalenick, Truro
	Under	Under	Under	.....	Average	.....	Over	Over	.....	A. Mitchell, Tehidy Park, Camborne
	Average	Under	Under	Average	Average	.....	Over; good	Over; good	Under	George Knox, Port Eliot, St. Germans
	Average; good	Average; good	Average; good	Over; very good	Under; late	.....	Abundant; very good	Abundant; very good	Average	Chas. Lee, Boconnoc, Lostwithiel
WALES.										
CARMARTHENSHIRE	Average	Average	Under	Average	Under	Under	Average	Average; good	Under	Lewis Bowen, Edwinsford, Llandilo
CARNARVON	Under	Under	Under	Under	Under	Under	Average	Average	.....	Allan Calder, Vaynol Park Garden, Bangor
DENBIGH	Under	Under	Average	Morellos under; sweet average	.....	Failure	Over	Over	Failure	P. Middleton, The Gardens, Wynnstay, Ruabon, N.W.
GLAMORGAN	Under	Under	Good	Good	Good	Under	Very good	Over; very good	.....	J. Muir, Margam Park, Port Talbot
MERIONETH	Average; good	Under	Over; very good	Average	.....	Under	Under	Over; very good	Under	J. Bennett, Rhug, Corwen
PEMBROKE	Average; good	Under	Under	Average	Bad	.....	Good	Good	Average	Geo. Griffin, Slebeck Park, Haverfordwest

CONDITION OF THE FRUIT CROPS—(*Continued*).

COUNTY.	APPLES.	PEARS.	PLUMS.	CHERRIES.	PEACHES AND NECTARINES.	APRICOTS.	SMALL FRUITS.	STRAWBERRIES.	NUTS.	NAME AND ADDRESS.
IRELAND										
ANTRIM	Under; bad	Under; bad	Under; bad	Average; good	.....	.....	Average; very good	Over; good	.....	Geo. Porteous, Garron Tower, Belfast
ARMAGH	Average	Under	Average	Average	Under	Under	Average; good	Average; good	Average	Thomas Sheasby, Castle Dillon
CLARE	Under	Average	Over	Over; very good	Under	Under	Over; very good	Over; very good	Average	W. Rutherford, Dromoland Gardens, Newmarket-on-Fergus
CORK	Under	Average	Average	Very good	Average	Average	Very abundant	Very abundant	.....	W. Baylor Hartland, Blackrock
DOWN	Under	Under	Under	Average	.....	Under	Average	Average; good	.....	Jas. Taylor, Mountstewart, Newtownards
DUBLIN	Under	Under	Good	Under	.....	Very few	Heavy crop	Under	.....	G Smith, Viceregal Gardens
	Good	Good	Bad	Good	Bad	Good	Very good	Very good	Very good	F. W. Burbidge, Trinity College Gardens
WESTMEATH	Bad	Bad	Bad	Under	Under	Under	Very good	Average	Under	J. Igoe, Garden Vale, Athlone
KILKENNY	Under	Much under	Average	Average; good	.....	.....	Abundant; good	Average; good	Average	William Gray, Woodstock, Inistioge
CHANNEL ISLANDS.										
JERSEY	Under; good	Under; good	Over; good	Average; good	Average; very good	Under	Over; very good	Over; very good	.....	Chas. B. Saunders, St. Saviour's
GUERNSEY	Under; good	Under; good	Average	Average	Average	Average	Average; very good	Rather under; very good	.....	C. Smith & Son, Caledonia Nursery, St. Helier's
ISLES OF SCILLY	Average	Average	Average	.....	.....	.....	Average	Average	.....	Geo. D. Vallance, Tresco Abbey Gardens

UNCONSCIOUS INFLUENCE OF HUMAN AGENCY ON THE FLORA OF SCOTLAND.

At a meeting of the Natural History Society of Aberdeen in the spring of this year, Professor W. H. Trail discussed the subject of "Man's Unintentional Agency in the Distribution of Plants," in the course of which he described the effects of man's action on the floras of North America, South Africa, St. Helena, and Scotland. Coming to speak of Scotland, the Professor said:—

It is very noteworthy how few immigrants have been able to establish themselves in Scotland (within this century), with a fair prospect of becoming permanent residents. I have published (*Scot. Nat.*, 1884, pp. 243—58) a list of introduced plants and casuals observed in north-east Scotland, in which are enumerated all the species that I had myself observed, and all of which I could get authentic information as having been found in this district. All kinds of which even one example had been found growing, where it had not been intentionally planted, were included, without regard to their mode of immigration, whether as escaped garden plants, or among rubbish thrown into sandpits, or in ballast, or introduced with imports of commerce; and it was thus exhaustive as far as I could make it so. Many of the plants named in it are among the species that have spread most rapidly and widely in North America; yet with us they have been unable to secure a footing, and have usually died out in a year or two. There are in the list 140 species that have either died out at once, or lingered on for a few years, restricted to a few yards of ground.

The few that can be said to have become really naturalised within this century in north-east Scotland are Trifolium hybridum and T. agrarium, both along the borders of fields, into which they have been introduced in seed, as fodder plants (probably both would disappear were the cultivated ground allowed to relapse into its former condition); Lupinus perennis, very abundant on beds of shingle along the course of the Dee, and also along other Scotch rivers; Sedum Telephium and S. reflexum, here and there along roadsides; Linaria vulgaris, like the Sedums; Mimulus luteus, along the banks of the Don and other rivers; Veronica Buxbaumii, in gardens and fields, as a weed of cultivated ground; Elodea canadensis in streams and pools, and two or three grasses, *e.g.*, Lolium italicum, in fields into which they have been introduced as fodder plants, and from which they have spread to the banks of adjoining streams. Our flora thus seems to be a comparatively stable one, and well able to resist the aggressions of immigrants from other parts of Europe, or from more distant lands. But if we look to the distribution in Scotland of many of our lowland plants, we are constrained to believe that they owe their introduction into Scotland to man, though admitted into British floras without indication that they are not among the indigenous species of the country. It must be borne in mind, however, that we have no reason to believe that any species of Phanerogams, and few well-marked sub-species or varieties, have originated in Britain, and that the only questions with regard to the origin of our flora relate to the countries from which the plants came here, and the time and agency of immigration; yet in many respects human agency is so distinct in its results from all others, that it is convenient to regard it as different in kind from them, and to discuss it separately.

Turning, then, to the distribution of our so-called native plants, we find that many of them are restricted to the neighbourhood of houses or of ruins, others to the waysides or to the vicinity of gardens, from which it is clear that they originally escaped. Such plants as the Mallows, Hawthorn, Goutweed, Cicely, Elder, Chamomile, Tansy, Leopard's Bane, Toadflaxes, and Good King Henry, are evidently enough escapes from the gardens of old days when they were cultivated for beauty or medicinal virtues, real or supposed. There can be as little doubt, I think, that such species as the Nettles, Goosefoots, and such-like, have been unintentionally introduced by man.

As regards the weeds of cultivated soil, not only do they owe their introduction into the country to man, but were cultivation of the soil to cease, they would almost to a certainty rapidly disappear from the flora. But the adventitious flora of North America teaches us that plants that we could scarcely have supposed likely to be introduced by man are among the most widely spread by him on that continent, *e.g.*, Ranunculus acris; and it is probable that we cannot now realise how large a part human interference has played in the past in moulding the flora of our Scottish lowlands. On the other hand, there is little trace that it has altered the flora of the highlands in any marked degree, at least in the alpine tracts, except that within this century the relics of the Arctic-alpine flora have become rarer—or even very rare—through the indiscretion of botanists, or rather of plant collectors. It cannot be said that any new alpines have been introduced into our flora by man's unintentional agency.

The flora of the lower hills also, where these were not originally forest-clad, has been little modified, save here and there, where moors have been drained, or where slight changes may have been brought about by continued pasturing of sheep or cattle upon them. The primeval forest exists in only a few highland valleys now; in it also man has effected little change on the native flora, and along the dunes that skirt many parts of our coast the effects of man's hand are scarcely to be traced.

But in the lowlands, wherever a permanent habitation could be made, and the soil was fit for cultivation, or could be fitted for it by human industry, and also where the primeval forest once extended, man has greatly modified the original flora of Scotland. Let us learn from North America what had gone on in Scotland in ancient times. We are told by Roman authors that the country was covered with dense forests or impenetrable marshes, and that it was inhabited by a race of savages, whose mode of life must have been like that of the Indians of North America in many respects. The indigenous flora of these marshes and forests must have been much like what we still find in such localities in Scotland; composed of a comparatively small number of species than the prevalent types of the herbaceous vegetation of the lowlands, though now restricted to a few localities, and interesting to us from their rarity. The species then growing on the exposed moors and in the mountain corries, must have been almost the same as still grow in these habitats, though, probably, the alpines were more abundant. Gradually the forests were cut down, the motive being, it would seem, more often to drive out troublesome freebooters and wild beasts of prey than to make use of the timber, or to clear the soil for cultivation. As the forests were destroyed, the plants that grew in them could no longer thrive without the shelter. The marshes also dried up as the rainfall diminished; and as years passed on drainage converted many of them into meadows or arable land.

New races of men immigrated from the continent of Europe, and from England, and brought with them their domestic animals, cultivated plants, and new methods of cultivation. Frequent intercourse went on with other countries, and imports from other lands brought with them the seeds of plants previously unknown in Scotland. These occupied the habitats vacated by their former tenants, or, were able to oust the native plants when placed in circumstances so unfavourable to their vigorous growth. And thus went on a change that we know must have profoundly modified the indigenous flora of Scotland. But that must always remain, to a considerable extent, matter of conjecture, for its greater features were accomplished before botanists began to seek out the causes of things.

Changes are still going on, but they are now slow, and we must look to the colonies to gain some adequate conception of what must have been the course of events in the past centuries, in our own land, and of how far man has, unconsciously, changed the flora of Scotland. While we cannot but regret the loss of certain species, we must recognise that to human agency we owe much of the variety, and to some extent the beauty also, of what we are apt to regard as the indigenous flora of our native land.

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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

SATURDAY, AUG. 3 — Liverpool Horticultural Association (and on 5th). Southampton (and on 5th).

SALES.

TUESDAY, JULY 30 — Stove and Greenhouse Plants at North Dulwich, by Protheroe & Morris.

WEDNESDAY, JULY 31 — Freehold Nursery at Acton, W., at the Auction Mart, London, by Protheroe & Morris.

THURSDAY, AUG. 1 — Collection of Orchids, formed by T. M. Shuttleworth, Esq., at Stevens' Rooms.

FRIDAY, AUG. 2 — Imported and Flowering Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—63°.3.

The Gardeners Orphan Fund.

THE gardeners of this country are to be congratulated on their success in launching, and now we may say, in establishing this Fund. Initiated by gardeners, taken up warmly by them, continuously supported by them, its affairs managed almost, if not quite exclusively, by them, it bids fair to be the means of alleviating a large amount of distress and misery. What better means of celebrating the QUEEN'S Jubilee, and of giving practical expression of our gratitude for the settled government we live under, could have been devised than the establishment of this fund? The mind of the gardener was impressed by the fact of the Jubilee, and all that it implied; his heart was touched by the sufferings and needs of the helpless and innocent. The result we see before us. Moreover, it is a result which must, from the nature of the case, expand and grow. It will be the duty of the management to avoid all checks to expansion, and to direct its growth in the most efficient and direct manner. At the election of candidates on Friday, July 19, six children were elected, leaving eight disappointed candidates. The first business of the Society is to secure a sufficient reserve fund to meet possible contingencies, the next to enlarge the annual income, so as to avoid, as far as possible, these painful disappointments.

At the dinner, held after the election, Sir JULIAN GOLDSMID presided, followed, after a time, by Mr. SHIRLEY HIBBERD. Nearly 200 gardeners were present, and the greatest goodwill prevailed. With a view of lessening the disappointments referred to, Mr. HARRY VEITCH, following the lead of Mr. SHERWOOD last year, promised a donation of a hundred guineas, on condition that a similar amount was contributed by the gardeners within the next three months. Such a donation will nearly suffice to ensure the election of one child to the benefits of the institution, and there were indications in the room that night that Mr. VEITCH's generosity will be put to the test in the way he intended it to be, and that not one additional orphan only will be helped, but more than one. We need hardly say we shall be pleased to receive subscriptions, however small, to this end. A further note will be found in another column.

Trees and Vestries.

AMONG the many duties which devolve upon the London County Council, that of attending to the trees which have been planted in many of our public thoroughfares will, it may be hoped, receive at an early date the attention it deserves. At the present time, and while some of the London trees, notably those on the Embankment, are an ornament to the metropolis, others are in a far from satisfactory state. Those in Shaftesbury Avenue call for prompt attention: many are dead, some are dying, and others require attention in various ways.

In some parishes, where the work of attending to the trees devolves upon the local vestry, matters are by no means properly looked after. This was made manifest at last week's open meeting of the vestry of St. George's, Southwark; and some account of arboricultural matters in that parish may be of interest.

When the trees were first planted we do not know; at the present time over 400 are under the care of the parish. Mr. BRITTEN, who is a member of the Vestry, naturally takes a special interest in the matter, and about two years ago called the attention of the officials to the highly unsatisfactory state of many of the trees. Those who know the difficulty of producing an impression upon vestries—it is not only "great bodies" that "move slowly"—will not be surprised to learn that some time elapsed before any efficient steps were taken to remedy the state of things. About a year ago a Special Committee was appointed, but from one cause or another nothing much came of it until some two or three months since, when, at the instance of Mr. BRITTEN, Mr. GEORGE NICHOLSON was informally invited to visit the trees, and to make such suggestions for their improvement as seemed to him desirable.

After his visit, a Report was drawn up by the Committee, embodying the principal suggestions made, and presented to the Vestry on Tuesday week last. It is needless to say that the suggestions were of the most practical kind, and, although involving some present outlay, would, in the long run, prove economical, as the new trees planted in accordance with them would stand a better chance of life than those which now exist.

The Report was about to be accepted, when a vestryman took exception to a criticism passed upon the former mode of planting, and proceeded to deliver his views as to what was needed under the circumstances. It appeared that his late father had taken much interest in the question, and had, indeed, been instrumental in inducing the Vestry, in the first instance, to take up the planting of trees in the streets; and he regarded any criticism on the past as in some way reflecting on the memory of his father.

He then proceeded to point out at much length that the trees did not require the breathing and root-space which the Committee had recommended, and which is carried out in most other places; and demonstrated, to his own satisfaction at any rate, that the heavy rainfall of last year was mainly responsible for the existing state of the trees.

Mr. BRITTEN, as one concerned in the Report, disclaimed any intention of reflecting on the memory of the deceased gentleman, of whose connection with the trees he had not been aware, and pointed out that, as he had called attention to the unsatisfactory state of the trees in 1887, the bad weather of 1888 could hardly be held responsible for it. But the hour was late, and the Report was referred back to the Committee—not, however, before an enterprising vestryman had suggested that the tree-guards might profitably be let out for advertising purposes! The pencil of Mr. W. G. SMITH might find ample scope for its characteristic humour in a sketch of the possibilities opened up by this suggestion.

Any one who will take the trouble to walk down the Blackfriars, St. George's, or Borough Roads, will be able to form an opinion as to how far the St. George's Vestry has shown itself capable of attending to matters arboricultural. More than sixty trees out of the 400 odd are dead, and have long been so; the death of others can only be a matter of a year or two; others are gnarled and scarred from neglected wounds, and are misshapen and crooked. In some cases, in defiance of the contract, Poplars have been planted instead of Planes, and the Planes are of various kinds, many of them bad. This is no fault of the present contractor, who has but lately undertaken the work; but it reflects discredit upon the Vestry, who, in spite of remonstrance, did not insist on the previous contractor carrying out his obligations.

It is to be regretted that Mr. BRITTEN—whose position should entitle his opinion to some weight in matters of this kind, backed, as it was, by the high authority of Mr. NICHOLSON—should have failed in his endeavour to secure for the ratepayers of a crowded part of South London the benefit which those who first planted the trees in St. George's parish designed for them. We commend the consideration of the matter to the County Council, and trust that some means will be found for placing the trees of our streets under the superintendence of some competent authority.

ORCHID NOMENCLATURE.—A meeting of Orchid growers and others was held in the Lindley Library on Wednesday last to discuss this subject. Sir TREVOR LAWRENCE, President of the Society, and afterwards Mr. Morris, presided, and among those present were the Treasurer and the Secretary of the Society, General Berkeley, Mr. Baker, Mr. H. Veitch, Mr. H. Williams, Mr. O'Brien, Mr. Pollett, Mr. Rolfe, Mr. Courtauld, Mr. Smee, Mr. Tautz, and many others. After some discussion, the following resolution, agreed to in substance at a meeting of the Orchid Committee on the previous day, was proposed by Dr. Masters, and seconded by Mr. Courtauld, was unanimously agreed to:—"That the Council of the Royal Horticultural Society be requested to nominate a committee in which botanists, importers of new plants, raisers, and growers, shall be represented, to draw up a code of regulations applicable to the nomenclature of plants introduced into and cultivated in gardens, such code, when duly approved, to be considered binding on the officials and committees of the Society, and recommended for universal adoption." A committee was then appointed.

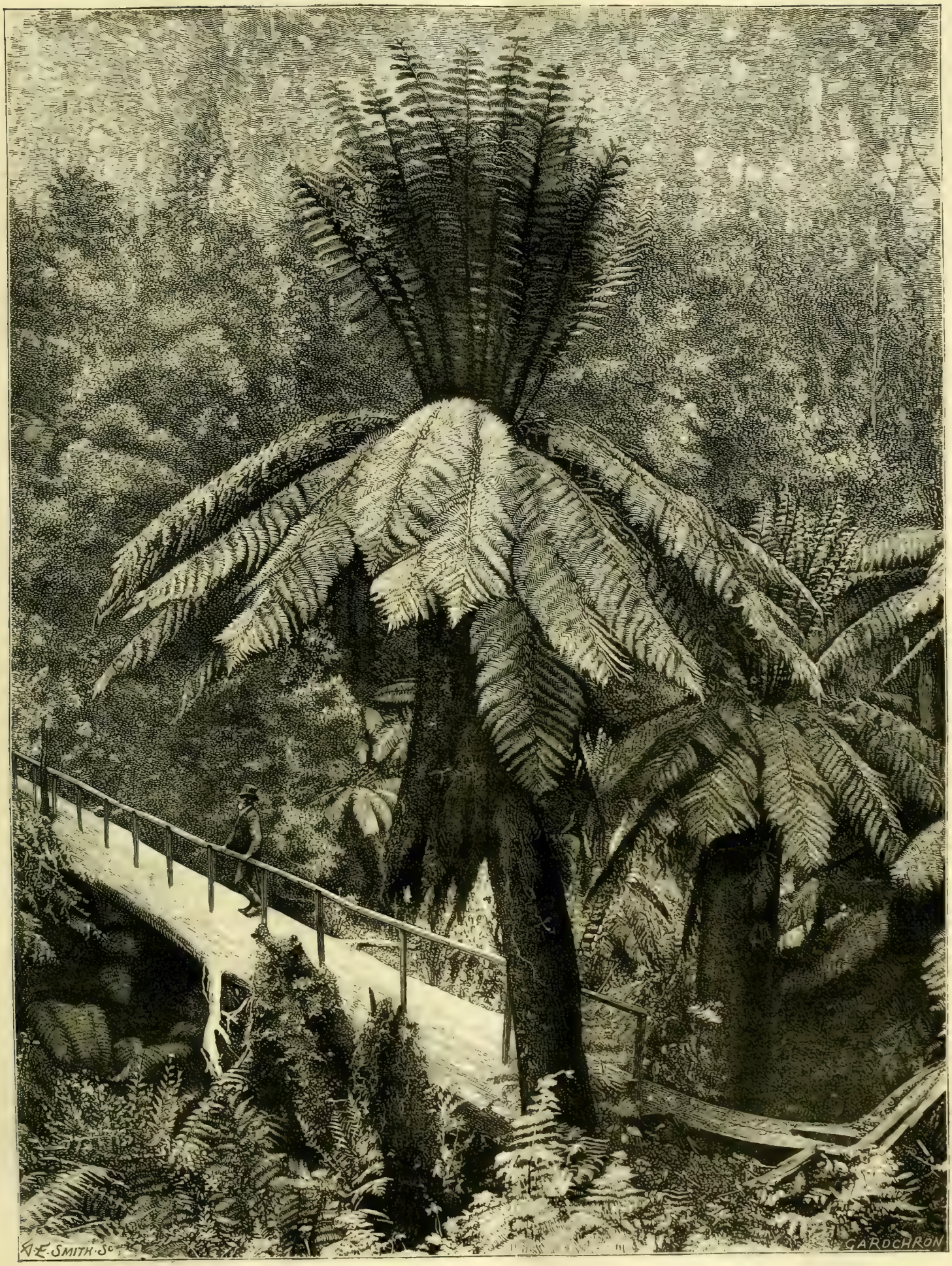


Fig. 16.—A tree bridge in Gippsland, New South Wales. (see p. 107.)

It was further resolved that the Director of the Royal Gardens, Kew, and the Keeper of the Botanical Department of the British Museum, be severally requested to nominate a member of their staff to act on the committee.

The Fruit Crops.—In another place will be found the tabulated reports on the condition of the fruit crops for this season supplied by our correspondents throughout the country. Generally taken, the crops are below the average, with the exception of small fruits and Strawberries, which, with only very few exceptions, are very satisfactory. Those counties grouped under the headings eastern and midland appear to be the worst off. The Scotch returns show some variety, and point to fair crops on the whole. Apples and Pears are of bad quality, except in the southern counties. In Middlesex, Surrey, and Kent, Cherries are yielding fairly good crops, and the quality of that crop is returned as good in most cases. But taken as a whole, the fruit crop of 1889 will not be one to rejoice over.

The Scientific Committee.—An excellent illustration of the good work which may be, and is effected, by this body, was shown on Tuesday last, when the report on the "burrs" of Fir trees was presented. The specimens in question had been submitted for independent examination to two botanists and two entomologists, with the result of a substantial agreement of opinion that the growths in question were the result of a fungus, Æcidium elatinum, the same that produces the "witches' brooms," of the German forests. Such an origin had not before been suspected, and even now, it seems to us, to be doubtful whether some of those cases may not be due to other causes. The report of Professor Marshall Ward, Dr. Scott, Mr. McLachlan, and Mr. Michael, will be given, we presume, in full in an early number of the Society's *Journal*.

Nottinghamshire Horticultural and Botanical Society.—The members and friends of this Society, to the number of 250, visited Chatsworth House and grounds on the 18th inst. After a pleasant drive of about 4 miles from Rowsley, the party arrived at the house, which was inspected, a ramble through the pleasure gardens, with the magnificent conservatory, the cascade, waterfalls and fountains followed. The kitchen gardens and the glasshouses being also visited.

The Gardeners' Orphan Fund.—The annual meeting of the subscribers, election of children, and anniversary dinner, took place at the Cannon Street Hotel, E.C., on Friday the 19th inst., the former commencing at 2 p.m., after a meeting of the committee at noon; Mr. George Deal presiding, there being a very satisfactory attendance. The annual report alluded to the great success which has attended the establishment of the Fund; and to the thankfulness of the committee in having been able during the past year to dispense the means of support to a number of children, who, but for the assistance thus granted, would have suffered privations which it is felt that no orphan child of a British gardener should endure. It dwelt upon the generosity of Mr. N. N. Sherwood in placing the sum of £100 at the disposal of the committee, the deep obligation to the Duke of Bedford for the use of the Flower Market, Covent Garden, for holding the second floral *fête*; and to the Baroness Burdett Coutts, for opening it. Thanks were expressed to the Duke of Marlborough, for opening Blenheim Gardens, whereby the sum of £13 was raised for the Fund; and to several others who organised and carried to a successful issue entertainments in their several localities, by means of which substantial sums were raised. The help of the local secretaries was gratefully acknowledged; special mention being made of Mr. J. Hughes, of Birmingham, who, by means of distributing several collecting boxes over the town, had obtained a considerable amount in small sums. The services of the gardening press was duly acknowledged, also those of the auditors, and great satisfaction was expressed that the munificent gift of £500 by the Duke of Bedford had permitted an additional child, making six in all being placed on the funds at the election that day. The balance-sheet showed receipts for the year from all sources amounting to £1974 13*s.* 7*d.*, which, with a balance of £608 6*s.* 10*d.* brought over from last year, made a total of £2583 0*s.* 5*d.*; the expenditure, very nearly the same amount as the receipts, including the purchase of £1500 worth of Government stock, a balance being carried forward of £605 13*s.* 9*d.* The sum invested to date amounts to £2525 19*s.* 10*d.* The report and balance-sheet having been adopted, the Treasurer, auditors, and Secretary were elected, and Messrs. Cannell, Goldring, Head, Laing, Nicholson, Penny, Poupart, and Roberts were elected on the committee. The meeting was then adjourned to receive the report of the scrutineers, and, on re-assembling, it was announced that the voting had been as follows:—

	Votes.		Votes.
Bessie Taylor	237	Olive Chapelow	87
Arthur John Ireland ...	233	Bessie Stronach Deedman	73
Edmund Walker Mosedale	151	Henry Edmund Skelton	55
William Charles Allen...	133	Arthur Lacey	49
David George Guthrie ...	108	Mary Grieve	47
Harry Robinson Preston	103	Thomas Henderson ...	44
Robert James Todd ...	92	Frank Butcher	13

The Chairman declared that the election had fallen upon the first six candidates. Votes of thanks were passed to the treasurer, trustees, auditors, executive committee, scrutineers, and secretary, and the meeting closed with a hearty vote of thanks to the Chairman. The annual dinner took place at 5 p.m., Sir Julian Goldsmid, Bart., M.P., the President, in the chair, supported by a numerous company. The hall was handsomely decorated with majestic Palms, and contributions of fruit and flowers for the tables were received from several gardeners, which greatly enhanced the enjoyment of the evening. In proposing "Gardeners and Gardening," Mr. H. J. Veitch promised the generous donation of £100, provided a similar sum was raised by the supporters of the Society within the space of three months. The Chairman promised the sum of £25, and other promises were also made. Further donations are required in order to secure Mr. Veitch's generous offer. The proceedings throughout were characterised by much spirit, and the second annual dinner of the Gardener's Orphan Fund proved a distinct success.

A Meeting of the Floral Committee was held at the Society's Gardens, Chiswick, on July 18. Present: Mr. W. Marshall, in the chair; Messrs. Pilcher, Dean, Herbst, Leach, Hobb, Hibberd, Pollett, Wynne, Nicholson, Cannell, and Goldring. The committee inspected the collections of Ivies, Stocks, and hardy flowering annuals growing in the gardens, giving marks of merit to the most approved varieties. A full report of these trials will be published in the Society's *Journal*.

Timber, and some of its Diseases.—We hasten to announce the publication of this volume by Messrs. Macmillan & Co. When we say that it is written by Professor Marshall Ward, of the Cooper's Hill College, who has incorporated what has been written by Hartig, Sorauer, and others, we have said enough to commend the volume to the notice of all concerned. Later on it will be our duty to notice the book at greater length.

Kew "Bulletin."—The July number is taken up with a list of publications relating to the systematic, economic, and geographical botany of the possessions, dependencies and protectorates of the British Empire. The two first sections relating to elementary works of a general character, and to those relating to the flora of Great Britain, are so incomplete that they might well have been omitted. The other sections are very serviceable, and few people will find them more so than Editors. The general reader will experience some surprise at the great number of possessions of whose very existence and names he was unaware. Not so the naturalist, as this list shows. Some slight account is given of these detached fragments of the British Empire, with references to the principal works and memoirs dealing with their botany and products.

Cattleya Mossiæ.—At a recent meeting of the Orchidienne, the *Horticulture Internationale* Society showed sixty individual plants, all different one from the other. More than 500 flowers were open at one time. We hope that the Orchidienne will neither give nor sanction the application of sixty distinct names to these sixty varieties of Cattleya labiata Mossiæ; and further that, if any names be given for horticultural purposes only, such names should not be Latinised as if they were botanical varieties duly authenticated and registered, and capable of discrimination.

"Lindenia."—The following plants are figured in the last number:—

Cattleya Mossiæ var. Bousieana.—A fine mottled variety.

Cypripedium Elliottianum, described in these columns by Mr. O'Brien, 1888, iv., 501, t. 186.

Dendrobium densiflorum, t. 187.

Phaius grandiflorus, t. 188.

Messrs. Lee's Nursery.—At the nursery at Isleworth, where Mr. Webb presides over cultural affairs, and only deciduous trees and shrubs are grown, some beautiful effects are found in the long walk (200 yards), which are due to planting both sides with all, or nearly all, the known variegated forms of trees and shrubs suited to the climate of these islands. We believe there is nothing like it to be found elsewhere, and we hope to give the names, and some account of these and other trees and plants in this and the other nurseries of the firm at an early date.

"Names and Synonyms of British Plants."—Mr. G. E. Warburton has rendered a good service by publishing in a convenient form a complete alphabetical list of British flowering plants, showing the synonymy of each species, together with references to the nomenclature of the "London Catalogue," *English Botany*, the works of Babington, Bentham, and Hooker. As an index of plant names, and of the authorities using them, this will be found very useful. It is published by George Bell & Sons.

"Practical Poultry Breeder."—Many people would like to know "how to make poultry pay;" still more, perhaps, would like to know how to manage fowls for amusement or domestic purposes. Such persons may be glad to hear of a little book under the above title, written by William Cook, an expert in poultry-raising, and to be had of E. W. Allen, Ave Maria Lane, London, E.C. It is illustrated by several woodcuts, showing the several breeds.

Chiswick Scientific and Literary Society.—With the permission of the Council of the Royal Horticultural Society, this Society again held its annual garden party in the Chiswick Gardens on the evening of the 18th inst. Members and friends exhibited scientific instruments, &c., and on the lawn *al fresco tableaux vivants* were presented in the course of the evening. The lawn was also elegantly illuminated at dusk.

Hammersmith Horticultural Society.—The summer show of this Society was held on the 18th inst., and Mr. J. C. Cowley, gardener to F. G. Tautz, Esq., Studley House, the President of the Society, contributed a very handsome group of Orchids in flower. Another good group consisting of foliage and flowering plants—tastefully arranged—was that contributed by Mr. M. T. May, gr. to the Marquis of Bute, Chiswick House. These two groups were, as may be supposed, in a show pertaining especially to the small gardens of the district, were not competitive. One of the prettiest little groups

for effect we have seen this season was that which gained first honours for Mr. Padley, gr. to R. L. Cosh, Esq., Rupert House, Chiswick. Vegetables securing 1st prize were well shown by Mr. R. Aitken, gr. to J. J. Ford, Esq., Ravenscourt Park, who also showed good cut flowers. Some pretty and interesting British Ferns were shown by Mr. John Addison, gr. to Mrs. Lloyd, Merton Lodge, Chiswick.

The Inflammability of Jute as Compared with Cotton.—Jute bagging, which has been used in America for cotton bales, has lately been replaced by cotton itself, as more safe and efficient. It has been tried by various tests, and found to be superior to the jute bagging in resisting the use of the cotton-hook, and the shocks of compressing, weighing, sampling, heading, reheading, and protects the cotton more effectually from damp and dirt. It has also passed the ordeal of fire. Four bales were used as a test. First, on a compressed bale covered with cotton cloth bagging, was placed an uncompressed jute bale. Alongside these was a compressed bale covered with jute, and on top of that was an uncompressed cotton cloth bale. A match was applied to the first jute. Immediately it was enveloped in flames; within a second of time the fire had run from end to end of the bale, and every thread and strand was burning. The bale beneath, covered with cotton cloth, was almost uninjured, the only damage being a slight scorching to the bagging, which did not extend to the cotton inside. Meanwhile the flames had spread to the compressed bale covered with jute, and it too was burning, while the cotton-clothed bale above was smoked, charred, and scorched, but would not burn. As an additional proof of the incombustible nature of the cotton bagging, a pan of burning charcoal was emptied on it, and even this did not cause it to burn. Another advantage of this bagging is, that it takes the marks so distinctly that they can be seen and noted at a distance, and are almost indelible.

"Tropical Agriculture."—A new edition of this work, by Mr. P. L. Simmonds, is in the press, and will be published by Messrs. E. & F. Spon.

Opening of Clissold Park.—The Earl of Meath, for the Public Gardens Association; Lord Rosebery, for the London County Council; Sir Lewis Pelly, M.P., and a large gathering of the public men of Hackney, Islington, Stoke Newington, and South Hornsey attended at Clissold Park, N., last Wednesday afternoon to take part in the public opening. The 52½ acres comprising the park are at present in a transitional state, the laying out of paths and other work being far from complete, although several ponds have been cut and furnished with ornamental islands and swans, and a number of seats have been placed for the convenience of the public. After a procession had been made round the Park, Mr. Runtz and Mr. Beck, who have taken a leading part in the acquisition of the Park for public purposes, briefly gave a history of the movement and the manner in which the £95,000, the cost of the Park, had been raised. The district mostly benefited by this great open space has contributed a considerable sum, and the County Council and the Public Gardens Association have generously assisted. Lord Rosebery declared the Park open, and this was notified to the outside public by the firing of a gun.

Esparto in Tripoli and Algiers.—The export of Esparto (Stipa tenacisima) from Tripoli during the past year is said to have been largely in excess of those of former years; altogether 69,000 tons were exported, namely, 45,000 from the port of Tripoli, and 24,000 from the Khoms district. Owing to the increased distances the Arabs have to travel to get to the Esparto-producing lands, and the prospects of high freights for the coming year, it is not expected that current prices will be alluring to them. Under the name of Alfa it is reported from Algiers that 2,250,000 metric quintals were collected during the year in that country, and that the great bulk of this is sent to England. Algeria, indeed, is said to furnish not much less than half of the entire quantities imported here. An important edict was published by the Governor-General on December 14 last, regulating the gathering, the sale, and the exportation of this valuable fibre, and establishing a close period extending over four months, for the protection of the plant, which seemed threatened with extinction, and which cannot be propagated by artificial means. In the Tell this is from January 16 to May 15, and in the High Plateaux from March 1 to the end of July. The Alfa, on the southern slope of the latter, descending to the Sahara, is reserved expressly for the use of the Arabs, and can only be gathered by them. In times of unusual drought or calamity, the date of the gathering season may be advanced in the interest of the Arab population. The plant may only be plucked by hand or by the use of a small stick. No cutting instrument of any kind is permitted, and no Alfa plants may be rooted up to be used as fuel, or for any other purpose. Rules are also made for the regulation of the various *chantiers* or depôts scattered over the colony for the purpose of collecting the Alfa from the Arabs or Spaniards, who are in the habit of gathering it.

The Dutch Bulb Crop.—From Haarlem it is reported that the crop of Hyacinths, and some other bulbs, is only a moderate one; a state of things which is attributed to the very warm weather experienced during the growing period, among which were some days of unusual and extreme heat. The bulbs of the Hyacinths, especially, are smaller than usual, but it is expected that they will give fine flowers, and be better adapted for early forcing than was the case with those harvested last year.

TREE-BRIDGE OVER A RAVINE.

Our illustration (p. 105) exhibits a primitive mode of forming a bridge by felling a huge Eucalyptus, and allowing the trunk to fall over a ravine of considerable width, in Gipp's Land, Lachland Territory, New South Wales. Baron F. Von Mueller, to whom our thanks are due for forwarding the photograph from which the figure was engraved, and which also shows a noble Tree Fern (Dicksonia), in writing to the *Argus* in March last, from South Yarra, concerning the big trees of Victoria, remarks:—

"Through the kind attention of our renowned fellow-colonist, Mr. A. W. Howitt, I received, some time ago, information of a tree of E. amygdalina, which grew on the southern slope of the Yarragon Ranges, where it was felled, according to Mr. T. Rollo, by a settler, Mr. Dickinson of name, in clearing for his dwelling; the length measurement of this tree was 410 feet, but, unfortunately, it was burnt off.

"Mr. C. Walter actually measured and re-measured, 1866, a fallen tree, also of E. amygdalina, about 2 miles north of Fernshaw, and found it to be 392 feet long. But as the very oily foliage of this species, also chiefly used in Mr. Bosisto's extensive distillations, so easily ignites, and as the wood of this kind of tree on damp ground is so readily perishing, we are, as a rule, deprived of the chances of re-measuring fallen or felled trees, however much we may wish to satisfy scepticism in this respect. But we might just as well discredit the occurrence, certainly very rare, of trunks of Todea barbara over 2 tons in weight, notwithstanding a specimen heavier still, and weighed at a reliable weighbridge, being placed by me permanently in front of the Exhibition building.

"For some other measurements of tree giants of ours, reference may be made to the fifth decade of the *Eucalyptography*, where also details of enormous stem diameters and stem circumferences are set forth, and where, likewise, are alluded to data about huge Tasmanian Eucalypts, as locally furnished by the Rev. J. F. Ewing, and as rendered further known already through Professor Henfrey's *Botanic Gazette*, as well as through Dr. M. T. Masters' early writings. Sir William Denison secured there also grand results in this respect nearly forty years ago.

"When last year the question of 'the tallest trees of the world' was anew discussed in connection with the Centennial Exhibition, I suggested, specially to to the Hon. John Forrest, the Minister of the Lands Department of Western Australia, that the most gigantic of the Karri trees (Eucalyptus diversicolor) might be accurately measured by the local surveyors, in confirmation of, or collateral to, the records left by the late Captain Pemberton Walcott, of Karridale, who spoke of a tree of that species fully 400 feet high, and who related astounding basal widths; while another most trustworthy West Australian settler, Mr. T. Muir, of Lake Muir, found Karri stems 300 feet long to the first branch, as reiterated in my *Select Plants*. I saw there myself, particularly towards the Gordon River, Karris of marvellous height, in dense underwood. Here, with us, giant trees should be particularly sought for, where the Eucalyptus forests merge into those of the evergreen Beech.

"What the recently-discovered extensive Sequoia forests, in Southern California, may yet reveal of colossal trees remains yet to be ascertained. Professor Brewer noted several species of Pinus in the United States, exceptionally, as 300 feet high, but these proud individual trees have probably disappeared. Here I have, with others, repeatedly urged that tracks should be cut to any yet remaining or newly-discovered giant trees for easy approach of visitors to the spot, and that such wonders of the empire of plants should be retained as State property, duly protected by law, the ground to be cleared around, and to be fenced off, so that also the next generations may yet enjoy a view of these living wondrous structures of centuries growth.

"As the Australian Association for the Advancement of Science will hold its next annual meeting in Melbourne, let us fain hope that the few veritable giants of the forests at present known may come within convenient reach in time for the meeting—January, 1890, also to the members, their ladies and friends, many from the neighbouring colonies, and, as the railway by that time will be ready to Bright, the Association may, perhaps, avail itself extensively of the chance to visit the Australian Alps right up to the glaciers."

American Notes.

The Society of American Florists will hold their annual meeting next month, August 20, 21, and 22, at Buffalo, N.Y., and to which I am instructed to cordially invite any of the European trade and those interested in horticulture who may be visiting America. Mr. Wm. J. Stewart, Boston, Mass., is the Secretary.

One of the principal subjects for discussion is "to establish an experimental garden in the country on the plan of the one at Chiswick" in the old country. The question of what shall be the national flower will also be brought up. Considerable public controversy on this subject has been going on during the year, and many are the suggestions put forth. The florists naturally want a flower that will afford them an opportunity to turn an honest dollar, but the public sentiment leans towards the adoption of the Golden Rod (Solidago), a common weed here [Sixty-six species in N. America]; other persons—lovers of the fragrant weed—vote for the Tobacco; whilst the sentimentalists suggest the modest Violet, perhaps Viola pedata; but the more sensible wish to have Maize, as being better known.

The parks and gardens, owing to the unusual rainfall, are not looking so well, and are not in so forward a condition as usual. Amongst the noticeable plants are dwarf French Cannas; the sacred Lotus (Nelumbium speciosum) is likewise in flower at the Central Park; but of the Lily pond and the bedding generally I will write in my next letter.

The small-fruit season is nearly over, the wet weather having played havoc with the crops of Cherries and Strawberries. Gooseberries are not much in demand over here, and no one makes a specialty of their cultivation. In opposition to this we find Strawberries taken with every meal, and a few facts concerning the enormous quantities grown and consumed may be of interest to your readers. One purchaser in New York told me that as many as eighty-nine car-loads were received there on some days. These refrigerator cars are much larger than English cars, and hold about 400 crates, each crate holding 32 lb. nett, which means over 1,000,000 lb. of Strawberries.

The varieties mostly grown for market are Sharp-

less, Downing, and Wilson. The highest prices obtained for early fruits are 35 cents per quart, and the lowest at any time 3 cents per quart. The earliest fruit comes from Florida and New Jersey, and the latest from Oswego, N.Y.; but the finest mid-season fruit is from Delaware. The berries are packed in square chip baskets, without lids; these are then placed, twelve to eighteen in a tier, in the crates, three tiers high, each tier being divided from those below and about it by a slip of wood. In this way Strawberries will travel for thousands of miles in perfect condition.

Consignments of big Water Melons from the Southern States; Pine-apples, from the West Indies, sell for 15 cents to 25 cents apiece; and early Peaches and Nectarines, from California, and great quantities of Blackberries from all parts of the States are now being received at New York and other populous towns.

Primula obconica, a plant now largely grown, is discovered to be capable of producing an irritant poison, and those who handle it are affected more or less with blood-poisoning; and this fact seems likely to be detrimental to its sale. Has this been noticed in England? *H. A. B.*



Fig. 17.—Pot-vine for table decoration, grown by the late Mr. Sage. (see p. 109.)

PLANT NOTES.

ALSTRÖMERIAS.

Of late years, these beautiful hardy herbaceous plants seem to be suffering neglect, which is all the more surprising as, when once they are established in a suitable position, very little further trouble is required. Moreover, they are well adapted for cutting, their stems, with terminal umbels of beautiful coloured flowers, rendering them very effective for furnishing tall flower-vases. But they are equally useful when employed for more lowly arrangements;

indeed, the beautiful pencillings and colours of the flowers are then better seen. They are exceedingly varied in colour, ranging from orange-yellow, rose-purple to dark, red, and even whitish, one of the best whites being A. pelegrina alba; but it is by no means plentiful, nor so hardy as the white-edged form of A. versicolor, the type of which is perhaps one of the hardiest and most useful of the genus. A. psittacina, crimson-greenish tipped, barred and spotted with brown and purple; a free-growing and flowering species of lighter colour and dwarfer habit is A. p. Erembaulti, white, spotted with purple; A. chilensis, hæmantha, aurantiaca, and aurea, are amongst the commonest and most useful; but there are many other species and varieties, all of which are well worth growing. Possibly the craze for bedding-out plants has had much to do with the elbowing of these plants into partial obscurity; and we were agreeably surprised the other day, when visiting the gardens at Burford Lodge, to find a large bed of them that was one dense mass of flowers. They were chiefly A. aurantiaca and A. versicolor, but there were many other shades of colour represented, which gave the bed a rich and pleasing effect.

Alströmerias are of comparatively easy culture, the greatest difficulty being to get them firmly established, after which the less they are moved the better. Seeds of most of the species are generally procurable; they should be sown in pans in light sandy compost, under glass, in the usual way; they soon germinate, when they should be pricked out thinly into small pots and plunged in a cold frame, where they had better be grown for the first year, and the next season, while still at rest, they should be transferred to their flowering quarters. The soil should be prepared by being trenched to at least a depth of 2 feet. If it is heavy, add peat, leaf-mould, or other similar material, to render it free, as their fleshy roots delight in a free rich soil, which, above all things, has been efficiently drained. Plant at a moderate depth, and, if possible, in a sunny and sheltered position. They may also be increased by division of the roots. *F. R.*

Crossandra undulifolia.

A distinct, dwarf, evergreen stove plant, producing erect thickly set four-ranked spikes of brilliant cinnabar-red flowers, in centripetal order, which enables it to maintain its showy character for many weeks.

To those not acquainted with the plant, I may mention that the inflorescence in some measure resembles Justicia, to which order of plants Crossandra belongs, but the individual flowers are more flattened out, showier, more lasting, and are altogether much superior to those of Justicia. Moreover, the plant rarely exceeds a foot in height. The growth is by no means of a rampant description, yet with ordinary cultivation the plant grows and flowers freely. In summer, after flowering, the plant should be shortened back below the flower-spikes, when, if kept moist, it will soon push fresh growths; it should then be repotted, shaking away as much of the old soil as can be done without injury, and using a rather light but rich loamy compost. If the loam be heavy add some peat, and in any case a good sprinkling of bone-meal or other mild fertiliser, using nitrogenous manures in a liquid state as the plant comes into flower. After potting, keep somewhat closer, and syringe freely, giving more air, as they become re-established, when, by early winter, they should have nice short-jointed firm shoots, with shiny dark-green leathery leaves. During the winter months the plant is better kept quiet in a temperature of about 55°, when, with the natural increase in warmth, about April, the flower-spikes will make their appearance, and keep opening their flowers for the next three months. The plant is easily propagated by cuttings in the usual way, and after they are rooted, treating them similar to the older plants. Large spikes can be had from these young plants, but for general decorative purposes we prefer plants more than a year old. *F. R.*

MR. GEORGE SAGE.

We regret to have to record the death, on the 17th inst., of Mr. G. Sage, a gardener very well known in the profession some few years ago. He was an excellent all-round gardener, who acquired celebrity as a cultivator in most departments of horticulture, at Ashridge Park, Great Berkhamstead, the residence of the Earl of Brownlow. And when at this place he introduced the use of pot-vines in fruit for the decoration of the dinner-table, and an illustration taken from one of Mr. Sage's vines is reproduced at p. 108.

After long service at this place, Mr. Sage was removed to the other residence of the family, Belton House, Lincolnshire, where he also undertook the management of the gardens.

The deceased was born at Hillingdon in Middlesex, in the year 1824. He served successively as journeyman and foreman at Belmont, Uxbridge Common; in the gardens of Mr. Smith, the banker at Uxbridge, then under Mr. Mills at Gunnersbury Park, where he acquired considerable knowledge in all departments. Pines, Cucumbers, and Mushrooms were especially



well done at that place. From this place he went to Chatsworth, and, in 1854, to the Crystal Palace, as foreman to the late Mr. G. Eyles. In 1858 he obtained the post at Ashridge, through the influence of Sir Joseph Paxton. His portrait, which we reproduce, appeared in our columns on January 8, 1876, together with a review of his life. We understand that Mr. Sage's successor at Belton is Mr. Emerton, who has been for some time foreman at Ashridge under Mr. Lowe.

THE FLOWER GARDEN.

Herbaceous Plants.—The recent showers have revived these plants marvellously; Phloxes, favourite plants here, are now vigorous, where a few days ago they were drooping; and their flowers are opening rapidly, and in order to avert another check from drought, should the state of the weather demand it, they will be afforded water at least once a week. It may not be generally known that the flowering season of Phloxes may be prolonged by pinching out the points of some of the shoots, the pinching causing the production of lateral growths, which flower long after those not pinched, are over. Those desirous of trying the plan should pinch, say half the shoots on a plant, and allow the others to flower at once; the bloom on the laterals following closely the early bloom. My rule is to pinch only the strongest shoots. The same treatment, when applied to Pentstemons and Antirrhinums, brings about like results. Geums and Potentillas may be made to flower several weeks later than their usual season if the first flower-stems are removed in the same way, and for the same reason that the blossoms are from Strawberry plants when strong layers are desired, and my invariable practice is to treat about half of our plants in this manner. I have tried this plan with perennial Sunflowers and Veronicas, but with very indifferent results, the flowers of the lateral shoots being insignificant in size.

At this season, neglect to look over the borders for a few days may prove harmful to many small plants that are, so to speak, at the mercy of the strong growers, such as Delphinium, Everlasting Peas, Funkias, Spiræas, and Helianthus, and all of these, as soon as their flowering is past, should be tied closely together, thereby making space for the Gladiolus, Lilies, Asters, Stocks, Phlox, Drummondii, Mignonette, Zinnias, &c., all plants of first importance for the autumn display. Having had a quantity of Violas at replanting time which were not wanted, they were planted in clumps at the front of the borders, and here, aided by a large number of seedling Carnations, they have kept up a gay appearance pending the flowering of Gladiolus, Hyacinthus candicans, German Asters, Helianthus (Michaelmas Daisies), and summer-flowering Chrysanthemums.

Dahlias.—The reasons usually assigned for not growing these in greater numbers in small gardens is the lateness of their flowering, and the reason is indisputable when applied to show and fancy Dahlias; but it is not true of the single varieties, and of some few of the Cactus Dahlias. The singles have been in good flower with me for a month past, and some half-dozen kinds of the latter for about a fortnight. The names of these are Constance, white; Mrs. Hawkin, cream colour; Lord Lyndhurst, bright purple; Lady E. Dyke, yellow; Juarezii, scarlet; and Colchineal, bright scarlet. They would have been in flower earlier, but for the pinching out of the points of the shoots to induce a bushy habit of growth. The singles, too, are all the better for being once stopped, if it is intended to keep them dwarf; I have many times pegged down young shoots of single Dahlias, and just as often been successful in keeping the plants dwarf, and the heads more open, and, consequently a greater space for the flower display. Next to mulching, the full exposure of the flower-shoots to light and sunshine has the best effect in producing fine blooms—hence the necessity to cut out from time to time any small shoots which are never likely to carry flowers, but which, by crowding the better shoots, prevent their flowering properly. Renew the mulching of rich manure, which will save much of the labour of watering.

General Work.—Put in cuttings of Roses, Pinks, and Carnations. Propagate all kinds of Pelargoniums of which cuttings can be taken; these last will strike readily if dibbled firmly in the soil of a sunny border, and will be ready for potting-up early in September. Cuttings of Phloxes, Pentstemons, and Violas may also now be put in on a north border, and put hand-lights or small frames over them, to ensure a successful strike. *W. Wildsmith, Heckfield, Winchfield.*

HOME CORRESPONDENCE.

THE EVENING PRIMROSE.—How fine and showy are the Œnotheras just now. The wonder is that they are not more generally grown in gardens, as they are the very plants for broad borders, in the foreground of shrubs, imparting lightness and cheerful colour to sombre portions of those places. The largest and best of them have big bell or cup-shaped flowers, of a beautifully soft yellow colour, which spring from the shoots in great profusion during a long period of the late summer. Œ. biennis, the commonest of all Œnotheras, is the best for planting in the places referred to, it growing from 3 to 5 feet high, and forming quite a pyramid of bloom. The variety known as the Œ. Lamarckiana or grandiflora, is an improved form of it, and could be preferred, but to keep a good strain pure it is necessary to pull up or destroy all that in the least seem to be of inferior quality as regards habit of

growth and profusion of bloom, and good colour, as among even a few, some are seen to be pale in colour and small in bloom. For the wild garden, this Œnothera is well suited, as there is no trouble in keeping and growing it, for plants seed so freely and others come up annually, that all one has to do is to thin them out, leaving as many to grow as are wanted. Those who have not got Œnothera biennis Lamarkiana, will find this a good time to start with it, as now is the season for sowing the seed and raising plants, which will flower next year. The seed may be sown any where in fine soil, in the open, or under a handlight, from whence plants can be transferred and planted during the autumn, or early spring, in places where they are intended to bloom. Besides this biennial evening Primrose, there are several perennial kinds, the most noteworthy of which are Œ. fruticosa, Œ. glauca, and Œ. macrocarpa, all of which are well worth growing in gardens. The first named of the trio and its varieties grows about 2 feet high, and bears a great profusion of yellow blossoms, which it continues to yield till quite late in the season. Œ. macrocarpa bears large blooms on prostrate stems, and the plant forms a fine object on any elevated position. The perennial Œnotheras are best raised or propagated by divisions, which is safely carried out in the spring time when growth is beginning. *J. S.*

THE PLAGUE OF CATERPILLARS.—In Worcestershire and the adjoining counties fruit and other trees have suffered most severely by an unusual attack of the caterpillars of the winter moth and its allies, especially during the month of May, devouring the leaves and blossoms as fast as they put forth. Some entire orchards were nearly as devoid of foliage at Midsummer as they would be at Christmas-time. Oak trees and Hawthorn hedges in many instances fared badly, for wherever an attack was made every vestige of foliage was eaten up by the invaders. An exceptional case which came under our notice may be worth recording, the orchard being singularly free from the grubs, although surrounded by other orchards abounding with them. It is rather more than a year ago that an orchard, consisting mainly of fine varieties of Apples, came under my charge. It had been neglected for some years in the matter of pruning, freeing from lichen, &c., and in order to get rid of the latter the trees, after being judiciously pruned, were, on a still, foggy day, early in March, well dusted over in every part with quicklime, the men climbing into the trees by means of ladders and otherwise, in order to distribute the finely powdered lime in every part of the head of the trees. It is to this careful dressing with lime, undertaken for a different object, that I am inclined to attribute the immunity of this particular orchard from the attacks of the caterpillars. It seems also to point to the value of quicklime in destroying the eggs of these caterpillars. At all events it is my intention to proceed further, at the proper season, with this as well as every other known means to prevent loss of fruit by insects, these including the smearing of the stems of standard trees in October and November with composition of cart-grease, Stockholm tar, &c. Possibly some of your numerous correspondents could give me useful hints as to the best way to cope with our various orchard enemies. *W. Crump, Madresfield Court, July* 18. See p. 94.

HARDY CARNATIONS. — In reference to "Mr. A. D.'s" excellent note on the hardy Carnation, p. 19, of a recent issue, the wonder to me is that seedling Carnations are not more largely grown; they are so useful for cutting, their colour so varied and the perfume unequalled. One sometimes hears the remark by good gardeners, how difficult a class of plants they are to grow; but I would advise such to have still another try, for they well repay attention to their wants. At the present time, I have two beds which are a perfect picture, the blooms, double and single mixed, and of all colours. The seed was sown last April twelvemonth; and instead of keeping them in a frame in the winter as "A. D." does, I plant mine out where they are to remain. The seed is sown in pans about the last week in March or early in April, and as soon as the seedlings are large enough to handle, they are pricked out 2 inches apart in boxes, and kept growing in a frame for a few weeks, and then are gradually hardened-off; by the end of June they are strong enough to plant out in rows at 1 foot apart. By so proceeding, the seedlings have time to make sturdy growth, and get well inured to stand the winter weather. In hard weather some growers might find it advisable to slightly mulch them with short manure, but in Hants this is not necessary. For pot work, seedlings also do well pricked three in small pots, and potted on into 48's or 32's, and taking them in a cool house in October, they come into bloom in spring. Carnation Grenadine and the early flowered double are good for this purpose, and may be obtained true from any good florist. *W. Kirk, Blackmoor, Hants.*

RUBUS OCCIDENTALIS. — Four years ago some seed was given me by a gentleman who received them from a friend in Nova Scotia, under the name of "black Raspberry." I succeeded in raising many plants, and this year they have borne abundantly and made excellent tartlets. The fruit is borne in clusters, at the end of sprays, as you will see. The growth is extraordinary. They have made already upright shoots more than 12 feet. The fruit is from last year's wood. It is plentiful, but small. The appearance of the canes in the winter is very singular and beautiful. The small branches droop most artistically, and the canes have a white appearance as though whitewashed. They are worth cultivating even on this account. Can you say if they are really Raspberries or Brambles? The gentleman says his friend (Mr. John M. Jones, Waterville, Nova Scotia), is certain they are Raspberries. *Wm. Hy. Rogers.* [Asa Gray classes it with Raspberries, but it is intermediate between the two. Ed.]

NORTH AMERICAN COMPOSITES. — The large North American Composites are unusually fine here, as well as early, this season. I am sending three specimens:—1, Rudbeckia californica, flowers 7 inches across, and produced thirty at once, with stalks 7 feet long; 2, Silphium laciniatum, the Compass plant, 8 feet high, with flowers 6 inches across, and very ornamental leaves. The American name of the plant was given, as Asa Gray says, because it has a disposition to arrange the edges of the leaves North and South: but it does not show this habit in my garden. 3, Helenium autumnale var. grandiflorum. Of many varieties of this plant, the flower I send, belongs to by far the best I have seen; some of the forms being quite worthless. I bought it from Ware's nursery many years ago, and found it correspond to Asa Gray's description of var. grandiflorum, though the size of the flowers far exceeds the dimensions given by him, viz., "rays sometimes three-quarters of an inch long." The flowers I send have rays fully 1¼ inch in length. *C. Wolley Dod, Edge Hall, Malpas, July* 23. [Grand specimens. Ed.]

CLIANTHUS DAMPIERII.—That this soft-wooded greenhouse climber is worthy of cultivation is generally acknowledged, and would be placed beyond all doubt were any gardener to see the splendid specimen growing in the Peach-house at Indio, Bovey Tracey, South Devon, the seat of Charles Aldenburg Bentinck, Esq. I would not advise the planting flowering climbers in fruit-houses, but when planted against the end of the house, as at Indio, the singularly shaped and brilliant scarlet flowers hanging in large trusses, the plant has a splendid effect. Failure to grow this plant satisfactorily is not rare, and even at Kew they are not very successful. I remember, whilst on the staff of gardeners in that establishment, hearing an essay read by the deputy-foreman in the greenhouse department, bearing on greenhouse plants and climbers. In alluding to the plant in question, he could not recommend it as a good climber, making some very disparaging remarks respecting it. Mr. Hambly, the gardener at Indio, believes that if the plant be put into loam of good quality, leaf-mould, and coarse sand, and be afforded an airy position in a house, and abundance of light, success will be assured. *W. H. Aggett.*

SUTTON'S "ROYAL JUBILEE" PEA.—In writing about this excellent Pea, in the *Gardeners' Chronicle* for August 18, 1888, I said that Royal Jubilee Pea was sure to be extensively cultivated, as it was suited alike for the poor man's and the rich man's gardens. Well, during the last week I have had conclusive proof of the correctness of the opinion then pronounced on the merits of the Pea under notice. I have had to inspect the cottage gardens, allotments, and garden fronts in twelve large parishes, comprising the Longford Castle Cottage Garden Show, and in nearly all those cottage gardens and allotments I found Royal Jubilee in first-rate condition, the haulms being strong, free from mildew, and heavily cropped with large handsome pods; this, too, in a variety of soils and situations. The end of the present month, when produce from the several gardens will be staged in the exhibition tents, I hope to see several good dishes of this grand Pea put up for competition for the Society's prizes. *H. W. Ward, Longford Castle.*

CORDON CURRANTS.—An Ealing resident, who takes a great interest in his garden, has a fancy for red and white Currant trees, trained as perpendicular cordons, and he has some remarkable specimens; in a few cases they are 14 and 15 feet high. He is such a genuinely enthusiastic gardener, and takes so much pride in his garden, that I do not like to term him a "faddist," but he does make a hobby of his cordon Currants, and rides it hard. Every season he allows a leading shoot, continuous of the one of the previous year, to go upwards, and the cordons then lengthen annually by 2 feet or so, and they fruit all the way up to the point where the shoot of the current year commences. As a matter of course, all the lateral shoots are spurred back. How he is to gather his fruit in the future passes my comprehension. It is now a matter of considerable difficulty, but my ingenious neighbour will probably overcome this difficulty in course of time. *R. D.*

CHRYSANTHEMUM MAXIMUM.—With respect to a complaint about the raggedness of the rays of Chrysanthemum maximum, I may say that when in London a month ago I saw it both at Ware's and at Barr's (Tooting), producing mostly ragged and ill-shaped flowers. The plants there were supplied by me from the very same stock, which in my garden is one of the greatest attractions to visitors. The rays are very uneven in length, but they are generally a two, and, in some cases, three series—that is to say, in parts of the flowers three rays are overlapped or imbricated. In this way the irregularity of outline is to me more pleasing than the strict regularity of such composites as Odontospermum maritimum and Pyrethrum Willemotti. The multiplication of rays may be due to suitable soil; and, no doubt, gravelly, hungry soil would tend to diminish the fulness of the flower. I see De Candolle (*Prodromus*, vol. vi.) mentions only one spot on the Pyrenees as a locality for this flower—viz., a high elevation near Garèges. Nyman, a good collator, mentions, besides Pyrenees, Dauphiny, Piedmont, and Corsica. Ware told me he had it from Portugal. *C. Wolley Dod.*

A NEW DESIGNATION.—The *Rural Australian*, published in Sydney, in an article commendatory of the new Lord Keeper Onion, terms Mr. Henry Deverill, of Banbury, "a noted Onionist." We thus get a new term in horticultural matters, and it will doubtless lead to others. Thus, the Rev. F. D. Horner, is an Auriculist; Mr. E. S. Dodwell, a Carnationist; Mr. John Laing, a Begoniaist; Mr. Samuel Barlow, a Tulipist, and so on. And why not? The termination ist is used to designate political parties. Why not specialists in horticulture? *R. D.*

HIGH MOULDING.—As far as I understand Mr. Jensen's mode of growing Potatos, it is very much the same as what I have known and practised for more than thirty years. Mr. Belton, who was for many years gardener and steward at Nostell Priory (Lord St. Oswald's), devised it for the purpose of preventing the disease, which it does very effectually. The rows are made a yard apart, and the plants are set a yard apart in the rows. They are earthed-up in the usual way. When the haulm is about a foot long, it is bent down into the trenches at each side, and the earth of the rows between the plants is heaped up into a mound upon the top of the plants. Potatos grown thus are not only free from disease but they usually produce a larger crop than if grown in the old-fashioned way. There has been so little disease lately, and the stick-in-the-mud principle is so desperately strong in the mind of the British agriculturist, that my people have got back to their old ways; but I have not the least doubt as to the superior merits of growing them in heaps. The only objection I ever heard made to it was, that the Potatos grew too large. Mr. Belton came originally from the Royal Horticultural Society's garden at Chiswick. *C. W. Strickland, Malton.*

SOCIETIES.

ROYAL HORTICULTURAL.

July 23.—Last Tuesday's meeting was devoted chiefly to the exhibits of the National Carnation Society, which were both numerous and of high quality. The committees had no very heavy duties to perform, and Orchids were very few. Before the Fruit Committee, Messrs. J. Veitch & Sons' collection of Gooseberries, &c., was the chief object.

At the afternoon meeting, Dr. R. Hogg, F.L.S., occupied the chair, and Mr. Shirley Hibberd gave an instructive address on the subject of the Carnation. In the course of his remarks, Mr. Hibberd reviewed the progress of the Carnation in cultivation, by references to illustrations in various old horticultural and botanical books, and pointed out that as a matter of fact, there was but little development in the flakes, whereas in Picotees the colour had been gradually reduced from spotting of the petals to a band on the margin.

Attention was called to the fact that the prize varieties of some sixty years ago are not to be met with at the present time, and it was argued that the Carnation of the florist was a pure flower—a cultivated form of Dianthus caryophyllus—without the admixture of any other species, and that we owe its present-day beauty to the skill of the gardener and florist rather than to any act of Nature. The lecture in full will appear in the *Journal* of the Society.

Floral Committee.

Present: Mr. Shirley Hibberd, in the chair; and Messrs. J. Fraser, W. Holmes, G. Nicholson, H. Herbst, G. Paul, R. B. Lowe, B. Wynne, W. Goldring, and F. Ross.

Mr. W. Rumsey contributed a collection of cut Roses, numbering eight boxes of bright blooms, of moderate dimensions, they were not of first quality, but that was not to be expected at this late season; pots of Adiantum placed between the boxes, gave a good effect. The blooms shown were of the popular varieties, as Ulrich Brunner, Prince Arthur, Alfred Colomb, Niphetos, &c., not forgetting blooms of The Bride.

Mr. H. B. May, The Nurseries, Upper Edmonton, N., sent a new Bouvardia, named Mrs. Robert Green, which bears good heads of fairly large flowers of a salmony-rose tint; from the same exhibitor was a bouquet of various Bouvardias, a capital selection of good varieties—as follows: President Cleveland stood out well as a rich scarlet; Vulcan, somewhat similar, but smaller; and Elegans, of a dull hue; Humboldt, the large scented white, was conspicuous; and jasminoides and candidissima were also included, the latter having the recommendation of being of dwarf habit. The new Mrs. Green and Priory Beauty are pink varieties; and of doubles, President Garfield, pink, and Alfred Neuner, white, completed the whole.

A collection of hardy herbaceous flowers was staged by Messrs. Paul & Son, Old Nurseries, Cheshunt, in which were included examples of Montbretia Pottsi, Liatris spicata, Eryngium giganteum, E. flavum, Rudbeckia purpurea, Polemonium Richardsoni, Hemerocallis Thunbergi, and others. A plant of Spiræa gigantea, from the same firm, attracted considerable notice; it was 8 feet in height, with a single stem, bearing a tuft of white flowers at the top. A few Roses (H.P.) were also contributed, being represented by Bruce Findilay, a very dark crimson; Cheshunt Scarlet, T. B. Haywood, and Dowager Duchess of Marlborough, delicate rose.

A number of plants of a vigorous and well-grown form of Cyrtomium falcatum W. G. Fensom were sent by Mr. G. Fensom, Tottenham, who also had a plant of a dwarf golden-leaved variety of Chrysanthemum frutescens; it was not very pleasing, the golden tint being somewhat weak and undecided. Mr. G. R. Johnson, Tottenham, had a plant of Chrysanthemum Leonie Lassali, very dwarf, with three flowers.

Blooms of seedlings of Lilium auratum, with beautiful combinations of rose and yellow on a white ground, were sent by Mr. A. Waterer, Knap Hill Nurseries, Woking.

From Mr. W. Colman, Swiss Cottage, Tunbridge Wells, came a plant of Pteris serrulata plumosa, the frond appears to split at the tip, and to continue its growth, falling down gracefully, and hiding the pot with tassels of verdure; it would doubtless make a valuable table plant.

A collection of cut blooms of decorative Dahlias was sent by Messrs. J. Cheal & Son, Crawley—James Scobie (single), yellow, with scarlet splashings, was a conspicuous variety; the pale mauve and brown Duchess of Albany; Victoria, white, with margins of crimson; Henry Irving, J. Kelway, and others were also shown. Of several blooms of the Cactus section, Panthea, Zulu, and Wm. Pearce, were noticed; also a new unnamed seedling, bright, full crimson.

An interesting group came from the Coombe Wood nursery of Messrs. Veitch & Sons; this consisted of Ulmus Dampieri, of erect habit, bright yellow foliage, young and old leaves being equally well variegated; Abies canadensis argentea, a Hemlock Spruce, the tips of whose branchlets were of whitish-green—a distinct-looking plant; Retinospora pisifera aurea, good variegation; Astilbe Thunbergii, with white plumes; Sambucus racemosa, with scarlet berries in clusters; Spiræa callosa atrosanguinea, a variety of merit; Ceanothus azureus albicans, densely flowered shoots, whitish flowers; some well-bloomed branches of Colletia horrida; leaves and shoots of the fine American Oak, Quercus macrophylla, grand when seen in its autumn tints of rich browns; Clematis coccinea, scarlet; and C. crispa, with lilac flower; Cornus siberica Späthi, with distinct yellow variegation, the central portion of the leaf green; Cytissus nigricans, with slender racemes of yellow blossoms; Veronica angustifolia, pale lilac spike 4 inches long; V. ligustrifolia, with a white spike; Philesia buxifolia, bearing nicely flowered shoots; and Asclepias incarnata flowers.

Messrs. J. Veitch exhibited some Petunias of good habit, and also a few hybrid greenhouse Rhododendrons.

W. Roupell, Esq., Roupell Park, showed four specimens, very well grown, of Polystichum angulare proliferum, in which almost all the lower fronds showed abundant prolification; also some young plants of the same. These had all been grown in a Tomato-house, and in the neighbourhood of a damp wall, and very slightly shaded, so that the prolified state of the fronds was not due to excessive moisture.

Mr. Ross sent, from the gardens of Pendell Court, flowering branches of Bignonia cherere and Tecoma jasminoides; and from Mr. Wythes, Sion House Gardens, Brentford, were well-flowered specimens of Clethra arborea, with its elegant Lily-of-the-Valley-like flowers, and a flower of Cereus hexagonus.

An Amaryllis from Bermuda, dark red with a white nerve, and flowering shoots of the white Borage were sent by Messrs. J. Carter & Co.; and from Mr. Eckford, Boreatton Park, Shrewsbury, were Pansies and flowers of Sweet Peas; Primrose, pale yellow; Mrs. Gladstone, pink on white; Captain of the Blues, rich blue; and Mauve Queen, slate blue, were good. Mr. T. Laxton, Bedford, also sent Sweet Peas.

Cut blooms of Begonias, both double and single, in rich colour, and of fine size, were sent by Messrs. H. Cannell & Sons, Swanley, Kent. Plants of these in pots from seed sown last January were shown in flower, bearing four or five leaves, and two good blooms. A few trusses of Verbenas from the same firm were worthy of note:—Burns, rich scarlet, with a small white eye; F. Delaux, scarlet, with a white eye; Purple Queen, rich violet-purple; Ball of Fire, scarlet; Clemens Grohé, scarlet flakes on white; and Paragon, plum-colour, offer a good variety of these useful plants.

Orchid Committee.

Present: Dr. M. T. Masters, F.R.S., in the Chair; and Messrs. J. O'Brien, F. Moore, E. Hill, C. Pilcher, H. M. Pollett, J. Douglas, H. Ballantyne, and H. J. Veitch.

The labours of this committee were not arduous.

From Sir Trevor Lawrence's collection at Burford Lodge, Dorking, there were sent a fine piece of Cattleya Eldorado Wallisi, entirely white, with a dark yellow throat; also an elegant variety of the same species named Painted Lady, in which there is a small blotch of crimson-purple in the centre of the median lobe, fading off all round, the rest of the flower being white. Dendrobium revolutum was represented by a well-grown piece, and a large pan of Maxillaria fuscata was also sent; it has flowers of a dingy red-brown colour, with yellowish tips to the segments, the three outer of which are somewhat expanded, the others closing up round the column.

A variety of Cattleya Eldorado, which displayed a very pleasing combination of colours, was sent by H. M. Pollett, Esq., Fernside, Bickley; it was named albo-splendens, and was white in all parts but the lip, which was richly coloured with crimson-purple, with the yellow of the throat very noticeable, the two colours being separated by a line of white, which tended to throw up both of the other colours; another pleasing feature was a narrow edging of the purple colour running all round the expanded portion of the lip. Messrs. J. Veitch & Sons sent Sobralia xantholeuca alba, a very pale primrose.

Fruit Committee.

Present: Sir C. W. Strickland, Bart., in the chair; and Messrs. R. D. Blackmore, J. Cheal, W. Bates, G. Bunyard, A. H. Pearson, W. Warren, T. J. Saltmarsh, G. Wythes, H. Balderson, Harrison Weir, and J. Wright.

Messrs. J. Veitch & Sons exhibited 112 varieties of Gooseberries, and a few of summer Apples and Pears. The collection consisted of all the best dessert, and largest show berries. Alongside of these were stems of cordons of Gooseberries, literally loaded with the fruits. A few dishes of Black Currants were likewise shown; Lee's Black and Naples being by far the best.

Messrs. Paul and Son, Old Nurseries, Cheshunt, showed forty-four dishes of Gooseberries, mostly large varieties; the Hornet Raspberry, of dark crimson colour, and fair flavour came from the same place.

Messrs. Sutton & Sons, Reading, had a collection of Capsicums, including the recent novelty, Coral Red, which was certificated at the last meeting at Chiswick, others were such varieties as Red and Yellow, Tomato-shaped, Mammoth Long Yellow, Red Cherry, &c.

Messrs. G. Bunyard & Co., Maidstone, showed a few early Apples, a few of Red Astrachan from under glass having a pleasant appearance.

Mr. Allan, gr., Gunton Park, Norwich, showed Allan's Favourite Cucumber, raised from Telegraph and Blue Gown, and, as might be supposed, the fruits were very fine ones, smooth, long, and ribbed.

Mr. H. Marriott, Prospect House, Skirbeck, had a very fine Pea in Pride of Lincolnshire—large curved pods, of a dark green colour, filled with large Marrow Peas.

Awards were made as follows:—

By the Floral Committee.

First-class Certificates.

Cyrtomium falcatum Fensomi [Fensom's variety], from Mr. G. Fensom.

Spiræa gigantea, from Messrs. Paul & Son.

Cornus sibirica Spathi [Späth's variety], from Messrs. J. Veitch & Sons.

Bouvardia Mrs. Robert Green, from Mr. H. B. May.

Bignonia cherere, from Mr. Ross.

Pteris serrulata plumosa, from W. Coleman.

Award of Merit.

Sweet Peas (Swain), from Mr. H. Eckford.

Medals.

Bronze Banksian, to Mr. W. Rumsey, for cut Roses; to Messrs. J. Veitch & Sons, for group of plants.

By the Orchid Committee.

First-class Certificate.

Sobralia xantholeuca var. alba, from Messrs. J. Veitch & Sons. Unanimous.

Botanical Certificates.

Maxillaria fuscata, from Sir T. Lawrence, Bart., M.P. Unanimous.

Dendrobium revolutum, from Sir T. Lawrence, Bart., M.P. Unanimous.

By the Fruit Committee.

Award of Merit.

Cucumber Allan's Favourite, from Mr. Allan.

Medals.

Silver Banksian to Messrs. J. Veitch & Sons, for collection of Gooseberries, &c.

Bronze Banksian to Messrs. Paul & Son, for collection of Gooseberries; to Messrs. Sutton & Sons, for collection of Capsicums.

National Carnation and Picotee (Southern Section).

The annual exhibition took place at the Drill Hall, in connection with the meeting of the Royal Horticultural Society, on Tuesday, July 23, and proved one of the best displays seen for years past. Every class was well filled; the general quality was decidedly good, despite a season that was not altogether friendly to the cultivator. Many of the

blooms were brilliantly coloured, but the white ground colour of not a few lacked purity. The flowers were of large size, and it would appear as if the force of the plants went to the piling up of petals in the flowers, as there is a general complaint of lack of grass. On the whole, the Society can congratulate itself upon substantial progress, as the number of exhibitors has considerably increased, thus manifesting a healthy growth of regard for the Carnation.

Carnations: Cut Blooms.—In the class for twenty-four blooms of Carnations, not fewer than twelve dissimilar varieties, Mr. Charles Turner, Royal Nurseries, Slough, was placed 1st, with a fine lot of flowers, large and smooth, of full substance, and brightly coloured, consisting of scarlet bizarres, Mars, James McIntosh, Robert Lord, Robert Houlgrave, and George; crimson and pink bizarres, Mrs. Daniels, James Taylor, Mrs. Barlow, Rifleman, and Unexpected; scarlet flakes, Charles Turner and John Ball; purple flakes, Prince George of Wales (a fine variety, raised by Mr. Beardsley, of Nottingham), and James Douglas; rose flakes, Thalia, Sporting Lass, and Samuel Newman—some of the foregoing being shown in duplicate; 2nd, Mr. J. Douglas, gr. to Mrs. Whitbourn, Great Gearies, Ilford, with S.B.'s Arthur Medhurst, Robert Lord, and Robert Houlgrave; C.B.'s Lallah Rookh, sport from Tim Bobbin, and Miss Gorton; S.F. Alisemond (very fine), and Matador; P.F. Warrior, James Douglas, Squire Whitbourn, and Daphne; R.F. Rob Roy and Jessica; 3rd, Mr. M. Rowan, Manor Street, Clapham; 4th, Mr. R. Sydenham, Birmingham.

In the class for twelve blooms there were eight competitors. Mr. M. Rowan was 1st, with a finely-finished lot of blooms, consisting of S.B.'s Fred and Robert Houlgrave; C.B.'s Edward Rowan, Master Fred, and William Skirving; S.F.'s John Whitham and Sportsman, R.F.'s Seedling, Rob Roy, and Jessica; and P.F.'s James Douglas and George Melville; 3rd, Mr. J. Lakin, Temple Cowley, Oxford; 4th, Mr. W. L. Walker, Reading.

In the class for six blooms there were ten competitors, and here Mr. C. Phillips, Hamilton Road, Reading, was 1st, having fine and striking blooms of S.B. Robert Houlgrave, C.B. John Harland, P.P.B. Rifleman, P.F. James Douglas, S.F. Alisemond, R.F. Rob Roy; 2nd, Mr. T. E. Henwood, Hamilton Road, Reading, with S.B. Robert Houlgrave, C.B. John Harland, P.P.B. Harrison Weir, P.F. James Douglas, S.F. Alisemond, R.F. Rob Roy; 3rd, Mr. H. Startup, Bromley, Kent; 4th, Mr. T. Anstiss, Brill, Bucks.

Single Blooms.—In the classes for single blooms, a large number were staged, and the following awards were made:—S.B.'s: 1st, Mr. T. E. Henwood; 2nd, Mr. James Douglas; 3rd, Mr. C. Phillips, all with Robert Houlgrave; Mr. Samuel Barlow's fine S.B., for this time, at least, quite displacing Admiral Curzon, scarcely a flower of this variety being seen; 4th, Mr. C. Phillips, with Robert Lord; 5th, Mr. C. Turner, with James McIntosh.

C.B.'s: 1st, Mr. M. Rowan, with Master Fred; 2nd, Mr. J. Douglas, with John Harland; 3rd, Mr. C. Turner, with Rifleman; 4th, Mr. C. Phillips, with John Harland; 5th, Mr. M. Rowan, with J. D. Hextall.

P.P.B.'s: 1st, Mr. J. Lakin, with Miss Annie Lakin, very promising, fine in colour, and well formed in petal; 2nd, Mr. C. Turner, with James Taylor; 3rd, Mr. M. Rowan, with William Skirving; 4th, Mr. C. Phillips, with the same; 5th, Mr. H. W. Headland, Leyton, with Miss Gorton.

P.F.'s: 1st, Mr. C. Turner, with Prince George of Wales, and 2nd also; 3rd, Mr. T. Hooper, Bath, with seedling Mayor of Bath, and 4th, with the same; 5th, Mr. W. J. Nicholls, with Squire Whitbourn.

S.F.'s: 1st and 3rd, Mr. J. Douglas, with Alisemond; 2nd, Mr. R. Sydenham, with Sportsman; 4th, Mr. C. Phillips, with Sportsman, and 5th, with Matador.

R.F.'s: 1st, Mr. J. Douglas, with Thalia; and 3rd, with the same; 2nd and 5th, Mr. T. Hooper, with George Cooling; 4th, Mr. T. E. Henwood, with Thalia.

Premier Carnation.—Robert Houlgrave S.B., shown by Mr. C. Turner, in his stand of twenty-four varieties.

Picotees.—Picotees were shown in finer condition than the Carnations, the grounds pure, and the markings bright. Here Mr. J. Douglas was placed 1st, with twenty-four blooms, though there was much difference of opinion as to the appropriateness of the award, some of his flowers being small and thin. Mr. Douglas had, of Heavy Red Edges, Princess of Wales, Brunnette, and John Smith; Light Red Edges, Mrs. Bower and Mrs. Gorton; Heavy Purple Edges, Calypso and Mrs. Chancellor; Light Purple Edges, Jessie, Her Majesty, Clara Penson, Pride of Leyton, and Muriel; Heavy Rose Edges, Mrs. Sharp and Mrs. Payne; Light Rose Edged, Favourite. 2nd, Mr. C. Turner, with a very fine lot of blooms, though apparently with some sameness of character. He had, of Heavy Red Edges, Dr. Epps, J. B. Bryant, and Exhibition; Light Red, Mrs. Bower and Thomas William; Heavy Purple, Zerlina and Muriel; Light Purple, Mrs. Nicholay; Heavy Rose, Edith D'Ombrain, Duchess and John Archer; Light Rose, Favourite and Mrs. Payne. 3rd, Mr. M. Rowan; 4th, Mr. F. Hooper. There were six competitors in this class.

In the class for twelve blooms, there were nine competitors, and here Mr. M. Rowan was 1st, with a very fine lot of blooms indeed, consisting of H. Red E. Brunnette, L. Red E. Mrs. Gorton, H.P.E. Muriel and Amy Robsart, L.P.E. Clara Penson, H. Rose E. Mrs. Sharpe, Edith D'Ombrain, and Mrs. Payne; L. Rose E. Nellie and Favourite; 2nd, Mr. T. E. Henwood, with H. Red E. Brunette; L. Red E. Thomas William, H.P.E. Mrs. Niven and Muriel, L.P.E. Juliette, Ann Lord, and Baroness Burdett Coutts; H. Rose E. Royal Visit, Mrs. Sharp, Mrs. Payne, and Lady Louisa; L. Rose E. Favourite; 3rd, Mr. J. Douglas; 4th, Mr. J. Lakin.

In the class for six blooms there were eight collections, and here Mr. C. Phillips, Reading, was 1st, with some very fine flowers, viz., H. Red E. John Smith, H.P.E. Zerlina, L.P.E. Ann Lord, H. Rose E. Mrs. Ricardo and Mrs. Payne, L. Rose E. Favourite; 2nd, Mr. W. L. Walker, Bulmershe Road, Reading, with H. Red E. Princess of Wales, L. Red E. Baroness Burdett Coutts, H.P.E. Mrs. Chancellor, H. Rose E. Mr. Sharp and Fanny Helen, L. Rose E. Seedling; 3rd, Mr. J. Rebbick, Southampton; 4th, Mr. J. J. Keen.

Single Blooms.—Here also a large number of flowers were shown. H. Red E.: Mr. J. Douglas was 1st and 2nd with Brunnette; 3rd and 4th, Mr. C. Turner, with Princess of Wales; 5th, Mr. T. E. Henwood, with Brunnette.

L. Red E.: 1st, Mr. J. Douglas, with Mrs. Gorton; 2nd, Mr. Rowan, with the same; 3rd, Mr. C. Phillips, with Thomas William; and 4th, with the same; 5th, Mr. J. Douglas, with Mrs. Gorton.

H.P.E.: 1st, Mr. T. E. Henwood, with Mrs. Niven; 2nd, Mr. C. Turner, with Mrs. Chancellor; 3rd, Mr. J. Douglas, with Calypso; 4th, Mr. J. Lakin, with seedling.

L.P.E.: Mr. J. Lakin has 1st, with Miss Lakin, a pretty, finished flower, quite distinct; Mr. C. Turner, being 2nd, with Baroness Burdett Coutts; 3rd, Mr. Henwood, with a seedling (Lakin); 4th Mr. H. W. Headland, with Pride of Leyton.

H. Rose E.: 1st, Mr. C. Turner, and 2nd, Mr. J. Douglas, with Mrs. Payne; Mr. Douglas being 3rd, with Mrs. Sharpe; and Mr. C. Turner 4th, with Edith D'Ombrain.

L. Rose E.: Favourite, staged by Messrs. Henwood, Turner, and Douglas, took the 1st, 2nd, and 4th prizes; Nellie, shown by Mr. Rowan, being 3rd.

The best yellow ground was Remembrance, from Mr. J. Douglas, and he was 2nd, with the same; Mr. C. Turner being 3rd and 4th, with Agnes Chambers.

Premier Picotee.—The premier Picotee was L. Red E. Mrs. Payne, shown by Mr. C. Turner.

Selfs and Fancies.—Some remarkably fine and striking flowers were shown in the classes for these. Mr. C. Turner was 1st, with splendid blooms, chief among them being Fred, maroon; Purple Emperor, purple; Dazzle, scarlet; Mrs. Payne, rose; Viscountess Downe, rose celestial; and Constance, pink; Germania and Wm. Harding, yellow; Comte de Chambord, and Lady Rose Molyneux, white. 2nd, Mr. J. Douglas, with fine unnamed blooms. 3rd, Mr. T. Hooper, Bath. There were fourteen stands of twelve blooms—Mr. T. E. Henwood, being 1st, with a superb lot, consisting of Black Knight, Joe Willett, Gladys, Colonial Beauty, Purple Emperor, Mrs. Rowan yellow self; Rose Celestial, Ada, Rob Roy, Sir F. Roberts, and Marchioness. Mr. M. Rowan was a good 2nd, having Florizel, Edith, Celia, Governor, Wm. Harding, Imperator, Joe Willett, Mr. R. Hole, and Mr. George. 3rd, Mr. R. Sydenham.

Yellow Grounds.—These were shown in superb character, Mr. C. Turner being placed 1st, with twelve remarkably fine flowers, consisting of Colonial Beauty, Almira, Dorothy, Agnes Chambers, and seedlings. Mr. J. Douglas was 2nd with Remembrance, Mrs. F. Whitbourn, Undine, Mrs. Walford, Ceres, Celia, Agnes Chambers, and seedlings. 3rd, Mr. T. Hooper, whose stand included a very fine yellow named Duchess of Albany. The class for six blooms was unfortunately overlooked, but the stands were numerous, and the flowers very good also.

Plants in Pots.—On this occasion several collections competed, Mr. C. Turner being placed 1st, with admirably grown and flowered plants, the yellow grounds being especially distinguishable—they were Dorothy Favourite, Colonial Beauty, Almira, Dazzle, Viscountess Douro, Terra-Cotta, Germania, Dr. Epps, Agnes Chambers, Rose Celestial, and Beauty of Chatham. 2nd, Mr. J. Douglas, with Mr. Sharp, Apollo, Victory, Favourite, Adonis, Mrs. Walford, Romulus, Irene, Terra-Cotta, Sybella, and Ruby. 3rd, Mr. H. W. Headland, Leyton.

Certificates of Merit were awarded to Remembrance, deep yellow Picotee, edged with pink; Ruby, a rich ruby self; and H. Rose E. Picotee, Calypso, distinct in colour, fine petal, and full substance; and to L. Red E. Picotee Souvenir de Headland, pure white ground, with good edge of bright red, from Mr. H. W. Headland.

Of miscellaneous exhibits, Messrs. Veitch & Sons, Chelsea, had three boxes of fine blooms, representing the various sections; Messrs. Paul & Son, Cheshunt, several boxes of blooms set up with their own foliage; Mr. W. Rumsey, Waltham Cross, boxes of Carnations; and Messrs. Dicksons (Limited), Chester, blooms of Mrs. Reynolds Hole.

NATIONAL ROSE.

Sheffield, *July* 18.—In fine weather, and with all the accompaniments that fine weather brings with it, a goodly company, and financial success, the National Rose Society held their grand provincial show for the year for the third time at Sheffield; the sun was bright, but it was tempered by a cool northerly wind, which made the perfection of weather for the staying powers of the Roses, and this was more especially grateful, for the Pavilion in the Sheffield Botanical Gardens, where the exhibition was held, is a low-roofed glass building, and had the day been such a one as that on which the show was held at the Crystal Palace, the Roses would have suffered immensely; as it was, they kept their freshness well throughout the day.

As in so many exhibitions this year, exhibitors have experienced sad disappointment owing to the earliness of the season—this has especially told on the Southern growers—and so it happened that the great Rose-growing firms of Ben. R. Cant, Cranston & Co., and Frank Cant, were unrepresented at Sheffield; while from the same cause many of our southern amateurs who make a point of attending the provincial show were unable to attend. The beautiful Tea Roses that East Anglia generally sends were absent, and thus, altogether, there was a deficiency as regards the number of the blooms staged; at the same time, there was no falling off in the quality of the flowers. There were some grand flowers shown both by professional and amateur growers, and that favourite class, Teas and Noisettes, was well represented; while a good deal of interest was excited by the appearance of the Irish firm of Dickson & Sons, Newtownards.

Instead of giving a regular and detailed list of the flowers shown, it may be as well to give simply the names in a few stands in the principal classes in both divisions. Thus, in the Challenge or Jubilee class, Messrs. Harkness & Sons were again victorious. They thus have held it for three years consecutively, and have again had the proud distinction of carrying off the Challenge Trophy in both North and South. Their blooms were Ulrich Brunner, Duchess of Bedford, May Quennell, Prince Arthur, Madame Eugène Verdier, Dupuy Jamain, Duchesse de Morny, Madame Hausmann, Countess of Rosebery, Auguste Rigotard, Alfred Dumesnil, Charles Darwin, Marie Baumann, Baroness Rothschild, Princess of Wales, Horace Vernet, The Bride, Sir Rowland Hill, Mad. V. Verdier, Lord Frederick Cavendish, Senateur Vaisse, Dr. Sewell, Niphetos, A. K. Williams, Princess Beatrice, Dr. Andry, Mdlle. Susanne Radeconaki, Alfred Colomb, Souvenir d'un Ami, Duc de Wellington, Innocente Pirola, Pierre Notting, Merveille de Lyon, Beauty of Waltham, Silver Queen, and Duke of Edinburgh; in this class, Messrs. Mack & Son were 2nd; and Messrs. A. Dickson & Son, 3rd.

In the class for seventy-two, there was a very close contest between Messrs. Harkness & Sons and Messrs. Paul & Son, and it was decided in favour of the former firm; they had, amongst their flowers, some

very excellent blooms, although it seldom happens that a stand of this number can be set up without there being no weak points; there were, however, but very few indifferent flowers in the following stand, which secured the 1st prize for the Yorkshire firm—A. K. Williams, Merveille de Lyon, Marie Baumann, Duchesse de Morny, Prince Arthur, Souvenir d'Elise Vardon, Alfred Dumesnil, Constantine Tretiakoff, Captain Christy, Duchess of Bedford, Silver Queen, Ulrich Brunner, Comtesse de Nadaillac, Countess of Rosebery, Souvenir de Paul Neyron, Duke of Teck, Fisher Holmes, Marie Cointet, Earl of Pembroke, Duchesse de Vallambrosa, Charles Darwin, Grace Darling, Mrs. Jowitt, Marguerite de St. Amand, Duc de Wellington, Reine du Monde, Harrison Weir, Heinrich Schultheis, E. Y. Teas, Comtesse d'Oxford, Duke of Edinburgh, Duc de Montpensier, François Michelon, Maréchal Vaillant, Catherine Mermet, Beauty of Waltham, Reynolds Hole, Caroline Kuster, Madame Susanne Radeconaki, Dupuy Jamain, Innocente Pirola, J. S. Mill, The Bride, Emilie Hausburg, Thérèse Levet, Comtesse de Serenye, Marie Rady, E. Verdier, Madame Charles Wood, Madame Chierot, Xavier Olibo, Marie Verdier, Alphonse Soupert, Pride of Waltham, Mrs. George Dickson, Gloire de Bourg la Reine, Perle des Jardins, Duchesse de Caylus, La France, Horace Vernet, Lady Mary Fitzwilliam, Alfred Colomb, Rosiériste Jacobs, Madame Willermoz, Antoine Ducher, Princess of Wales, Dr. Andry, Jean Ducher, Etienne Levet, and Louis Van Houtte.

In Division B., Messrs. Jeffries & Son, of Cirencester, were very successful, and secured 1st prizes in the class for thirty-six and eighteen trebles.

In the amateurs' class the Jubilee Challenge Cup was awarded to the Rev. J. H. Pemberton, of Havering-atte-Bowe, with an excellent box of blooms, containing Victor Hugo; this bloom secured the National Rose Society's Silver Medal for the best H.P. in the amateurs' class, and was probably the finest bloom of this variety ever exhibited. His other blooms were Earl of Dufferin, very fine; Duke of Edinburgh, Louis Van Houtte, Mdlle. Annie Wood, Prosper Langier, Pride of Waltham, Comte de Raimbaud, Alphonse Soupert, Charles Lefebvre, François Michelon, A. K. Williams, Countess of Rosebery, Horace Vernet, a splendid flower; Alfred Colomb, Marie Baumann, Auguste Rigotard, Duke of Teck, Captain Christy, Prince Arthur, Beauty of Waltham, Duchess of Bedford, and Prince Arthur. Mr. E. B. Lindsell, of Hitchin, was a good 2nd; and Mr. W. J. Grant, 3rd.

There were two silver cups, value ten guineas each, presented by the Master Cutler and the Mayor of Sheffield; the former was won by Mr. W. J. Grant, of Ledbury, and the latter by the Rev. F. R. Burnside, of Birch Vicarage, Hereford. Mr. Grant secured his with the following twenty-four varieties:—Capt. Christy, Alfred Colomb, Her Majesty, Constantine Tretiakoff, La France, Marie Baumann, Mdlle. Susanne Radeconaki, Senateur Vaisse, Ulrich Brunner, Marquise de Castellane, A. K. Williams, Madame Joseph Desbois, Duke of Edinburgh, Duchesse de Morny, Horace Vernet, Dr. Andry, Charles Darwin, Dupuy Jamain, Duchess of Bedford, Madame de Watteville, Prosper Langier, Madame Charles Crapelet, Prince Arthur, and Général Jacqueminot.

The Rev. F. R. Burnside won the Master Cutler's Cup with the following twelve Teas:—Madame Cusin, Madame Bravy, Hon. Edith Gifford, Comtesse de Nadaillac, Jean Ducher, Innocente Pirola, Souvenir d'un Ami, Marcellin Rhoda, Catherine Mermet, The Bride, Madame Hippolyte Jamain, and Jules Finger.

In the nurserymen's class, Mr. George Prince, of Oxford, showed Teas in the style usual to that renowned Tea-growing firm. His eighteen comprised Francesca Kruger, Alba rosea, Madame Cusin, Souvenir de Sarah Prince, a most beautiful flower; Catherine Mermet, Princess of Wales, Hon. Edith Gifford, Madame Lambard, America, Anna Ollivier, Souvenir d'un Ami, Marie Van Houtte, Adam, Rubens, Innocente Pirola, The Bride, Souvenir de Thérèse Levet, and Countesse Panisse.

The National Rose Society's Silver Medal for the best hybrid perpetual in the amateur classes was awarded, as before mentioned, to the Rev. J. H. Pemberton; and that for the best Tea or Noisette to E. B. Lindsell, Esq., for a fine bloom of Etoile de Lyon.

Amongst those amateurs who showed well we may mention Mr. Edward Mawley, the Secretary of the National Rose Society, who took 1st prize for a box of twelve varieties, and a 1st prize for six Teas; others who did not take the 1st place, although they showed exceedingly well, and gave promise of future triumphs, are the Rev. W. Foster Melliar and Mr. E. B. Lindsell, of Bearton, Hitchin, and had not the boxes of the former exhibitor been so roughly handed by the porters at the railway station, he might have secured a better position.

It only remains to add that the whole of the arrangements was under the special superintendence of Mr. W. G. Head, Garden Superintendent at the Crystal Palace, and that both the committee and Mr. Head managed to make all things work smoothly for the exhibitors, many of whom will remember, with pleasure, the third venture of the National Rose Society at Sheffield in 1889.

TUNBRIDGE WELLS.

Tunbridge Wells: *July* 10.—To describe the show proper somewhat in detail, in the large marquee devoted mainly to stove and greenhouse plants, the leading feature was the really grand collection of Tree Ferns, Palms, and flowering plants which occupied the central division, some of the former being from 12 to 16 feet in height. The collection of stove plants in flower, from the houses at Holmwood, which carried off the 1st prize, included two Allamandas (neither of them very fully flowered), an Erica Cavendishii, a Clerodendron, and a Bougainvillea, all well covered with flowers, two Ixoras, and Anthurium. All were beautifully grown plants, and they formed a very striking collection. The 2nd prize, eight exotic Ferns, came from the same establishment. The Crotons were, if possible, grander and more beautiful than were ever before seen at Tunbridge Wells show, and would not have been easy to surpass at any other. The best of these also came from Holmwood. The 2nd prize collection of stove plants was composed of three Crotons, a Phyllotænium, an Alocasia, a Cycas revoluta, a Phœnix reclinata, and a very fine Palm. Mr. Pope, the gr. at Holmwood, found the resources at his command sufficiently extensive to enable him to secure 1st honours for six ornamental foliage plants, in which class the Alocasias and Crotons did good service; and he was also the most successful exhibitor of six stove plants. Mr. Smith, gr. at Nevill Court, secured the 1st place in the class for specimen exotic Ferns.

Mr. Allen, gr. at Ashurst Park, was the only exhibitor of Caladiums, but his half-dozen were good enough to win in a large class, the plants being compact, healthy, and well-grown, and the variegation exceedingly beautiful. The zonal Pelargoniums were a very good lot, and the majority of them well covered with fine trusses of flower. Show and fancy Pelargoniums were particularly good for this period of the year; no doubt, most of the exhibitors could have produced much finer specimens six weeks or two months back. The majority of the Fuchsias were well-flowered, but the plants were not large, nor in other respects remarkable. Mr. Allen exhibited a fine collection of British Ferns, from Ashurst Park.

As usual, one of the most attractive departments in this portion of the exhibition was the groups of plants, in the arrangement of which much taste was displayed. The group from Nevill Court gained the post of honour; Mr. Dupond, gr. to J. Alchin, Esq., Rusthall, being a good 2nd. Mr. Webber, of Tonbridge, was again well to the fore in the competition with groups of Ferns; his design was most tasteful and elegant, and the representation of a gipsy's kettle formed of Ferns, slung on a tripod of rough sticks, while tinted foliaged Ferns underneath might, by a stretch of imagination, have represented a fire, was particularly effective. Mr. Dupond's was a very fine collection, and the only improvement in Mr. Webber's group that appeared possible would have been the introduction of one or two varieties from this group which were not found in that from the Tonbridge nursery. Both groups reflected credit upon the exhibitors.

Amongst the cut flowers, the Roses, as usual, occupied a leading position, though the number shown was below the average, a month's blazing sunshine having wrought much havoc among the "Queen of Flowers." Messrs. Bunyard, of Maidstone, gained the award for the best stand of forty-eight, which included many beautiful examples—notably, Alfred Colomb, La France, Maréchal Niel, Eclair, and others; but the competition with Messrs. Cheal & Son must have been wonderfully keen, and it was in the 2nd prize collection that the judges found the flower that carried off the Medal given by the National Rose Society for the best single flower in the class, which was given to a fine specimen of Lady Mary Fitzwilliam.

Mr. Roger Buston, of Hurstleigh, had an easy victory in the classes for amateurs, and a magnificent bloom of Alfred Colomb, which gained the Rose Society's Medal offered to amateur exhibitors, was found in his collection. It was generally voted the best Rose in the show.

The table decorations were twenty-six in number, and could not all be accommodated on one of the long tables extending down the centre of the marquee.

Fruit was fairly abundant, and the Grapes particularly the Black Hamburghs shown by Sir Julian Goldsmid's gardener (Mr. Hopgood), were really magnificent; Melons, Peaches, and Nectarines were all very fine, the latter more especially. Strawberries, notwithstanding the prolific season, formed only a meagre show; and there was but one collection of fruit—a very beautiful one—from Somerhill, while Tomatos were both abundant and good.

The cottagers' tent was both interesting and attractive—interesting on account of the generally excellent quality of the exhibits and the keenness of the competition, and attractive from a magnificent collection of Gloxinias, the finest of which came from Mrs. Barnett's, Nevill Park. A stand of cut Begonias, not for competition, shown by Messrs. Laing & Sons, of the Forest Hill Nursery, attracted much attention, though not more than they deserved, many of them being surpassingly beautiful, and giving additional proof of the readiness of this class of plant to lend itself to the cultivator's skill. Mr. Charlton, the well-known local florist, had also some very fine deep-coloured Begonias, which commanded a large share of admiration.

Two features of great interest and attractiveness yet remain for notice. It will be remembered that last year was conceived the happy idea of holding a "Floral Fair" in connection with the show in aid of that deserving institution, the Eye and Ear Hospital, and owing to its success this was repeated on this occasion. A small marquee was set apart for the exhibition of the beautiful floral wares and luscious fruits supplied by the generosity of many friends.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending July 22.	Temperature. Accumulated. Above 42°, for the Week.	Temperature. Accumulated. Below 42°, for the Week.	Temperature. Accumulated. Above 42°, difference from Mean since Jan. 1, 1889.	Temperature. Accumulated. Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1889.	Rainfall. Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 —	69	0	+ 181	+ 4	2 —	134	20.3	14	24
2	4 —	81	0	+ 65	+ 5	2 +	106	12.9	19	30
3	4 —	92	0	+ 47	+ 7	1 +	96	11.8	16	29
4	5 —	109	0	+ 29	+ 112	2 —	102	13.8	42	30
5	5 —	99	0	+ 41	+ 60	2 —	96	16.2	43	28
6	3 —	117	0	+ 84	+ 75	3 +	101	12.9	39	29
7	3 —	87	0	+ 108	— 23	1 —	111	20.6	24	32
8	5 —	92	0	+ 80	— 1	1 +	102	14.9	21	31
9	4 —	104	0	+ 18	+ 88	1 +	100	17.9	48	36
10	5 —	85	0	+ 57	— 53	2 +	123	18.3	17	27
11	4 —	99	0	+ 27	— 14	3 +	110	17.8	35	34
12	2 —	122	0	+ 105	— 16	2 +	108	14.4	56	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 22, is furnished from the Meteorological Office:—

"The *weather* has continued in an unsettled condition in all parts of the kingdom. Rain has fallen rather frequently in all districts, and has been accompanied by occasional thunder and lightning. Over central, southern, and eastern England, however, some fine clear intervals have been experienced.

"The *temperature* has been below the mean in all districts, the deficit in most places having been as much as 3° to 5°. The highest of the maxima were recorded on irregular dates, and were very low for the time of year, having ranged from 64° in 'Scotland, N.,' to 71° in 'England, S.,' 'England, S.W.,' and 'Ireland, S.' The absolute minima, which were also registered on varying dates, were as low as 38° to 40° in Scotland, 37° to 45° in England, and 40° in Ireland. In the 'Channel Islands' the lowest reading was 49°.

"The *rainfall* has been a little less than the mean in the north and west of Scotland, and over central and eastern England, but rather more in all other localities.

"*Bright sunshine* has been more prevalent in some parts of England than it was last week, but shows a decrease in Ireland, Scotland, and the northern parts of England. The percentage of the possible amount of duration ranged from only 14 in 'Scotland, N.,' 16 in 'England, N.E.,' and 17 in 'Ireland, N.,' to 43 in the 'Midland Counties,' 48 in 'England, S.W.,' and 56 in the 'Channel Islands.'"

MARKETS.

COVENT GARDEN, July 25.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

HOTHOUSE fruit in good supply, with prices easier. Outdoor goods coming light, maintaining their values. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Cherries, ½-sieve	6 0–	12 0	Lemons, per case	12 0–	21 0
Currants, Black, ½-sieve	4 0–	6 0	Peaches, per doz.	6 0–	15 0
— Red, ½-sieve	3 6–	4 6	Pine-apples, Eng., lb.	1 6–	3 0
Gooseberries, ½-sieve	3 0–	3 6	— St. Michael, each	2 0–	6 0
Grapes, per lb.	0 6–	2 6	Strawberries, per lb.	0 4–	1 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, English, per 100	5 0–		Mushrooms, punnet	1 6–	
Beans, Jersey French, per lb.	0 6–		Mustard and Cress, punnet	0 4–	
Beet, red, per dozen	1 0–	2 0	Onions, per bunch	0 5–	
Carrots, per bunch	0 6–		Parsley, per lb.	0 6–	
Cauliflowers, each	0 6–		Peas, per quart	1 3–	
Celery, per bundle	1 6–	2 0	Potatos, new Jsy., lb.	0 3–	
Cucumbers, each	0 6–	0 9	Rhubarb, bundle	0 6–	
Endive, per dozen	2 6–		Shallots, per lb.	0 6–	
Green Mint, bunch	0 4–		Spinach, per bushel	3 6–	
Herbs, per bunch	0 4–		Tomatos, per lb.	1 0–	
Leeks, per bunch	0 3–		Turnips, per bunch, new	0 5–	
Lettuce, per dozen	1 6–				

POTATOS.—Foreign supplies finishing up badly, and very low price, most samples diseased. Home arrivals are now heavy: Kidneys, 3*s.* 6*d.* to 4*s.* 6*d.* per cwt.; Beauty of Hebron, 3*s.* to 4*s.*; Early Rose, 3*s.* to 3*s.* 6*d.* The late heavy rain is causing disease to spread in some districts. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	18 0	Ficus elastica, each	1 6–	7 0
Arum Lilies, p. doz.	6 0–	12 0	Fuchsias, dozen	3 0–	8 0
Balsams, doz.	4 0–	6 0	Hydrangea, per doz.	9 0–	18 0
Begonias, dozen	4 0–	12 0	Lilium lancefolium, per dozen	12 0–	24 0
Cactus, per dozen	9 0–	18 0	— auratum, doz.	12 0–	30 0
Calceolarias, dozen	4 0–	9 0	— longefolium, doz.	12 0–	24 0
Crassula, per dozen	12 0–	30 0	Lobelias, dozen	3 0–	5 0
Cyperus, per dozen	4 0–	12 0	Marguerites, doz.	6 0–	12 0
Dracæna terminalis, per dozen	30 0–	60 0	Mignonette, doz.	3 0–	6 0
— viridis, per doz.	12 0–	24 0	Musk, dozen	2 0–	4 0
Erica, various, doz.	12 0–	30 0	Nasturtiums, doz.	3 0–	5 0
Euonymus, in var., per dozen	6 0–	18 0	Palms in var., each	2 6–	21 0
Evergreens, in var., per dozen	6 0–	24 0	Pelargoniums, per dozen	6 0–	15 0
Ferns, in var., doz.	4 0–	18 0	— Ivy-Leafed, doz.	3 0–	4 0
Foliage plants, various, each	2 0–	10 0	— scarlet, doz.	2 0–	4 0
			Rhodanthe, per doz.	4 0–	6 0
			Stocks, dozen	4 0–	6 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0–	4 0	Marguerites, 12 bun.	3 0–	6 0
Arum Lilies, 12 blooms	2 0–	4 0	Mignonette, 12 bun.	2 0–	4 0
Bouvardias, per bun.	0 6–	0 9	Pansies, 12 bun.	1 0–	2 0
Cactus blooms, doz.	1 6–	2 0	Pelargoniums, 12 spr.	0 6–	1 0
Carnations, 12 bun.	3 0–	6 0	— scarlet, 12 spr.	0 3–	0 0
— 12 blooms	1 0–	3 0	Pinks (var.), 12 bun.	2 0–	4 0
Cornflowers, 12 bun.	1 0–	4 0	Primulas, dbl., 12 sp.	0 9–	1 0
Delphinium, 12 bun.	3 0–	6 0	Rhodanthe, 12 bun.	4 0–	6 6
Eucharis, per dozen	3 0–	6 0	Roses, Tea, per doz.	0 6–	2 0
Gardenias, 12 blooms	2 0–	4 0	— coloured, dozen	2 0–	4 0
Gladioli, 12 bun.	2 0–	9 0	— red, per dozen	0 4–	1 0
— 12 sprays	1 0–	2 0	— Safrano, dozen	0 6–	1 0
Heliotropes, 12 spr.	0 6–	1 0	Stephanotis, 12 spr.	2 0–	4 0
Iris, 12 bunches	4 0–	12 0	Stock, 12 bunches	3 0–	6 0
Lavender, 12 bun.	6 0–	8 0	Sweet Sultan, 12 bun.	4 0–	6 0
Lilium, vari., 12 bls.	1 0–	5 0	Sweet Peas, 12 bun.	2 0–	6 0
Maiden Hair Fern, 12 bun.	4 0–	9 0	Tuberoses, 12 blms.	0 6–	1 0

Orchid bloom in variety, fairly good supply.

SEEDS.

LONDON: *July* 24.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., London, report to-day's market featureless. French Trifolium offers at moderate figures. In Rapeseed the tendency is still downwards. For sowing Mustard there is a small inquiry on former terms. More money is asked for new French Trefoil, cash. The new crop of Blue Peas is badly spoken of; good samples of 1888 crop have now become scarce. New Haricot Beans are now selling. For Hempseed an advance of 1*s.* per quarter is asked.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended July 20:—Wheat, 29*s.* 4*d.*; Barley, 21*s.* 1*d.*; Oats, 19*s.* 3*d.* For the corresponding week in 1888:—Wheat, 32*s.*; Barley, 19*s.* 1*d.*; Oats, 17*s.*

FRUITS AND VEGETABLES.

SPITALFIELDS: *July* 24.—English Apples, 5*s.* to 7*s.* per bushel; Gooseberries, 3*s.* to 4*s.* 3*d.* per half-sieve; Black Currants, 5*s.* to 5*s.* 6*d.* do.; White Currants 5*s.* 6*d.* to 6*s.* do.; Red Currants, 4*s.* to to 4*s.* 6*d.* do.; black Cherries, 6*s.* 6*d.* to 8*s.* do.; white Cherries, 10*s.* to 12*s.* do.; Raspberries, 20*s.* to 22*s.* per cwt.; English Tomatos, 4*s.* 6*d.* to 6*s.* per 112 lb.; foreign Tomatos, 9*d.* to 1*s.* per box; pickling Walnuts, 3*s.* to 3*s.* 6*d.* per half-sieve; Cabbages, 3*s.* to 6*s.* per tally; Cauliflowers, 2*s.* to 4*s.* per dozen; French Beans, 5*s.* to 6*s.* per bushel; scarlet Beans, 5*s.* 6*d.* to 6*s.* 6*d.* do.; Broad Beans, 1*s.* 9*d.* to 2*s.* 3*d.* do.; do., 2*s.* 6*d.* to 3*s.* 6*d.* per sack; Peas, 2*s.* 9*d.* to 3*s.* 6*d.* per bushel; do., 5*s.* to 6*s.* per sack; Vegetable Marrows, 1*s.* 3*d.* to 1*s.* 9*d.* per dozen; frame Cucumbers, 2*s.* 6*d.* to 3*s.* do.; natural do., 6*d.* to 8*d.* do.; spring Onions, 3*s.* to 4*s.* per dozen bunches; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* to 1*s.* 6*d.* do.; Cos Lettuce, 9*d.* to 1*s.* per score; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; Leeks, 2*s.* to 3*s.* per dozen; Lisbon Onions, 5*s.* 6*d.* to 6*s.* per case; Portuguese Onions, 8*s.* to 8*s.* 6*d.* do.; Mangels, 19*s.* to 20*s.* per ton; Carrots, 2*s.* to 3*s.* per dozen bunches.

STRATFORD: *July* 23.—Quotations:—Cabbages, 2*s.* to 4*s.* per tally; Mangels, 20*s.* to 22*s.* per ton; Swedes, 20*s.* to 22*s.* do.; Onions, Oportos, 9*s.* to 10*s.* per cwt.; do., Egyptian, 4*s.* to 4*s.* 6*d.* per bag; Gooseberries, 4*s.* to 4*s.* 6*d.* per half-sieve; Cherries, 10*s.* to 12*s.* do.; Raspberries, 2*s.* per 5 lb.; Tomatos, 7*d.* to 1*s.* per box; Pears, 3*s.* 3*d.* per molley; Plum Gages, 4*s.* per box; Cucumbers, Dutch, 1*s.* 3*d.* per dozen; do., frame, 3*s.* do.; Marrows, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Pears, 4*s.* to 5*s.* 6*d.* per bag; white Currants, 3*s.* per half-sieve; red Currants, 5*s.* do.; black Currants, 6*s.* 6*d.* do.; Apples, 2*s.* 6*d.* to 4*s.* do.; Carrots, 2*s.* 6*d.* per dozen bunches; Onions, 3*s.* to 4*s.* do.

POTATOS.

BOROUGH AND SPITALFIELDS, *July* 23.—Large supplies and easier prices. Myatt's £3 to £5 10*s.*; Hebrons, £3 to £4; Jersey and French flukes, £3 to £4 per ton.

SPITALFIELDS: *July* 24.—Quotations:—Jersey kidneys, 60*s.* to 70*s.*; do. flukes, 70*s.* to 80*s.*; Cherbourg kidneys, 60*s.* to 70*s.*; do. flukes, 70*s.* to 80*s.*; St. Malo kidneys, 60*s.* to 70*s.* Old: Myatt's kidneys, 60*s.* to 80*s.*; Regents, 80*s.* to 90*s.*; Hebrons, 70*s.* to 80*s.*; Early Rose, 60*s.* to 70*s.* per ton.

STRATFORD: *July* 23.—Quotations:—Jersey flukes, 60*s.* to 80*s.*; English kidneys, 60*s.* to 80*s.*; Hebrons, 60*s.* to 70*s.*; Early Rose, 50*s.* to 63*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime old Clover, 120*s.* to 144*s.*; new, 85*s.* to 110*s.*; inferior, 45*s.* to 75*s.*; best hay, 78*s.* to 112*s.*; inferior, 20*s.* to 50*s.*; straw, old, 40*s.* to 45*s.*; do. new, 24*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

BALSAM AND ARALIA: *A. G. R.* We could discover no trace of fungus or insect, and should think that the crumpled and disfigured appearance of the leaves is due to inherited weakness in the young plants of Aralia, to impoverished soil, or to the use of a soil not consisting of, or containing enough life-giving ingredients; and this want made worse by the use of sand, and probably old used-up potting soils mixed with what is new. In the case of the Balsams, it is a matter of soil, ventilation, and manuring, &c. Give a more generous treatment, and some amount of bottom-heat, and the appearance will disappear. Get Aralia cuttings from a new and healthy source; also Balsam seeds from a new source.

CACTUSES: *G. A.* By a clerical error the names of the varieties of Phyllocactus got attached to the wrong initials. See *B. S.* in Names of Plants in our issue for June 22 last.

CREOSOTED WOODWORK OF CONSERVATORY: *Enquirer.* The woodwork having been painted over, there is no means by which the creosote can be eradicated from the wood without removing the paint. And if this can be done by a painter's lamp, and the wood rubbed down well afterwards with pumice-stone, following this with the usual coat of priming of thin red-lead, and then two coats of lead-paint of any approved colour laid over this, no further harm to the plants would be likely to happen. If this could be done now—the plants being, of course, removed elsewhere—and the house left open for some weeks, so that it would get well aired, it would be an advantage. It is the inside of the conservatory only that will require this mode of treatment.

DISEASED CALCEOLARIAS AND PANSIES: *J. H.* Mr. Worthington Smith, to whom we sent the specimen, says:—"I have microscoped every part of these plants—leaves, stems, rootstock, rootlets—and nothing in the way of a parasite is visible. There is no fungus, or fungus-spore, or nematode, or egg, or trace of insect. The roots, however, appear to me to be in an unsatisfactory state; rootlets far too few in number, wirey, and dry, and dead. It appears to me that the rootlets strike work, possibly because an attempt is made to grow the plants in an unnatural way. The upper parts perish because the roots are dead. I have never seen anything attacking the rootlets, large or small. I think all Calceolarias are not equally liable to go off. Possibly some of these plants do not approve of cutting, or something of the kind. Extended observation might throw some light on the matter.

DOUBLE ROOFS: *C. A.* Not necessary in this climate, and detrimental to all plants but Ferns in any climate. Wooden shutters, or split Bamboo lath blinds, fastened together with waxed cord or wire, are preferable as protection against cold in very severe weather, or, indeed, at almost any time at night during the winter. The condensation of internal moisture on the glass is arrested, much to the advantage of the plants, and the fuel burnt is much less.

EAST LOTHIAN STOCK: *F. W.* For spring and summer flowering the seed must be sown in a cool frame from June to the end of August, the young plants being pricked out in open beds from the early sowings, and into boxes from the later. They should be in their wintering-pots before the middle of September.

ERRATUM. In the report of the Scientific Committee, given at p. 19, it was stated that Ceniostoma coffeellum existed in Ceylon. This is a mistake, the insect in question affects the Coffee plantations of the West Indies, but has not, hitherto, occurred in those of Ceylon.

FISH-BONE THISTLE: *F. W.* Sow in August, prick off as soon as large enough to be handled, and pot singly into deep 60's in September. Keep them

in a greenhouse until March, when they should be shifted into larger pots, and grown in a pit close to the glass, so as to keep them stocky. Seed may be sown early in spring, but the plants will not be very effective until the season is well advanced.

Hybrid Masdevallia: *T. H.* Any plant that has an unusual degree of vigour, as hybrids notoriously have, may produce a branched spike, or an increased number of flowers. If you lay stress on the word "hybrid," we cannot give you chapter and verse, but, in any case, the fact is by no means a remarkable one.

Insects: *J. C.* The moth sent with eggs deposited in the box is the common garden tiger moth, Arctia cajæ. Its hairy caterpillar is known by the name of the Woolly Bear.—*G. W.* Your caterpillar had already formed and encased itself in its hard cocoon before reaching us, but we have no doubt that it was that of the Puss moth (Cerura vinula), the ordinary food of which is the Poplar. *I. O. W.*—*Euphorbia.* We can find no insects under the bark of the stem of your Euphorbia. Please send specimens in a corked quill or pill-box to Professor Westwood, Oxford. *W.*

Lettuce: *J. S.* Appears to be Paris White Cos. Send again a full-grown plant; the one sent was much too young for the name to be determined.

Names of Plants: *F. Carr.* Alstrœmeria Ligtu, L., or an allied species.—*W. H. T., Norwich.* Spiræa canescens. — *D. H.* 1 and 4, Spiræa Douglasii; 5, 6, Spiræa Nobleana; 7, S. japonica. — *K.* 1, Dianthus Seguieri. — *M. C.* 3 and 4, two forms of Spiræa Douglasii; 5, Berberis concinna; 6, Rhododendron anthopogon. — *M. C., Hetherset.* Saxifraga cymbalaria. — *W. K.* 1, Dianthus plumarius; 2, Verbascum nigrum; 3, 4, 5, Antennaria dioica. — *J. W. Oliver.* 1, Securigera atlantica; 2, Potentilla pedata; 3, P. hirta; 4, we cannot name from the scrappy material sent; 5, Echinops sphærocephalus; 6, Carduus cernuus. Why not send good specimens? — *T. V.* 1, Sedum spurium; 2, Linum flavum; 3, Lysimachia vulgaris; 5, Rubus odoratus; 6, Œnothera Youngi; others shrivelled beyond power of recognition. — *W.* Orchis maculata apparently, but shrivelled; may be O. conopsea.—*E. G.* Broom-rape (Orobanche minor); very common as a parasite on Clover and other plants. — *A. J.* Origanum Sipyleum. The fungus (smashed) seems to be the young state of the Stinkhorn—decidedly objectionable. — *H. S.* Coccoloba platycladon. — *W. & J. B.* Cut-leaved Beech (Fagus sylvatica laciniata). Beetle-trap very efficacious. — *W. T.* Melilotus officinalis. — *Q. R.* 2, Tradescantia virginica; 3, Chrysanthemum lacustre; 4, Epilobium hirsutum; 5, Veronica longifolia; 6, Campanula carpatica; 7, Lythrum salicaria; 8, Stenactis speciosa; 9, Achillea Ægyptica; 10, Monarda didyma; 11, Spiræa Douglasi; 12, S. Fortunei.—*W. E.* 1, Hypochæris radicata, Hawkbit; 2, Spiræa ariæfolia.—*E. D. L.* Spiræa Fortunei; 2, Campanula glomerata alba; 3, C. glomerata; 4, Eryhgium, next week; 5, Lysimachia brachystachys; 6, Carduus, not known; 7, Campanula, next week.—*C. B.* 1, Selaginella umbrosum; 2, S. Wildenowi; 3, S. apoda; 4, Phygelius capensis; 6, Valeriana officinalis; 7, Lysmachia vulgaris; 9, Veronica salicifolia. C. B. should attach his labels more firmly.—*J. H. J.* Nectarine Hunt's Tawny; early variety Peach, probably Grosse Mignonne, but we cannot name Peaches with certainty, without being furnished with the leaves, and a description of the flowers.—*C. W. K.* Cattleya guttata, as far as can be told from a withered flower.

Pansies: *Watkins & Simpson.* Very pretty. Have seen nothing just like them before. Would make pretty beds and lines, or for pots.

Vine Disease: *W. Milne.* The disease has not as yet appeared in this country, so far as we know, and it appears only to have attacked Vines in the open. It is noticed in our issue for July 7, 1888, where methods for its destruction are given, and it is there said to be allied to the fungus that causes the Potato-disease.

Potatos: *Foliejon.* We forwarded the tubers to Mr. C. B. Plowright, of King's Lynn, who replies as follows:—"Two of the tubers are destroyed by wet-rot, while the third is also affected. There are upon one of the tubers indications of the presence of Phytophthora, but microscopic examination failed to demonstrate the presence of its mycelium, neither were any conidia produced on the cut surface. In order to be quite sure, however, a series of cultural experiments have been undertaken. The gas-lime is innocent of this disease, the bacterium of the 'wet-rot' being the 'guilty party.'"

Pyrethrums: *Water Jug.* Move in September, or in April, at which times you may propagate them by division of the root. If done early in September, autumn removal is better than spring. Let the position they are placed in be warm and well-drained, and a raised bed or border is better than a flat one.

Raspberries: *G. L.* No. 1, Red Antwerp; 2, Semper Fidelis.

Tennis Court: *A Subscriber.* If the space to be occupied by the court consists of firm ground, take out about 6 inches in depth of the staple, make the bottom level, and then fill in with broken stone and brickbats; and after making the surface of this level by ramming and hammering, pour over it, to the depth of 1½ inch, concrete made with one part (by measure) of Portland cement, two of gravel with the fine parts sifted from it, and coarse sand. This should be mixed to a thin consistency with water, and before it is set lay upon it a coat of Portland cement and fine sand in equal proportions half an inch thick, and make quite smooth with a trowel, shovel, or piece of board. A slight inclination of the surface should be given it towards the side, so that rain-water will run off quickly into the gravel or turf at the sides, or into properly made channels at the sides. The whole court should be framed with hard wood boards, stone or brick on edge, or something durable and neat to give a finish to it, and prevent water getting beneath the materials, which might end in the frost bursting up the surface in places.

Tomatos Diseased: *J. H. N.* The Tomatos are attacked by a fungus named Cladosporium fulvum. You will find a full and illustrated account of this pest in the *Gardeners' Chronicle* for October 29, 1887, p. 532. *W. G. S.*

Tomatos not Setting, &c.: *P. R.* Your plants may fail to set because the temperature of the house is maintained at too high a figure. During the setting the blooms should have the pollen distributed over them by means of a small brush (pencil), and a drier air kept in the house. If you allowed one fruit to swell while the main crop of any particular plant was still in a very small stage, that fruit would keep the lead to the disadvantage of all the other fruit on that plant; and it might be best to remove it. Get Mr. W. Iggulden's little book, *The Tomato, its Culture and Uses.* It is sold at the *Journal of Horticulture* office, 171, Fleet Street, E.C.

Vines: *G. H.* Waltham Cross is a very late-ripening Grape, and should be grown with the Muscats, or under similar treatment. It will not succeed in your house along with Black Hamburgh and Black Alicante. It is one of the best of late Grapes; not very fine flavour, but firm in flesh, and keeping well.

Communications Received.—Munro & Ferguson.—H. de la Hooke.—Messrs. Dickson.—J. S.—P. L. S.—W. K.—F. A.—E. J.—G. Bush (shortly).—T. H.—W. Sowerby.—G. W.—W. M. B.—J. M. Wood, Natal (many thanks).—F. W. B. (many thanks: it shall be put in hand at once).—J. A.—J. B.—W. W.—Paris.—W. E.—H. Cannell, E. Bland, W. Shingler, and R. D. Blackmore (thanks, but too late).—T. Butcher.—I. O. W. (thanks).

Layering Carnations.—The earlier this operation is performed in August the better. If a little light soil is placed around and underneath the plants, with a surfacing of sand, the layers will root more quickly than would otherwise be the case. In layering, remove a few of the bottom leaves with a knife, and cut the stem half-way through from the lower joint in an upward direction for about an inch, then bend the stem of the plant down to the prepared soil, inserting the tongue formed by the upward cut therein, and securing it with a crooked peg. In this way a few hundred layers may be made in a few hours; care, however, should be taken not to cut the stem too far through, and not to break the grasses operated on in the act of bending it downwards. Water should be given through a rose to settle the soil about the layers, repeating the application every afternoon in dry weather until roots are formed in numbers. *H. W. Ward.*

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GENUINE ORCHID PEAT, 8s. 6d. per sack; 5 sacks, 40s.; BEST BROWN FIBROUS PEAT, 5s. per sack; 5 for 22s. 6d. BLACK FIBROUS PEAT, 4s. 6d. per sack; 5 for 20s. COARSE SILVER SAND, 1s. 6d. per bushel; 14s. half ton; 24s. per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1s. per bushel. Tobacco Cloth or Paper, 1s. per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c. Write for Price List.
Terms strictly Cash with order.
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Mr. ELWORTHY, *Nettlecombe Court, writes:*—
"I have tried two factors, but I find yours much the most destructive." For full particulars apply to
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CHEMICAL WORKS, BARROW-ON-HUMBER, HULL.

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Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of
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1 Cwt., and Oil Mixture, Free to all Stations.
Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.
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Cocoa-nut Fibre Refuse, fresh, 1 sack, 1s. 3d.; 10 sacks for 12s.; 15 for 17s.; 20 for 20s.; 30 for 28s.; 2 ton truck free on rail, 30s. Best Brown Fibrous Kent Peat, 5s. per sack; 5 for 22s. 6d.; 10 for 35s. Best Black Peat, 4s. 6d. per sack; 5 for 20s. Coarse Bedfords' Sand, 1s. 6d. per bushel; 14s. half ton; 25s. per ton. Potting Composts, 5s. per sack. Genuine Peruvian Guano, Crushed Bones, Fertilisers, &c. Fresh Sphagnum Moss, 2s. 6d. per bushel; 6s. per sack. Charcoal, 2s. 6d. per bushel; 8s. per sack. Flower Sticks, painted and unpainted; Labels, and Bamboos. Best Raffia, 1s. per lb.; 7 lb. for 5s. 6d. Pure Leaf Mould, Peat Mould, and Yellow Fibrous Loam, each 1s per bushel; 3s. per sack. Spécialité Tobacco Paper, and Cloth, 1s. per lb.; 28 lb. for 26s. Mushroom Spawn, best quality, 4s. per bushel. Russia Mats, 10s. to 18s. per dozen. Virgin Cork, 28 lb., 5s. 6d.; 56 lb., 10s.; 1 cwt., 17s. Write for free Price List.—W. HERBERT AND CO., Hop Exchange, Southwark Street, London, S.E. (near London Bridge).

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For GREENHOUSE or GARDEN.

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A CURE AT LAST FOR THIS DREADFUL PEST.
Eucharis, treated according to the directions, and grown with ordinary cultural care, become healthy in a short time, as a trial will convince. *Numerous Testimonials.*
Prices:—¼ pint, 1s. 6d.; 1 pint, 2s. 6d.; 1 quart, 4s. 6d.; ½ gallon, 7s. 6d.; 1 gallon, 12s. 6d.
Ask your seedsman for it, or apply to
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

SAFE, SURE, CHEAP, and RELIABLE.

No Mealy Bug
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No Red Spider
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No Insect Pests *of any description.*

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The surest, safest, most effective, and economical Insecticide ever invented for use alike in the Greenhouse, Flower and Kitchen Gardens.
1 gallon makes 160 gallons of Insecticide.
On Receipt of Sixpence in Stamps we will post free, to any address, a sample ¼-pint tin—a practical trial will speak louder than words.
Testimonials constantly received.
Prices, delivered free to any address:—1 pint, 1s. 6d.; 1 quart, 2s.; ½-gallon, 3s. 1 gallon, 4s. 6d.—tins free. 4 gallons for 8s.—Tin to be returned. Larger quantities at reduced rates. Sole proprietors—
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Manufacturing Chemists, **Bridgnorth.**

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CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.
EPPS & CO. are now prepared to offer **PEAT**, as above, of first-class quality, at lowest prices. Prices on application. Depôt for HORTICULTURAL SUNDRIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA-FIBRE REFUSE, CHARCOAL, and ARTIFICIAL MANURES.
PEAT MOSS LITTER.
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COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.: 4-bushel bags, 4d. each.
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COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
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WEED KILLER
CHEAPEST & BEST

For Destroying Weeds on Garden Walks, Carriage Drives, Stable Yards, &c., also for Killing Plantain on Lawns. Saves more than twice its cost in Labour. No Smell.
One application will keep the Walks clear of Weeds for at least Twelve Months.
Used in the CRYSTAL PALACE GARDENS, the ALEXANDRA PALACE GROUNDS, the CAMBRIDGE BOTANIC GARDENS, and many other Public and Private Gardens.
Mr. W. G. HEAD, Superintendent of the Crystal Palace Gardens, says:—"We were so satisfied with your Weed Killer and its price, that we have used it absolutely. I have every confidence in recommending it."
Highly Commended by the Judges at the Alexandra Palace Rose Show, 1889.
Price:—1 Gallon, 2s. (tin included); 5 Gallons, 1s. 6d. per Gallon; 10 to 20 Gallons, 1s. 4d. per Gallon.
Carriage paid on 10 Gallons and upwards.
Used in the proportion of 1 gallon to 25 gallons of water, and applied with an ordinary watering can.
SOLE PROPRIETORS AND MANUFACTURERS—**The AGRI-HORTICULTURAL CHEMICAL COMPANY, Tunbridge, Kent, and Carlton Street, Bolton, Lancashire.**
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THE
"PERFECT" WEED KILLER

TRADE MARK. SWIFT & SURE.

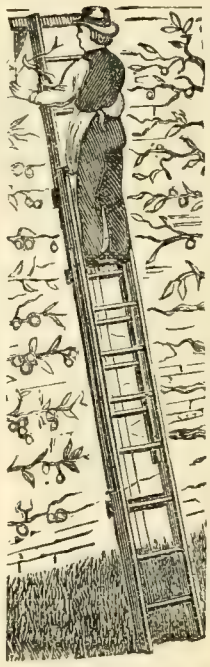
Maintains its Superiority over all Rivals
for permanently destroying vegetation on Walks, Carriage Drives, Ash Tennis Courts, Stonework grown green, &c.
Used at Kew Gardens, Royal Horticultural Gardens, &c., &c.
COMPLETE SATISFACTION GUARANTEED
to all using WEED KILLER bearing our Trade Mark, without which none is genuine. *Refuse Imitations.*
PRICE—Gallon 2/, 5 gal. 1/9, 10 gal. 1/6, 40 gal. 1/4 per gal.
SPECIAL QUOTATIONS FOR QUANTITIES.
Carriage paid 5 gals. and upwards. Trial sample post free.



DISTRIBUTOR for "Perfect" Weed Killer.
Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 ins. wide. Price £4 net on rail Glasgow.
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SOLD BY SEEDSMEN AND FLORISTS.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.
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CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

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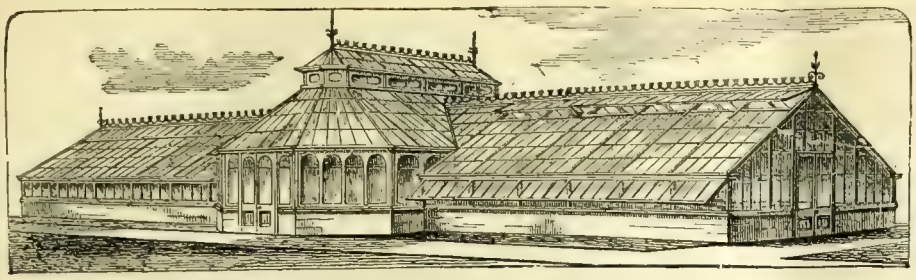
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"FRIGI DOMO"
REGISTERED TRADE MARK
FOR PRICE LIST & PARTICULARS ADDRESS
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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

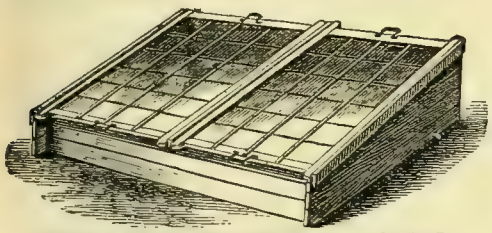
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R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

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1-light frame, 4 ft. by 6 ft.	Carriage and Packing Cases FREE.	2	0	0
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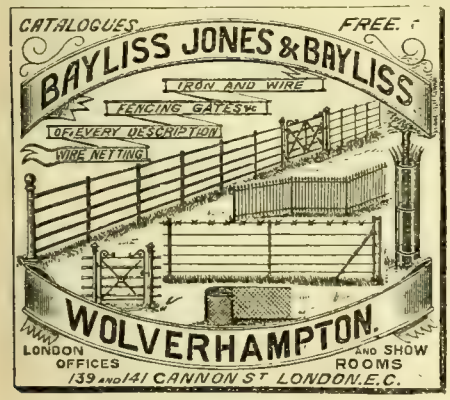
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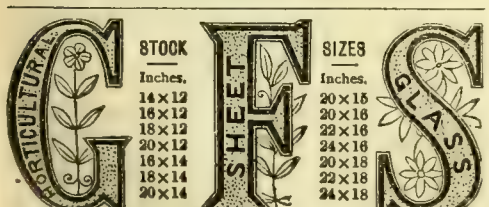
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Hothouse Builders and Engineers, Royal Horticultural Works,

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London Agent—Mr. H. SKELTON, Seedsman, &c., 2, Holloway Road, N.





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LEAD, GLASS, OIL, and COLOUR MERCHANTS,

34, St. John Street, West Smithfield, London, E.C.

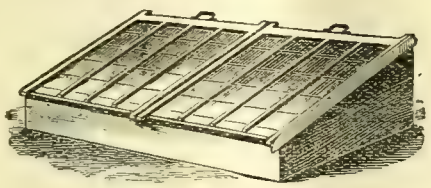
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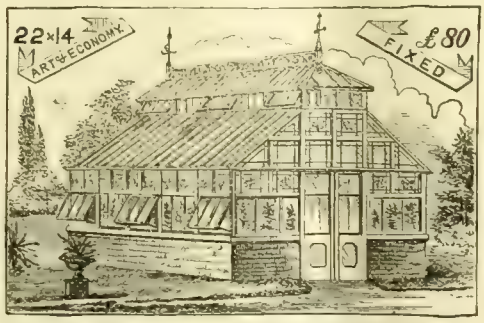
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1 Light Frame,	4 ft.	by 6 ft.	Cash Prices, Carriage and Packing FREE.	£2 0 0
2 " "	8 "	by 6 "		3 0 0
3 " "	12 "	by 6 "		4 5 0
4 " "	16 "	by 6 "		5 10 0
5 " "	20 "	by 6 "		6 15 0
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Glasshouses of every description, in Wood or Iron, erected in any part of the kingdom. First-class workmanship and the very best materials at the lowest possible prices.

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Putty, 6s. 6d. per cwt.; White Lead, genuine, 21s.; Our Specialty, 17s. 6d. per cwt.; Paints ground in Oil, Stone Ochre, 20s.; Oxford Ochre, 24s.; Green, 16s.; Black, 16s. per cwt.; Varnish, from 5s. 6d. per gal. Paints and Varnish at very low prices. ⅞ Flooring at 7s. 3d. per square; Matching at 5s. 9d.; 3×9 at 2½d. per foot run; 2×4 at ⅝d. Doors, Mouldings, Greenhouse Bars, Ironmongery Goods, &c. Full Price List on application to **THE CHEAP WOOD COMPANY,** 72, Bishopsgate Street Within, London, E.C.

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Are confidently recommended as a simple but certain remedy for

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See Testimonial, selected from hundreds:—

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GRATEFUL—COMFORTING.

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8	„ ..	0	5	0	19	„ ..	0	10	6
9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
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GARDENING APPOINTMENTS.

Mr. F. J. DEBNAM, pleasure-ground Foreman at Blenheim Palace Gardens, Woodstock, has been appointed Head Gardener to H. D. MIDDLETON, Esq., Dissington Hall, Newcastle-on-Tyne.

Mr. J. CARPENTER, for the last ten years Head Gardener to J. H. TOD, Esq., Nascot Grange, Watford, has been re-engaged by H. BLACKBURN, Esq., who has recently taken possession of the same.

Mr. HENRY BICKERSTAFF, late Foreman at Redleaf, Tunbridge Wells, has been appointed Head Gardener to J. HENDERSON, Esq., Effingham Park, Crawley Down, Sussex.

In the list given last week, it was stated that "Mr. REID" was appointed to Eastwood Park Gardens. This should read "Mr. RAE."

PARTNERSHIP.—(Nurseryman, Seedsman, Florist, Fruit-grower, &c.) Gentleman of good social position would be willing to take an active part and introduce Capital in a really first-class old-established Business. Must bear the strictest investigation. Near London preferred.—Apply in confidence, giving full particulars, to O. P. Q., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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WANTED, AT ONCE, a General PROPAGATOR of In and Outdoor Nursery Stock. Must be a successful budder of Roses.—Apply, stating wages required and full particulars, to H. ENGLISH, Clevedon Nurseries, Clevedon.

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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden in the said County.—SATURDAY, July 27, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2536.

No. 136.—Vol. VI. {Third Series.} SATURDAY, AUGUST 3, 1889. [Regt. as a Newspaper. {PRICE 3d. Post-Free, 3½d.

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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

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The Subscription to America, including Postage, is $4.30 for Twelve Months.
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SUTTON and CHEAM HORTICULTURAL SOCIETY.
The TWENTY-SIXTH ANNUAL SHOW will be held on WEDNESDAY, August 14, 1889, by kind permission of H. Lindsay Antrobus, Esq., in the grounds of Lower Cheam House, Sutton. Bands of the W. Division Metropolitan Police and S. M. D. Schools will Play during the Afternoon and Evening. Mrs. Cubitt will Distribute the Prizes at 6 P.M. At 8.30 P.M., a Grand Display of Fireworks by Messrs. T. C. Brock & Co. Grounds open at 2 o'Clock for Subscribers on presenting their Tickets, and to the Public on payment of 2s. 6d. Admission after 4 o'Clock, 1s.; after 6 o'Clock, 6d.; Children, Half-price. For further information, apply to
Mr. W. R. CHURCH, Secretary, Sutton.

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TWENTY-FIFTH ANNUAL EXHIBITION, AUGUST 20.
12 STOVE and GREENHOUSE PLANTS, £15. £10, £5.
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8 EXOTIC FERNS, £3, £1 10s., 15s.
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ROSES, 36 varieties, Cup or £5, 50s., 30s.
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WEDNESDAY and THURSDAY, August 21 and 22.—For Twenty Plants, £25, £20, £15. For Grapes, £60. Collection of Fruit, £10, £6, £3. Collection of Vegetables, £5, £3, £2. Messrs. Webb's Prizes for a Collection of Vegetables, £5, £3, £2, £1. Valuable Prizes offered by Messrs. Sutton & Sons. Schedules may be had from
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SUTTON'S FLOWER OF SPRING CABBAGE, the best for autumn sowing, dwarf compact habit, firm heart, and stands well, 1s. 6d. per ounce, Post-free. SUTTON'S MAGNUM BONUM CAULIFLOWER, undoubtedly the finest of all the Cauliflowers, 2s. 6d. per packet, Post-free. SUTTON'S WINTER WHITE COS LETTUCE, one of the most valuable Lettuces yet offered, especially prized for winter use, 1s. per packet, Post-free.
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16 VARIETIES of STRAWBERRIES, which R. Gilbert considers the cream. They include all the modern varieties, but the good old Standards are not forgotten. In pots for forcing, and ordinary hand layers.
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MRS. TAYLOR and her Friends beg to THANK MOST SINCERELY, the GENTLEMEN and GARDENERS who so kindly GAVE THEIR VOTES AND INTEREST in Securing the ELECTION OF HER CHILD to the above most excellent Charity.

CINERARIAS, 1s. 6d. per dozen, 10s. per 100. Kelway's Model and other superb strains, carriage paid for cash.—F. G. MILLER, St. John's Nursery, Eastbourne.

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LILIES OF THE VALLEY! English-grown!
The best for early forcing, finest large flowers, and superior in every respect to German crowns. Price per 1000, 10.000, to 100,000 on application.
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Dutch Bulbs Direct from the Growers.
ANT. ROOZEN AND SON, of Overveen, Haarlem, beg to state that their CATALOGUE for 1889, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (94 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

PRIMULAS—PRIMULAS— PRIMULAS.—Twentieth year of distribution. Williams' Superb Strain, 1s. 6d. per dozen, 10s. per 100. CINERARIAS, same price; also double white PRIMULAS, 6d. each. Carriage free for cash with order.—JOHN STEVENS, The Nurseries, Coventry.

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LAXTON'S NEW STRAWBERRIES Must be grown by all.
Descriptive LIST, with prices of "Latest of All" (new, 1889), "Noble," "A. F. Barron," "Commander," &c., now ready. Six First-class Certificates.
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NICOTINE SOAP.—An effectual eradicator of all insect pests affecting plants, without injury to foliage. Jars, 1s. 6d., 3s., 5s. 6d.; Tins, 15s. 6d., 25s., 95s.
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DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
DICKSONS (*Limited*), The Royal Seed Warehouse, CHESTER.

SALES BY AUCTION.

CYPRIPEDIUM ELLIOTTIANUM.
CYPRIPEDIUM DAYANUM.
DENDROBIUM LOWII.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 8, at half-past 12 o'Clock precisely, by order of Messrs. Hugh Low & Co., a fine lot of imported plants in the best possible condition, of CYPRIPEDIUM ELLIOTTIANUM, which on flowering in this country, has proved to be a novelty of the first order. The flowers are produced five on a spike, large in size and very distinct, sepals white with dark red longitudinal stripes. Petals white, full of Indian purple stripes and speckles; lips reddish-brown—habit of the plant robust and free-growing. In quantity CYPRIPEDIUM DAYANUM, this much admired species, is believed to be offered in imported plants for the first time. DENDROBIUM LOWII, produces in abundance, seven-flowered racemes of distinctly spurred flowers, about 2 inches across, bright yellow with red veins in lip, set off by crimson fringes.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7961.)
A fine lot of ORCHIDS, in Flower and Bud.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 8, at half-past 12 o'Clock precisely, a fine COLLECTION of ORCHIDS, in Flower and Bud, including some fine varieties and specimens.
On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7961.)
CATTLEYA AUREA.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, August 8, about 100 Plants received as CATTLEYA AUREA, but amongst the plants will be found, in all probability, a few of the fine GIGAS VARIETIES.
On view morning of Sale, and Catalogues had.

Thursday, August 15.
SPECIAL SALE of ORCHIDS in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, August 15, at half-past 12 o'Clock precisely, and he will be glad if Gentlemen DESIROUS of ENTERING PLANTS FOR THIS SALE, will please SEND LISTS NOT LATER THAN THURSDAY NEXT.

Dutch Bulbs.—Special Trade Auctions.
First Sale, MONDAY, August 19.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY, August 19, THURSDAY, August 22, MONDAY, August 26, and THURSDAY, August 29, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, especially lotted to suit the Trade and other Large Buyers.
Catalogues will shortly be ready, and may be obtained on application.

Notice.

MESSRS. PROTHEROE AND MORRIS desire to announce that in consequence of the Bank Holiday THERE WILL BE NO SALE OF ORCHIDS at their Rooms NEXT WEEK.

Extensive and desirable Nursery Business Sale,
at Annan, Dumfriesshire.

THERE IS FOR SALE, by Private Bargain, as a going concern, the Old-established NURSERY BUSINESS, so long and successfully carried on, under the firm of Messrs. John Palmer & Son, by the late William Palmer, Nurseryman, Annan.
The Nurseries extend to 54 acres or thereby, 8 acres being held on lease from Mrs. Clarke of Galabanks, which expires at Candlemas, 1890, and 46 acres belonging to the trustees of the late Mr. Palmer, with whom arrangements could be made for a Lease on very moderate terms.
The Nurseries are in the highest state of cultivation, and the Stock is exceptionally healthy and good. It consists of seedling and transplanted Forest Trees; seedling and bedding Shrubs of all sorts; and a fine collection of good growing Coniferæ; with ornamental Trees, and Roses of the finest and most varied sorts. There is also a fine and varied stock of Fruit and other Trees, all in excellent growth and in great demand. In connection with the Nurseries, there are Sheds and Grounds set apart and completely fitted up, for propagating and other purposes.
The Nurseries are situated close to the Station of Annan, on the main line of the Glasgow and South-Western Railway; and also near to the Station, on the line of the Caledonian Railway Company.
This excellent situation affords a very ready and advantageous outlet to all the English and Scotch Markets, and is one of the great advantages which these Nurseries possess. There is also a convement outlet into Cumberland and the West Coast, by the Solway Junction Railway.
This is a most favourable opportunity for any party acquiring, on most advantageous terms, such an excellent Nursery Stock and Business, which has for so long held a prominent place among the Nurseries of Scotland.
Application for any further particulars may be made to Messrs. BROWN AND LITTLE, British Linen Company Bank, Annan, who will arrange for inspection of the Nurseries.

FOR SALE, a NURSERY, FLORIST, and SEED BUSINESS, about 2 acres of Land (well stocked), 4 Greenhouses, Stable, Outbuildings, &c.; good 7-roomed House and Shop, in main road. Not changed hands for 22 years. Good opening for two men. £500 as a going concern.—Southall's Nursery, Nineveh Road, Handsworth, near Birmingham.

To Nurserymen, Florists, and others seeking a Well-established and Profitable Business.

TO BE SOLD, in consequence of the death of the late owner, a fine NURSERY and SEED BUSINESS, long established in one of the best districts of the West of England. The Nursery Grounds extend to 27 acres of exceptionally suitable land. There is a good House with adequate Stabling and other conveniences. The property is of a high class, and offers an excellent opportunity for any gentleman obtaining a superior business requiring only moderate capital.
For further particulars and cards to view, apply to Mr. JOHN FOWLE, Surveyor, 64, Fulham Road, South Kensington, S.W.

Notice.

FOR SALE, a Small, Compact NURSERY and FLORIST BUSINESS, with immediate possession.
Apply to A. TALEYRAC, Harrow-on-the-Hill.

FOR SALE, a compact FLORIST and SEED BUSINESS, with Dwelling-house, Shop, and Nursery in main market thoroughfare, and good Shop opposite the station.
Apply, W. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Snaresbrook, N.E.—To Nurserymen and Florists.

TO LET or for SALE, a commodious Freehold HOUSE, with Outbuildings, 4 Glass-houses, and about half an acre of Land. A first-class opening for an energetic man.
SUTTON ABBOTT, Auctioneer, The Mall, Wanstead, N.E.

To Market Gardeners.

TO BE SOLD or LET, large GREEN-HOUSES, containing 15,000 feet of Glass, situated close to Liverpool. Returns can be seen, showing from £10 to £20 per week, in the season. Splendid houses for Tomatos. Rent £90, including Cottage and 5 Acres of Land.
Further particulars from DONNISON AND EDWARDS, Solicitors, 41, Lord Street, Liverpool.

TO BE LET, 1 to 10 acres of GRASS LAND, suitable for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent £12 per acre, with the option of Purchase of the Freehold within the first 7 years. No tithe or land tax. Near the main road, Enfield Highway; about 9 miles from London.
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TO BE LET, from Michaelmas, DYSON'S FARM at Edmonton, comprising a comfortable House, ample Stabling, Bunching Sheds, and other Buildings, and 38 acres of Market Garden Land, now occupied by Mr. Hollington.
Apply to Messrs. PHILIP D. TUCKETT AND CO., Land Agents, 10A, Old Broad Street, E.C.

TO LET, FLORIST and SEED BUSINESS, High Street, Tunbridge Wells. Immediate possession. STURT AND CO.

TO BE LET, in the best Grape Growing and Tomato district in England, a well-stocked GARDEN, of about an acre, with a small Forcing-house and a 220 feet Vinery with southern aspect, containing 80 young Vines, loaded with Grapes of the finest quality. The Freeholder is prepared to erect more houses and suitable residence if required.
Apply by letter to A. B. C., Box 7319, Dale, Reynolds & Co.'s Advertisement Agency, 24, Wellington Street, Strand, W.C.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

LANDSCAPE GARDENING. — Designs Prepared and Work Superintended in any part of the country. For terms, apply to THOMAS H. MAWSON, Landscape Gardener, Windermere.

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ORCHID BASKETS, made of the best Teak and Copper Wire.
COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.
ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.
TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.
FERNS, a large and fine stock of the leading kinds.
GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.
STOVE and GREENHOUSE PLANTS, suitable for table and other purposes, in great variety.

The Company offer all the above at the lowest possible prices. Descriptive PRICE LISTS, post-free, on application to

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.

Borough of Halifax.

THE PARK COMMITTEE of the HALIFAX CORPORATION are prepared to RECEIVE TENDERS for the SUPPLY of 500 HORSE CHESTNUT TREES not less than 12 feet in height, to be delivered at Savile Park during the month of November next. Tenders, endorsed "Tender for Trees," to be sent to the undersigned before 17th of August, 1889.
By order, KEIGHLEY WALTON, Town Clerk.
Town Hall, Halifax, July 24, 1889.

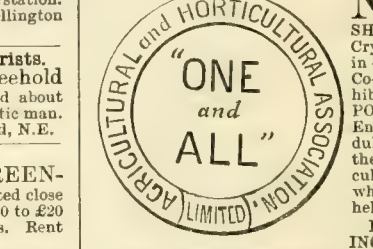
ROYAL SCOTTISH ARBORICULTURAL SOCIETY.

Annual General Meeting.
Edinburgh, July 19, 1889.

The Thirty-sixth Annual General Meeting of the Royal Scottish Arboricultural Society will, by the kind permission of the Regius Keeper, Professor Bayley Balfour, be held in the Class-room, at the Royal Botanic Garden, Inverleith Row, Edinburgh, on TUESDAY, August 6, 1889, at 1 P.M.
W. J. MOFFAT, Secretary and Treasurer.
5, St. Andrew Square.

Annual Excursion.

The Twelfth Annual Excursion of the Society will take place, by the kind permission of the following Noblemen, to their several Estates in Nottinghamshire, on August 7 and 8:—
His Grace the Duke of Portland's Estate of Welbeck.
His Grace the Duke of Newcastle's Estate of Clumber.
The Right Hon. the Earl Manvers' Estate of Thoresby.
The Right Hon. Lord Saville's Estate of Rufford.



NATIONAL CO-OPERATIVE FLOWER SHOW, to be held at the Crystal Palace on August 17, in connection with the Great Co-operative Festival and Exhibition. FIVE HUNDRED POUNDS in Prizes and Medals. Entries close August 7. Schedules free on application to the Agricultural and Horticultural Association (under whose auspices the Show is held).
EDWD. OWEN GREENING, Secretary.
3, Agar Street, Strand, W.C.; Creek Road, Deptford, S.E.

TESTIMONIAL TO MR. ARTHUR BLICK,

OF THE LATE
ROYAL HORTICULTURAL GARDENS,
SOUTH KENSINGTON.

It has been proposed by several Gentlemen that the present time is a fitting opportunity for the large body of Nurserymen, Gardeners, and others, who have been in the habit of exhibiting at the Royal Horticultural Society's Shows for many years past, to make some little recognition of the services of Mr. Blick, who for the past 28 years has been employed at the Royal Horticultural Gardens, South Kensington, and who has now, owing to the collapse of the Gardens at South Kensington, been thrown out of a situation on the shady side of his life. The following Gentlemen have kindly consented to form a Committee to carry out the above proposal, viz.:—

Mr. W. BULL	Kin_'s Road, Chelsea.
Messrs. CARTER & Co.	High Holborn.
Messrs. W. PAUL & SON ...	Waltham Cross.
Mr. H. TURNER	Slough.
Mr. JOHN WILLS	South Kensington.
Mr. F. SANDER	St. Albans.
Mr. F. Q. LANE	Great Berkhampstead.
Mr. H. HERBST	Richmond.
Mr. H. HAWKINS	Twickenham.

The Smallest Subscription will be thankfully received by Mr. J. ALDOUS, Florist, Gloucester Road, S.W. (*Hon. Treasurer*); or Mr. S. M. SEGAR, Royal Exotic Nursery, South Kensington (*Hon. Secretary*).

List of Subscriptions.

The Rt. Hon. Lord ABERDARE...	£3 2 0
The Baroness BURDETT COUTTS	1 1 0
Mr. F. SANDER, St. Albans	1 1 0
Mr. W. ICETON, Putney	1 1 0
Mr. SCHNEIDER, King's Road, Chelsea	0 5 0
Mr. A. F. BARRON, Chiswick	1 1 0
Mr. B. S. WILLIAMS, Holloway	0 10 0
Messrs. PULHAM AND SONS, Broxbourne	1 1 0
Mr. BANNISTER, Brompton Road	0 2 6
Messrs. SUTTON AND SONS, Reading	1 1 0
Mr. G. DEAL, Chelsea	1 1 0
Messrs. HAWKINS AND BENNETT, Twickenham ...	1 1 0
Mr. H. HERBST, Kew	1 1 0
Messrs. W. PAUL AND SONS, Waltham Cross ...	1 1 0
Messrs. J. VEITCH AND SONS, Chelsea	1 1 0
Mr. JOHN UNITE, Edgware Road	0 10 6
Messrs. THOMAS AND SON, Edgware Road	0 10 6
Messrs. CARTER AND CO., Holborn	1 1 0
Mr. ALDOUS, Gloucester Road	1 1 0
Mr. JOHN WILLS, South Kensington	1 1 0
Mr. W. BULL, Chelsea	1 1 0
Mr. S. M. SEAGER, South Kensington	1 1 0
Mr. HOGG	0 10 6
Mr. ALLOWAY	1 1 0
Mr. HANKIN	0 10 6
Mr. HUMBY	1 1 0
Mr. HOWARD, Southgate	0 10 6
A FRIEND	1 0 0
Mr. HONEY	0 10 6
Mr. SPIKINGS	0 10 6
Mr. BARBE	0 10 6
Mr. A. WATERER, Woking	1 1 0
Messrs. KELWAY AND SON, Langport	1 1 0
Mr. W. RICHARDS, 41, Wellington Street, Strand	0 10 6
Mr. W. A. EYLES	1 1 0
Mr. G. EYLES	1 1 0
T. DUNN, Esq.	1 1 0
Dr. and Mrs. MERRIMAN	1 0 0
Mr. HARDCASTLE	0 5 0
Mr. RICHARDS	0 10 0
Mr. J. BAILEY	0 10 0
Mr. L. LANE	1 1 0
Mr. C. ROSS	0 5 0
Mr. H. TURNER, Slough	1 1 0
Messrs. DICK RADCLYFFE AND CO....	1 1 0
Mr. WARE, Tottenham	1 1 0
Messrs. BARR AND SON	0 10 0
Mr. BLISSETT	0 10 6
Mr. WILLIAMS, Ticehurst	0 5 0

Gentlemen wishing to Subscribe to the above Testimonial please send Names at once, as it is intended to shortly Close the List.

CARTERS' "TESTED" SEEDS
FOR PRESENT SOWING.

CABBAGE.—CARTERS' HEARTWELL MARROW, acknowledged to be the finest early Cabbage in cultivation, price 1s. 6d. per ounce, 6d. and 1s. per packet, post-free.
CARTERS' MAMMOTH BEEFHEART, the best main crop Cabbage, price 1s. 6d. per ounce, 6d. and 1s. per packet, post-free.

LETTUCE.—CARTERS' GIANT WHITE COS, price 2s. 6d. per ounce, 6d. and 1s. per packet, post-free.
DUNNETT'S GIANT WINTER COS, price 2s. 6d. per ounce, 6d. and 1s. per packet, post-free.
ALL THE YEAR ROUND, price 1s. 3d. per ounce, 6d. per packet, post-free.

ONION.—CARTERS' GOLDEN GLOBE TRIPOLI, price 1s. and 2s. 6d. per packet, post-free.
CARTERS' GIANT WHITE TRIPOLI, price 1s. per ounce; 6d. per packet, post-free.
CARTERS' WHITE EMPEROR, price 1s. and 2s. 6d. per packet, post-free.

CARTERS', Royal Seedsmen by Sealed Warrants, 237 and 238, HIGH HOLBORN, LONDON.

"GEMS" — "GEMS" — "GEMS" of Choice Stove Plants.
OXERA PULCHELLA — dense clusters, 8 to 10 inches across, of pure white, funnel-shaped flowers, about 2 inches long and 1 inch across. Flowers in winter very lasting, graceful and beautiful. 5s.
SCHUBERTIA GRANDIFLORA—flowers white with delightful, almond-like fragrance, produced in large trusses, similar to Stephanotis. Excellent for cutting. 2s. 6d. and 3s. 6d.
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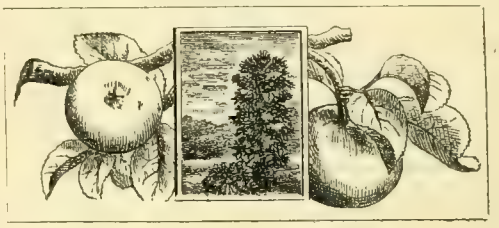
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OF
TEA ROSE "RUBENS."
From a photograph by Messrs. Byrne, of Richmond.



THE
Gardeners' Chronicle.
SATURDAY, AUGUST 3, 1889.

COLOUR IN PLANTS.

THE study of the nature and origin of the colours found in plants is one of great difficulty, in consequence of their complexity. Mr. Sorby reckoned them by hundreds, and probably none is ever simple or elementary.* Although much has been done, as he observed in 1871, the inquiry is still quite in its infancy. Colours may be found in all parts of plants, either on the surface, on the cells of the epidermis, or deeply seated within the tissues, and even in total darkness, as in the roots of the Carrot and Beetroot. With regard to the colours of flowers, one of the first and readily noted observations made was, that certain species seemed to have a definite range, beyond which they appeared unable to go. Hence, M. de Candolle proposed to divide the colours of flowers into two series, the xanthic and cyanic, corresponding to the usually solid and liquid colouring matters, the former containing yellow-green, yellow, yellow-orange, orange and orange-red; the latter, blue-green, blue, blue-violet, violet, and violet-red; red being intermediate between the two series. It was thought that flowers were rigidly bound by these series, and never transgressed them, but that the tints of a species might vary through each. Thus Dr. Lindley, replying to a correspondent in the *Gardeners' Chronicle* on February 2, 1842 (p. 97), remarks that "a blue Dahlia was not to be expected. On the other hand, the Hyacinth, being of the cyanic series, a yellow Hyacinth will not occur."† When, however, Delphinium cardinale, with golden yellow in the petals, came from California, and yellow Hyacinths had probably been seen by Dr. Lindley before 1856, he was obliged to confess that, "at all events the cyanic and xanthic speculations of philosophers must now be laid up in the limbo of pleasant dreams!" Three and

* The Examination of Mixed Colouring Matters with the Spectrum Microscope. *Monthly Micr. Journ.*, 1871, vol. vi., p. 124.

† He was not aware that both single and double yellow Hyacinths had been raised many years before.

thirty years have elapsed, and we are still no nearer the production of a blue Dahlia or a blue Rose; and it may be remarked that it would seem easier to supply yellow to the cyanic than blue to the xanthic series, because there is good evidence for believing that the order of evolution of colours has been from green through yellow, orange-red, purple to blue; so that any plant which had reached the latter stages, might (to judge by analogy) more readily revert to the more primitive colour, yellow, than advance under cultivation to a point which Nature had not yet been able to acquire, and moreover showed no signs of approaching.

Causes of Colours.

If we are not yet in a position to assign accurately, or even approximately, the immediate causes which give rise to definite colours, we can trace, at least, some correlations between them and external factors, such as the following:—(1) Ingredients in the soil, which are absorbed by the roots and conveyed to the leaves and petals, &c.; (2) Oxygen; (3) Light; (4) Bud-variation; (5) Inter-crossing. When we critically examine all we know under these few headings, it really amcunts to very little.

(1) Soil, &c.

Several cases are recorded in the *Gardeners' Chronicle* and elsewhere of effects produced by different soils and different habitats of wild plants, as well as upon the colours of flowers cultivated with various and known substances which have been added to the soil. Thus, Mr. G. F. Wilson found that lime restored the deep blue to alpine Gentians, which were pale when grown in a peaty soil. A writer (*Gard. Chron.*, 1850, p. 198) says that chloride of lime used in watering Camellias, changed a bright red to red and white. Mr. Lowne found Balsams to redden with nitrogenous food, but were white without it, &c.

But isolated results like these do not teach us much. What is wanted is an elaborate series of experiments—*e.g.*, to test the use of all kinds of salts with a large number of flowering plants, and to discover whether, for example, shades of reds may follow acid substances; and blues, alkaline; or, again, the effect of earths, such as lime, strontia, baryta, &c., or salts of the metals. That the "breaking" of flowers when transferred from the wild state to cultivation is due to the artificial character of the soil seems obvious; but such experiments might enable us to find out what substances would compel any refractory plant to break which ordinarily refuses to do so.

One of the few facts known is the general effect of acids and alkalies in altering certain vegetable colours, whether they are assumed to be imbibed from the soil or created by the plant, the effect being the conversion of purples to reds by acid, and the reverse by alkalies. Now the spectroscope has to a great extent confirmed this view, but we want a great deal more information than we at present possess. Thus, when the crimson colouring matter of the Wallflower is treated with an acid, a large central absorption (indicated by a broad, darkened space in the spectrum) moves slightly towards the blue end, and so cuts off more light from the blue and violet rays, leaving the red end more pronounced. On the other hand, when treated with ammonia, the absorption moves the other way, with the opposite result. On the other hand, sometimes neither an acid nor an alkali produces any effect. Nevertheless Sorby found that the tendency of an acid is to "raise" the dark absorption (*i.e.*, towards the blue end), and of alkalies to "lower" it (*i.e.*, towards the red end).

Besides thus acting on the general absorption, they may decrease and increase the existing well defined bands, or create new ones. Thus a pink solution of alkanet, by successive additions of carbonate of soda, first becomes purple, while the red end is encroached upon, and reveals a new absorption band till, at last, a deep, purple-blue colour is acquired, when of the three original bands two have disappeared (towards the blue end), and the new one has become pronounced at the red end of the spectrum.

Analogous results were obtained by Dr. W. T. Russell, who, in his researches on the spectrum of chlorophyll, found that the effects of acids altered the position of some of the absorption bands, raising them towards the blue end, the central ones especially, but not affecting the others; or, again, developing a new one according to circumstances. If an acid, however, be normally present in a leaf, as of the Vine, Ampelopsis, or Begonia, the chlorophyll is not affected by it, except when decaying, or by injury, the living chlorophyll having some power of resisting the effect of the acid. Now, this interesting result tallies with the observations of Sorby on the presence of phycoxanthine and orange xanthophyll when mixed with chlorophyll in solution. "When alone, the phycoxanthine is so much more rapidly decomposed by bright sunlight than the orange xanthophyll that the relative amount of the latter is soon increased to double the original; whereas, if a considerable quantity of blue chlorophyll be present, the very opposite result occurs. Here, then, we have a most striking effect of the presence of chlorophyll, which itself was more rapidly decomposed than either of the substances with it."

Mr. Sorby concludes by observing:—"Many facts seem to prove that one substance may protect another by absorbing the actinic rays, or by consuming the oxygen, which, in its absence, would decompose the other." How far these results depend on purely physical or chemical influence, and how far the agency of life affects the matter, is at present unknown; though with regard to the function of transpiration, it is well known that the loss of water rapidly increases as soon as a leaf dies.

These few results will indicate sufficiently, how varied the colours may become under the influence of acids and alkalies of different strengths. Therefore, to understand the next step is to arrive at the origin of the alkaline or acid substances in the plants themselves. Here we are at present stopped. But the above facts are suggestive, in that to intensify a blue—say, of Primula sinensis—alkalies might perhaps aid, as well as the crossing with a pure white variety, which often has the power, so to say, to eliminate pure colour out of a mixture, and so abstract the red from the purple-blue of Holborn Gem, &c. *G. Henslow.*

(To be continued.)

New or Noteworthy Plants.

Spiræa kamtschatika.*

This is a stately herbaceous Spiræa, native of Kamtschatka and the adjacent islands, including Japan, and found also on the mainland, but not extending far into Siberia. Pallas suggests that it may have been derived from Western America, and assuredly S. occidentalis, recently described by Sereno Watson, from Oregon, is very closely allied, though not quite the same. It is a plant like our Meadow-sweet, but in an enlarged edition, inasmuch as along the Kamtschatkan rivers it exceeds in stature the height of a horse. Pallas mentions it as attaining to the height of 10 feet, and it evidently varies considerably in size. The leaves are often very large, sometimes as much as 1 foot wide and 8 inches long, with a coarsely hairy, channelled leaf-stalk, provided with two leafy stipules at the base, and a number of small foliar outgrowths, irregular in number, size, and position along its length; the terminal leaf-segment is cordate, broadly ovate, palmately five-lobed, with sharply-pointed biserrate lobes, more or less covered with coarse reddish pubescence. The inflorescence and fragrant white flowers are very like those of our common Meadow-sweet on a larger scale. Maximowicz speaks of the flower having five carpels only, but in several native dried flowers and in the living plant, of which specimens have been obligingly communicated by Mr. George Paul, the carpels are ten in number, each carpel containing two pendulous ovules, although Maximowicz tells us only a single seed is perfected.

It is not only a handsome plant for the borders of lakes and bogs, but has qualities which may commend it to the epicure. Pallas tells us that the natives of Kamtschatka eat the young shoots in spring uncooked. They are, he says, slightly astringent, and have a flavour of Peach kernels. The leaves are used in soup, while during the winter-scarcity of food the natives collect the roots, and eat them raw, or cooked with fish or fish-eggs. The plant was shown in bloom by Messrs. Paul & Son at the last meeting of the Royal Horticultural Society under the name of S. gigantea, under which name also we have seen specimens from Mr. Gumbleton's garden." The name gigantea is appropriate enough in one sense, but, used alone, it gives rise to a false impression that it applies to a distinct species.

After a comparison with numerous specimens from Japan, Kamtschatka, and elsewhere, which vary in stature, we are convinced that the plant is merely S. kamtschatika, and if the name gigantea is worth preserving at all, it should only be as a qualificatory epithet, indicative of a variety. *M. T. M.*

* *Spiræa kamtschatika*, Pallas, *Flora Rossica*, tom. 1, part 1, p. 41, tab. 28 (1784). See M. T. Masters' "Herbaceous Spiræas" in *Gard. Chron.*, Aug. 24, 1878, p. 240. *Filipendula kamtschatika*, Maximowicz, *Adnot. de Spiræaceis*, p. 144 (248), (1879). *Spiræa gigantea*, hort.

New Glass Houses at the Cambridge Botanic Garden.

We are enabled to lay before our readers (fig. 19) a view of the recently erected range of glass houses which have been built by Messrs. J. Boyd & Sons, of Paisley, at a cost of about £5500. The range is facing the south, and consists of a corridor about 300 feet in length, from which eight houses branch off. On the other side or back of this are tanks to catch rain-water, manure and soil pits, tool sheds, and three propagating pits, and the botanical laboratory also adjoins

The houses are constructed of pitch pine, and are heated by two boilers, serving 6-inch pipes running along the corridor, which supply a series of 4-inch piping in the houses. The Palm-house, which is in the centre of the block, is a tall and elegant structure, and has an extra boiler; and at the end of the Palm-house is the aquarium.

Remarks on the Fruit Crops, 1889.

[*For Tabulated Summary, see* p. 99.]

Scotland.

Aberdeenshire.—The fruit crop this year has been rather disappointing. There was great abundance of blossom on Apples, Cherries, and Plums. Pears had not much, and though there was no frost while they were in flower, Apples, with the exception of a few young trees on walls, are bearing a very poor crop. Cherries, except Morellos (which are a fair crop), are also poor. Plums are a good crop. Pears very poor. Small fruit are a fairly good crop; also Strawberries. Owing to the severe drought in the end of May and all the month of June, Plums, red Currants, and Gooseberries have been terribly overrun with insects. *J. Forrest, Haddo House, Aberdeen.*

—— Apples are variable; some trees and sorts are a good crop, while others have nothing. Pears are more general, but from continued dry weather not so large as I have seen them at this season. Plums are cropped so heavily that they require thinning. Raspberries and Currants are very heavy, while Gooseberries are a good average. Strawberries also a good average, but Nuts are thin. *R. Farquhar, Fyvie Castle Gardens, Fyvie.*

Ayr.—We have splendid crops of all kinds of small fruits, Strawberries being extra fine in size and flavour; indeed, I never tasted them so fine. Plums are good and early. Apples are a very thin crop, but should be of good quality, as they are already a good size. The caterpillar did much damage to the leaves. *W. Priest, Eglinton Gardens, Irvine.*

Banff.—The fruit crop is to be very much under the average; and in a great measure, no doubt, this is attributable to the sunless season and cold autumn of last year; still, the Pear and Apple blossom, although abundant, has not been able to set through their immatured state, and partly because of the excessive heat and drought, which of late has told very severely on other garden crops. Small fruits in general seem to be very abundant. The finer class of wall fruits, such as Peaches and Apricots, outside, are without a fruit, and in many cases the trees are greatly crippled by the multitude of insects with which they were infested during the month of June, when the thermometer was as high as 92° in the shade, and one night as low as 3° of frost. The rainfall for the month of June was only 0·30 inches. *J. F. Smith, Cullen Gardens, Cullen.*

—— The fruit crop is, on the whole, a good one here, and far exceeding my expectation. After so cold a summer as last, we have to thank the genial and warm month of May, which, no doubt, enabled numbers of the weakly blossoms to set their fruits. Plums of all kinds and on all situations, both on standards and walls, are all loaded with fruit alike, which has caused a large amount of labour in thinning. Trees that had their branches breaking and were propped up last season are equally loaded this. Apricots are a full crop, and the trees vigorous and healthy. Fruit clean and forward. Peaches are, with the exception of a few trees, a light crop, and but for the foreshortening of the young growth on three occasions after the beginning of August in order to strengthen the buds, I do not think that so far N. we should have got any. Apples are a full crop on some kinds, while others have few or no fruits. Pears are somewhat similar to the Apple crop. Jargonelles, Williams' Bon Chrétien, and some early kinds are good, and others, such as Louise Bonne of Jersey, are failures. Cherries and all kinds of bush fruit are abundant. Strawberries a fine crop and good in quality. *J. Webster, Gordon Castle Gardens, Fochabers.*

Dumfries.—We had a very mild winter and spring, and there was every promise of a fine fruit crop; but the blossom did not set well, owing to the wood not having been thoroughly ripened last autumn. Then the long-continued drought has told severely on early Strawberries and small fruits. Later varieties of Strawberries are better. Dr. Hogg is a very heavy crop, and Elton Pine promises well. *A. Henderson, Jardine Hall Gardens, Lockerbie.*

East Lothian.—Apples will not be so abundant as I expected; although they had a fine setting period and plenty of blossom, they have got gradually thinned. Pears did not blossom so abundantly, and have also fallen off very much, and consequently they are much under average. Plums will be an average crop and good. Sweet Cherries are a very poor crop; although they looked promising at one time, they also have gradually disappeared. Morellos are a good average crop. Peaches and Nectarines, owing to the wood not being ripened last year, had scarcely any blossom, and out of all my trees I have only one with any fruit. Apricots on the same exposure are a good average crop, and very clean in fruit and foliage. Strawberries have been and still are very fine. The rain came just in time to save them, as they were beginning to suffer from the long drought. All the other small fruits are very plentiful with us. *L. Dow, The Gardens, Newbyth, Prestonkirk.*

Forfar.—Apples are an average crop on young trees, but on the old a failure. Pears are a failure—not above a dozen fruits. We had a cold, sunless summer last year, which left the wood unripened. This year the spring and summer is the best I have seen during more than half a century, we having had no frost in May or June, which counterbalanced the bad autumn season. All small fruits are abundant. *James Mitchell, Panmure Gardens, Carnoustie.*

Midlothian.—After such a bad season as 1888 was for ripening the wood and buds of fruit trees, we could hardly expect an abundant crop this year. Still, under the exceptionally favourable weather which has prevailed since October, we have a crop fully up to the average of the past decade in quantity, and considerably over it in quality. The autumn was comparatively mild and open, so that the ripening process went on until the end of the season. The spring was free from frost, and the early summer genial and growing, so that the blossom had the best chance of performing its functions it has had for many years, and all plants with their wood fairly well ripened consequently "set" their fruit in great abundance. The heat and drought of May and June brought about a rather severe attack of insect pests, which in some places did much harm to the young fruit; but several heavy showers have cleared away the most of the insects, and both plants and fruit are looking remarkably clean and healthy at the present time. All kinds of fruit are bearing fine crops, except Peaches and Nectarines, the wood of which did not ripen; Nuts and Raspberries, probably all from the same cause. Recent heavy rain has greatly improved the Strawberry crop, and crops generally. *Malcolm Dunn, Dalkeith Gardens, Dalkeith.*

Nairnshire.—The fruit crops in this locality are not what they promised to be in the early summer. Badly ripened wood and buds have had a deal to do with it. The extreme heat and dryness of May and June, with myriads of insects tended to reduce the quantity, and lower the quality. Young Apple trees are fairly cropped, but old trees are almost fruitless. Cherries dropped their fruit to a mere sprinkling. Victoria Plums as standards are loaded. Gooseberries are a good crop. Currants are fair. Strawberries and Raspberries a good crop. I had to water freely to make them swell. *James Maitland, Cawdor Castle, Nairn.*

Stirling.—The more hardy kinds of Apples are abundant, including King of Pippins and Worcestershire Pearmain; all the Codlin class—Northern Greening, Stirling Castle, Seaton-house, and Irish Peach—many good kinds dropped quantities of their fruit, but the size and quality of the remainder will be much improved thereby. All bush fruits are very abundant, and of good size. The copious rains in May encouraged leaf and wood growth, so that all are very luxuriant and healthy. Grubs attacked Apples severely, but the trees are not materially injured. *M. Temple, Carron House, Falkirk.*

Sutherland.—The dry weather will cause fruit to ripen a fortnight earlier than usual. Apples have set well on a wall facing the sea, and rather thinly on standards inside the walls. Strawberries are promising well, though much in want of rain; Laxton's Noble ripened a fortnight earlier than anything we have here, and it is a fine fruit for an early Strawberry. Currants are thin. *D. Melville, Dunrobin Castle Gardens, Golspie.*

ENGLAND.—NORTHERN COUNTIES.

Northumberland.—Immaturity of wood will account for the scarcity of Apples and Pears. Apples bloomed profusely, but did not set well, although some varieties are bearing a crop, and promise to be good. No criterion of the crop can be formed by naming varieties. Keswick Codlin, generally a great bearer, is very scarce. Of Strawberries Viscountess, President, Sir J. Paxton, and Mahon cropped heavily. Helène Cloede is the best late kind that we have tried. *George Harris, Castle Gardens, Alnwick.*

—— Apples and Pears in this locality are almost a failure. Apricots an average crop and good. Gooseberries and Currants an average crop and very fine, especially black Currants. Strawberries are good, with the exception of Grove End Scarlet, which we use for preserving, and which has failed owing to the drought. I cannot say too much in favour of The Captain as an early, beating King of the Earlies, but our finest flavoured Strawberry is Pauline, though rather a shy bearer. *David Inglis, Howick Hall, Lesbury.*

Westmoreland.—Trees very healthy. Of course, owing to absence of sunshine last year, the show of blossom this spring was scanty and weak, and failed to set. Espalier-trained Apples of following sorts are bearing good crops:—Ecklinville Seedling, Stirling Castle, Fearn's Pippin, Cellini, Keswick's King of the Pippins, Annie Elizabeth. Amongst Pears, Marie Louise is best crop. Gooseberries are a heavy crop; Strawberries very good; other bush fruits light. *W. A. Miller, Underley, Kirkby Lonsdale.*

Durham.—I never remember a better all-round crop of all kinds, and quite a super-abundance of the culinary kinds of both Apples and Plums, which, to a considerable extent, has been corrected by the late drought. The attacks of aphis have been severe, but have been eradicated by the late pelting thunder showers we have had. *Rd. Westcott, Raby Castle, Darlington.*

Yorkshire.—Apples, Pears, Gooseberries, and Currants made a splendid show of bloom, and promised well for fruit; but a heavy thunderstorm on May 23, when pieces of ice the size of a walnut fell, completely destroyed the promise of abundant crops of hardy fruit in this district. *R. C. Kingston, Brantingham Thorp, Brough.*

—— Apples and Pears have suffered very much from the hot and dry weather in June. The heaviest crop is on Ribston Pippin, Charleston Pippin, Irish Peach, Keswick, Lord Suffield, Hawthornden, and King of the Pippins. Strawberries and small fruits are very fine and clean. *James Batley, The Gardens, Wentworth Castle, Barnsley.*

Lancashire.—There is not a Peach or Apricot on the wall here, a condition of things that has not occurred in the last decade. Last year's growth died back to within a few inches of the base on all the Peach trees on the wall and in a less degree in unheated and overshaded houses. No doubt the wet dull summer of 1888 is responsible for this, as the wood did not ripen. But will any one explain how it is we have more Plums this year than we have had in the last ten years put together? There are plenty of Apples, never a heavier crop in this garden. Some neighbouring ones suffered from caterpillar, which spoiled the crops. *Wm. P. Roberts, Cuerdon Hall, Preston.*

EASTERN COUNTIES.

Lincolnshire.—The fruit crops are very poor with us this season, although in spring the prospects were very bright; the blossoms on Apples, Pears, Cherries, and Plums, were most abundant, and looked well for a heavy crop; but cold east winds came on us about the middle of May, which brought with them insects of various kinds, which completely upset all our expectations. *David Lumsden, Bloxholm, Lincoln.*

—— The fruit crop about here is not quite as good as was once expected it would be. I have never seen the Plum crop in such a state; the trees are literally covered with green-fly, &c.; many of the branches are quite dead, and yet the Apricots are quite clean, and free from aphis. Strawberries have been a success. We mulch ours just when they set, and they have been well watered three times a week during the dry weather. *J. Rowlands, Bardney Manor, Lincoln.*

Suffolk.—Generally speaking the crops of Apples, Pears, Plums, and Cherries are in no way commensurate to the abundance of bloom that was everywhere present in the spring. In the first part of the season the foliage of Apple and Pear trees, the former especially, suffered much from attacks of insects that were so prevalent last year, but the heavy rains, accompanied by strong wind, in the early part of May, effected a considerable clearance of these pests. Amongst small fruits, Gooseberries are pretty generally plentiful and good, and Raspberries have been a most abundant crop, and fine in size and quality. *John Wallis, Orwell Park, near Ipswich.*

—— The greatest disappointment of the season is

the disparity, wide as the poles asunder, between the promise and performance of the Apple crop. Another was the failure of the bloom to set, caused by frost. The same remark holds good of Pears and Plums, though hardly to the same extent. Some Cherries hardly bloomed at all, those that did, set indifferently, and the fruit dropped severely. Apricots did not bloom and branches perishing and trees dying have been rife. Peaches fair, trees healthy. Small fruit and Strawberries a full crop. *D. T. Fish, Hardwick, Bury St. Edmunds.*

—— The fruit crop is a very disappointing one, as after all the great show of bloom and the fine promise, the set has been bad, and Apples, Pears, Plums, and Cherries have fallen wholesale, and many of those remaining do not look at all likely to swell satisfactorily. I attribute a good deal of this to the sudden transitions from almost scalding heat to cold, and *vice versâ*, which took place while the skin of the young fruits was tender. *J. Sheppard, Woolverstone Park, Ipswich.*

Essex.—We had a capital show for Apples and Pears. The trees were loaded with bloom, and later we appeared to have a splendid set. Dry weather and cold winds were very prevalent in the early part of May, and many of our Apple and Pear trees lost their foliage at that time, and with the leaves the fruit also dropped. The most Apples which I have seen have been on bush trees on Paradise stocks. Plums did not show well, neither did Cherries, but of the latter we have a fair crop. Strawberries have been a magnificent crop—James Veitch and Dr. Hogg do remarkably well here. Bush fruit is very good all round. Plum trees are in a sad state with aphides. Peaches and Nectarines are not much grown in the open in this neighbourhood. Figs are a good crop. *Arthur Ocock, Havering Park, Romford.*

—— Apples, though they blossomed abundantly, set badly. Pears were the same, and the quality is not good. Plums are a good crop, but the quality is indifferent, owing to aphis on the leaves. Cherries as standards and on the wall are excellent, except Morellos, which are not a good crop; the fruit seemed to shrivel up on the trees. Apricots are much under average, but the fruit is sure to be good. Strawberries and all small fruits are healthy as regards the bushes, and the quality of Raspberries is especially good. *Jas. Douglas, Great Gearies, Ilford.*

—— To judge from the appearance of Apple and Pear trees during their blooming period, it would have been thought that we should have such a season for fruit as we have not had of late years; but, alas! it fell soon after seeming to set, leaving very little fruit in this neighbourhood. The varieties I notice with a few fruits are:—King of Pippins, Cox's Pomona, Ribston Pippin, and London Pippin. Pears:—Louise Bonne, Beurré Bosc, and Doyenné du Comice. A few Plums on walls, none on standards, a few Peaches and Nectarines; Morello Cherries are an excellent crop; bush fruits are generally scarce, but heavy crops of Strawberries of very fine quality. *James Vert, Audley End.*

—— The hardy fruit crops vary considerably in this district. Effects of caterpillars are observable where attention was not given them. There is generally a good show of Apples, Pears, and Plums. Peaches and Nectarines are a fair crop, though they have been much subject to blistering of the leaves. Strawberries an abundant and fine crop. Bush fruits generally good in quality and numbers, with a heavy crop of Raspberries. My own crops of Apples and Plums were never so abundant and good. To give Editor some idea what my large standard orchard trees are like as regards quantity and quality of the various kinds I send on branchlets. [Laden. Ed.] *William Earley, Double House, Ilford.*

MIDLAND COUNTIES.

Notts.—Apples showed plenty of bloom, but were weak, and of what did appear to set a great quantity fell off, and the caterpillar made terrible havoc among the remainder, so that there will be only a light crop. Pears the same. Plums are good average crop. Cherries are good and plentiful, and I never knew the trees to be cleaner from aphis. Apricots very light; they did not bloom well. Small fruits are abundant and fine. Strawberries a most extraordinarily large crop. Noble will take a place as an early variety either for forcing, or out-of-doors, and for late work Waterloo and Jubilee are excellent. *A. Henderson, Thoresby, Ollerton, Newark.*

—— Judging from the general healthy appearance of the trees and the abundance of bloom, the Apple crop promised to be the most abundant I have hitherto had, but whether owing to the immaturity of the wood or the occasional showers, together with a few dull days during the flowering period, I know not, but many of the varieties did not set their fruits. Pears are considerably below the average. Peaches and Nectarines are almost a failure, and so also are Apricots. Cherries, both sweet and Morello, are a fair average, while Plums are under. Bush fruits generally are good, and Strawberries a very heavy crop. *M. Gleeson, Clumber Gardens, Worksop.*

Leicester.—Fruit crops in this country are more often lost by frost when the trees are in blossom than by any other cause. The late spring was an exception, no frost of sufficient severity to destroy the prospects of fruit having occurred; nevertheless, the failure in our orchards is complete. Heavy rains and prolonged easterly gales seem to have acted prejudicially on the blossoms, and while vegetable action was checked, insects were active. Six days without sun, and almost constant rain, could not but act most unfavourably on the fruit blossoms. 6·18 inches of rain was recorded in May. I do not remember a more complete failure in orchard fruit than that of the present season. Bush fruit (with the exception of Black Currants (a generally safe crop, but this year a failure) is satisfactory. Strawberry crop specially abundant. *William Ingram, Belvoir Castle Gardens, Grantham.*

—— Of Peaches we have very few, and those only on the old trees. Apricots showed plenty of bloom, but very little of it set. Pears are very thin of good kinds; and the fruit much deformed. Apples are very partial, some trees bearing a good crop; all had a good show of bloom, but the greater part did not set, and the leaves have been very much eaten with caterpillars. Strawberries have been very fine, especially Sir Joseph Paxton, and now we are picking very fine fruit of MacMahon. Black Currants are a thin crop in some gardens. Red Currants a heavy crop. Gooseberries thin on the whole. Plums set a heavy crop, but have fallen off since. *G. C. Maynard, Cole Orton, Ashby-de-la-Zouch.*

Warwick. — A very disastrous year amongst Apples; the blossom had the appearance of being fairly good and plentiful, but probably the fruit-buds, owing to the wet, sunless season of 1888, were immature, hence the failure at setting time of all with the exception of some of the coarser varieties, such as Cellini, which is, indeed, crowded; Lord Suffield, that generally behaves so well, is this year with us barren. Pears on walls are better, but on standards generally speaking they are a failure. Plums with us are only poor and partial, but there are instances of good crops. Cherries are under the average of last year. Apricots are a total failure. Small fruits, such as red and black Currants and Strawberries, are plentiful and good. There will be few Hazel Nuts and Walnuts. *William Miller, Combe Abbey Gardens.*

—— All kind of fruit trees were very much eaten with caterpillars early in the season. Apples, Pears, Plums, and Cherries had an abundance of bloom, but it failed to set well; Strawberries have heavy crops, and are very fine; Gooseberries also are very good; black Currants with me are good, but they are generally very poor in this neighbourhood; red Currants are a good crop, but rather blighty. *J. Bowler, Caldecot Gardens, Nuneaton, Warwick.*

—— All wall trees are badly blighted—never have seen them worse, and stone fruit will be very small. Apples and Pears promise to be good, late rains having come just in time for them. *R. Greenfield Priory Gardens, Warwick.*

Northamptonshire.—Our Apple crop is very good; Wyken Pippin, Golden Noble, Lord Suffield, Cockle Pippin, are amongst the best. Strawberries have suffered very much from drought. Black Currants are a poor crop; but Gooseberries, red Currants, and Raspberries are plentiful. *G. Goldsmith, Floore Gardens, Weedon.*

Beds.—The prospects for an abundant crop of fruit in the blossom stages were most cheering especially Pears, Plums, and Cherries. Apples were very sparse, still there was observable a flimsiness in the petals which raised apprehensions, which, in the case of Pears, have been realised—they are a light crop. Cherries dropped badly at the stoning period; Plums are a good crop on some trees, they will require thinning; Strawberries have been an enormous crop, the size of the fruit being unsurpassed. *Wm. M. Baillie, Luton Hoo Park, Luton.*

—— The cold, sunless season of 1888 has produced a marked effect on the fruit crops this year. Through immature wood Apples and Pears are much below average, the foliage of the former being again eaten up by caterpillars. There are few or no Apricots; Plums are infested with aphides; Morello Cherries are fairly good. Strawberries have been a heavy crop; Raspberries good; Currants thin; and Nuts a failure. *Alex. McKay, Woburn Abbey, Woburn.*

—— The fruit crops in this locality vary very much, on the whole they are very deficient in quantity; we had plenty of bloom on almost all kinds of fruit trees, but the wood not being well ripened last autumn, and the east wind prevailing during the greater part of the spring, are, no doubt the principal causes of the deficiency of the crop this season. Strawberries are a heavy crop and good Currants and Raspberries abundant and good. Gooseberries rather thin. *Charles Turner, Cranfield Court, Newport Pagnell.*

Oxford.—Apples, Pears (except on walls), Plums and Cherries, are very poor, although promising so well early in the season. Peaches and Nectarines suffered much from blister and a good deal of last year's wood died back, probably through being immature. The early Peaches Amsden June, Alexander, and Waterloo, carry good crops, and the trees are very healthy. Apricots are very few, and small fruits abundant and good. No caterpillars attacked the Gooseberries this year. Strawberries are plentiful and fine. Nuts very scarce. Walnuts none, and the young wood, especially on the tops of the trees, is dead in many cases. *George Stanton, Park Place, Henley-on-Thames.*

Bucks.—Fruits in many places are very unsatisfactory indeed, and no wonder, if we consider the nature of the elements that prevailed last year, a superabundance of moisture causing a vigorous growth in the trees, and scarcely any sunshine to ripen it are conditions that naturally would result in this way, to some degree or other. The effect the frost had on the growth of Peach and Nectarine trees plainly proved the fact, as many of these were so injured that they had to be cut back very severely, and the crop is very light indeed. *G. T. Miles, Wycombe Abbey, High Wycombe.*

—— Our first Apple to flower was Early Peach, and it is bearing a heavy crop on small bush trees; many other varieties on small trees are only half a crop; Cox's Orange Pippin on large orchard trees are hanging "like ropes of Onions." Lane's Prince Albert is also bearing freely, and Blenheim Orange on trees that were root-pruned two years ago is bearing freely; others not pruned are barren. Trees as a rule, are healthy, and free from blight. *J. Smith, Mentmore, Leighton Buzzard.*

—— Apples and Pears are generally very thin in this neighbourhood, and may be considered a failure. The trees have also been infested with caterpillars—to a lesser extent than last year,—but look better since the recent showers, and making a cleaner growth. Plums and Cherries are a very light crop. Peaches and Nectarines on walls are a good average crop; the trees also look well. Strawberries have been very good; also Gooseberries, Currants, and Raspberries. Nuts generally are a failure. I notice

also the Oak and Beech are everywhere quite fruitless. *C. Herrin, Dropmore.*

—— Strawberries abundant, large, and of good flavour. Gooseberries, Currants of sorts, and Raspberries very plentiful and very large and fine. There was a splendid show of bloom for Apples and Pears, but, I think, owing to the wet and cold season of last year, and the very early and severe frosts, the wood did not come to maturity, so that it was not able to carry the fruit to perfection, although we had a good set. *J. Bone, Latimer Gardens, Chesham.*

Herts.—This season's fruit crop generally I consider bad. Strawberries are the only fruit that are over the average. Plums, Cherries, and Peaches are average. Apricots, Pears, and Apples are under. The crops of the two last named are not only small, but they are much damaged by a severe hail-storm we had on June 7. *G. Norman, Hatfield House Hatfield.*

—— The Apple crop here is a complete failure, although we had a fair show for bloom: I scarcely know which did the most damage—the birds in searching for the caterpillars and maggots, or the insects themselves—every blossom-bud being nipped off as though they had been clipped with a pair of scissors. Pears are much below average, particularly the late kinds. Plums of all kinds are also thin, and Damsons about half a crop; Apricots a partial crop, some trees bearing a fair crop, others none; Peaches and Nectarines an average crop, where the wood was sufficiently ripened last season. Strawberries rather under average, but good—season short, owing to the heavy rains after the hot weather in May. Gooseberries and Currants abundant crops, and good. *R. Ruffet, Panshanger, Hertford.*

—— The Apple crop was entirely destroyed by caterpillar, after setting well. Trees are defoliated, although they were washed with soot, lime, and sulphur during the winter. Pears are also suffering, especially pyramids, the trees on walls escaping. Apricots, very good; under protectors a full crop. Bush fruits of all kinds very abundant. The year 1889 will be noted for the size, quality, and quantity of the Strawberries. *J. C. Mundell, Moor Park Gardens, Rickmansworth.*

—— Apples blossomed profusely, but on examination a great deal of it was found to be defective, and on the great majority of the trees there is not now a single Apple. The varieties carrying a fair crop are Keswick and Dutch Codlins, Hawthornden, Norfolk Beaufin, Herefordshire Pearmain, and Fearn's Pippin. On lighter and warmer soils in the district there are fair crops of some varieties. *J. Kipling, Knebworth, Stevenage.*

WESTERN COUNTIES.

Gloucestershire.—Apples never looked more promising, but east wind and scorching sun during the blooming period prevented them from setting. What fruit there is, is damaged by insects, especially by the maggot. The trees before the second growth had the whole of the leaves perforated by the caterpillars. Pears are under average, but the fruit bids fair to be very fine. The rain in the early part of June, and the bright warm weather afterwards, suited Strawberries, the result being a fine crop. Bush fruit is very plentiful. Walnuts and other Nuts are a total failure. *A. Chapman, Weston Birt, Tetbury.*

Monmouth.—Apples blossomed irregularly in this district, and set fruit very scantily, and at the present time a good portion of what did set is dropping off, so that the crop is almost a failure. The "oldest inhabitants" do not remember such a light crop. Pears are partial and much beneath a full crop. Some trees on south walls, viz., Jargonelle, Flemish Beauty, Brockworth Park, Beurré Diel, and Easter Beurré have good crops. Plums blossomed freely, and the crop may be termed an average one. Victoria, Washington, Green Gage, and Kirke's are carrying the most fruit. Apricots did not flower well, but Cherries did, while both have thin crops; the quality of the latter is, however, excellent. Currants and Gooseberries have heavy crops, while Raspberries and Strawberries which were assisted with liquid manure had enormous crops of fine fruit. I think highly of the Waterloo Strawberry as a late kind. Seldom have we had fruit for preserving of such good quality, combined with such a favourable time for gathering. Nuts are very thin indeed. *Thomas Coomber, The Hendre Gardens, Monmouth.*

Hereford.—Apples and Pears, of which this county has more than 20,000 acres, are the lightest and poorest crop we have had since 1861. The flower buds at one time looked promising, but the loss of the first growth last year by grub, followed by unfavourable ripening weather, left the trees in so unsatisfactory a condition that experienced growers are by no means surprised at the result. The loss to this county alone cannot fall far short of £100,000. Plums are partial, inclining to light, and are badly blighted. Cherries on walls fairly good, in Orchards very thin. Strawberries plentiful and good. Bush fruits heavy and fine. Peaches clean and healthy crops, partial in some gardens, in others very good, and requiring much thinning. *W. Coleman, Eastnor Castle, Ledbury.*

—— Apples and Pears almost a complete failure, owing undoubtedly to the wet, cold, sunless summer of 1888. Trees which have hitherto regularly borne and perfected excellent crops, are absolutely without a fruit. Peaches, Nectarines, Apricots, and Plums are much under the average, so also are black and red Currants—black ones especially, the red being small and inferior in quality. Strawberries, Morello Cherries, Raspberries and Gooseberries are much over the average, indeed I do not remember having seen such a crop of Strawberries. *Richard Thomas, The Gardens, Downton Castle, Ludlow.*

Worcestershire.—The wretched season of 1888 is mainly responsible for the general failure of the Apple crops; owing to the imperfectly ripened state of the wood and buds, the flowers were so weak that they failed to set, and consequently dropped off wholesale. This was combined with the severest

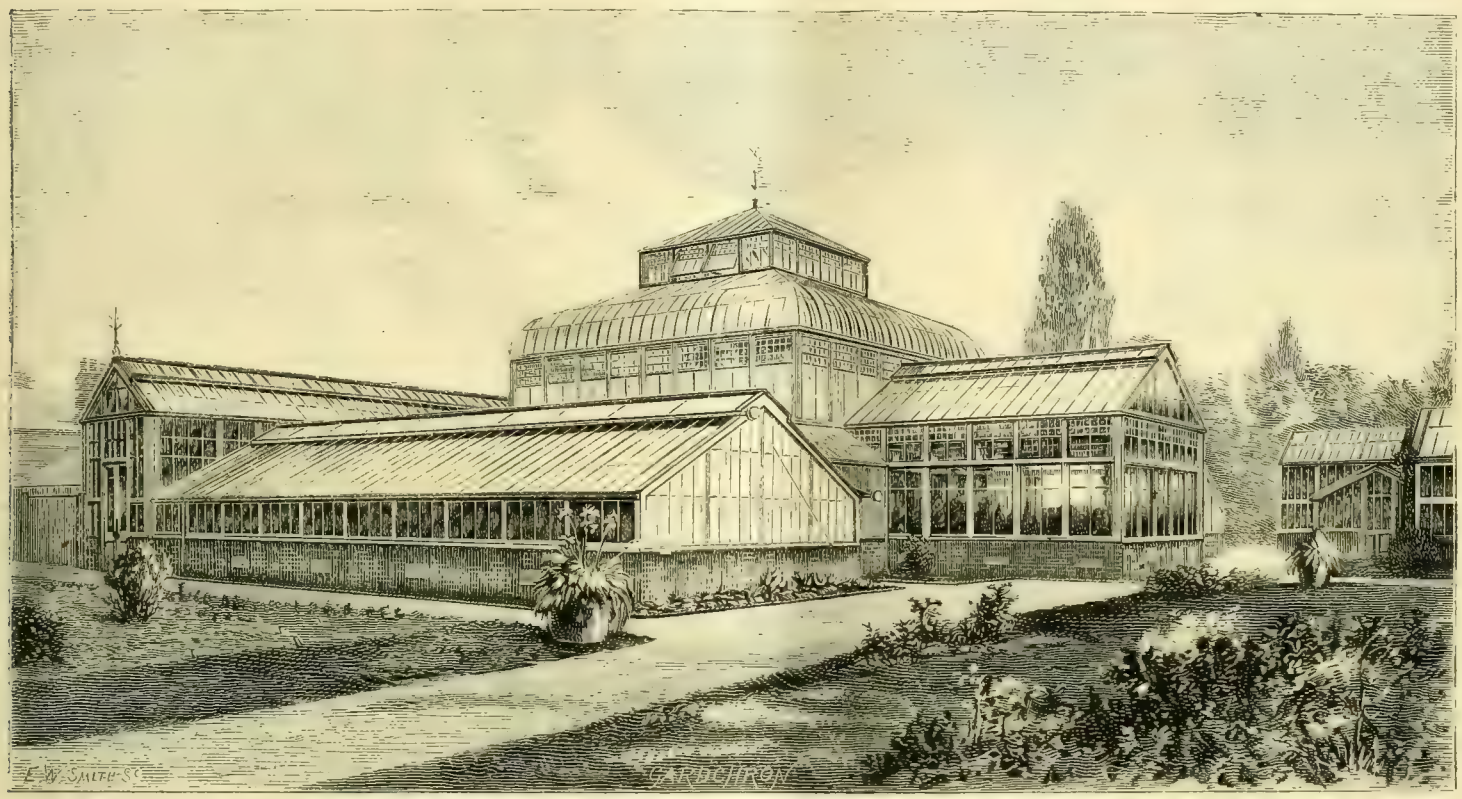


Fig. 19.—View in the Cambridge Botanic Garden. (see p. 126.)

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attack ever experienced in this locality of the winter moth and other caterpillars, which hatched out in myriads, devouring the little fruit which was apparently set, and completely defoliating hundreds of trees. At this stage hand-picking seemed to be the only remedy, but we hope to practise prevention in future, by using quicklime to the branches in winter, and the recommended smear of grease in the autumn. *W. Crump, Madresfield Court, Malvern.*

—— Taking it altogether, the fruit crops in this district are the worst on record. Apples are a complete failure; this I attribute in a great measure to the green unripened state of the wood, consequent on a wet summer; for although "aged" trees flowered fairly well, the blossoms were weak, puny, and undeveloped. The flowering period was followed by an attack of caterpillars, which in most instances denuded the trees of their foliage, from the effects of which they are only just recovering. Pears have to a great extent escaped the caterpillar, but the crop is a very light one. Plums and Damsons are fairly good crops, but these are partial. Peaches, Nectarines, Apricots, and Cherries are very light crops indeed, especially the last named; the growth is now all that can be desired, being clean and healthy. Bush fruits on the whole are plentiful and fine, the only exception being black Currants. Strawberries have been very fine, and the crop was enormous. *John Austen, Witley Court Gardens, Stourport.*

—— Although favoured in the garden, I am sorry to say that the fruit crop in our district is almost a failure. The ravages of the caterpillar have been almost past conception, and unless some remedy can be found, whole plantations must perforce be grubbed up, and the ground devoted to other crops. With us Apples look healthy, and the following are carrying full crops:—Worcester Pearmain, Hawthornden, Ribston Pippin, Chancellor, Sturmer Pippin, Keswick Scarlet, Nonpareil, Warner's King, and Prince Albert. Pears promise to be highly coloured; Bishop's Thumb, Beurré Rance, Beurré d'Aremberg, Louise Bonne, Easter Beurré, and Josephine de Malines are full crops. Bush fruits are a very heavy crop all round. Strawberries were a good promise, but spoiled by the drought. Apricots a fine crop and very clean. *W. Child, Croom Court, Severn Stoke.*

Salop.—After a most abundant bloom, our Apple crop is most disappointing, though some kinds are full crops, and need thinning, especially so Golden Winter Pearmain and Lord Suffield. Pears have good crops all round, also Plums, although Damsons are rather thin, and badly infested by red-spider. Peaches, Nectarines, and Apricots are "conspicuous by their absence." Strawberries have been more plentiful and better than for many years past. *A. S. Kemp, Haughton Hall, Shifnel.*

—— Apples, on the whole, are rather under average, still, some sorts are heavily laden; Warner's King, Stirling Castle, King of the Pippins, Tower of Glamis, Cox's Orange, Carlisle Codlin, Peasegood's Nonsuch, and Lord Suffield, are all very full of fruit. Of Pears, the best are Beurré d'Amanlis, Beurré Diel, and Doyenné du Comice. In Plums the best are Coe's Golden Drop, and Kirke's Black. *J. Louden, The Quinta, Chirk.*

—— The fruit crop in this district is very much under the average. Apples are very partial, in some orchards two-thirds of the trees are devoid of fruit altogether. The varieties which are bearing the best crops are Hawthornden, Lord Suffield, Queening Stirling Castle, Ribston and Cox's Orange Pippins' Winter Greening, Lord Burghley, and Pott's Seedling. Pears are an average crop, Marie Louise, Jargonelle, Williams' Bon Chrétien, Louise Bonne of Jersey, Doyenné du Comice, Easter Beurré, Beurré Rance, Sterckmanns, Diel, Forelle, Pitmaston Duchess, and Hacon's Incomparable are carrying heavy crops. Plums are only half a crop. Peaches, Nectarines, and Apricots are quite a failure, but the trees are making grand growth, and are very clean. Strawberries have done remarkably well, especially Black Prince, Vicomtesse, H. de Thury and President. All small fruits are plentiful and free from blight. *R. Milner, Sundorne Castle Gardens, Shrewsbury.*

Staffordshire.—Apples when in bloom promised very heavy crops, but owing, I presume, to the dull, wet, cold season we had last year, the bloom did not set well; however, we shall have good average crops of Keswick's Codling, Lord Suffield, Cellini Pippin, Blenheim and Small's Admirable; other varieties are thin. Strawberries are a very heavy crop and good. Currants, Black and Red, are abundant and good. Gooseberries are the lightest crop we have had here for years. *J. Wallis, Keele Hall Gardens, Newcastle.*

Cheshire.—Amongst the kinds of Apples having good crops are Lord Suffield, Stirling Castle, Hawthornden, Ribston, Cox's Orange, and Kerry Pippin. Marie Louise and Louise Bonne of Jersey Pears have fair crops; Jargonelle, Bon Chrétien, and others, have scarcely any. Plums are few, as are Damsons. Morello Cherries are an average crop, but the others poor. Small fruits are a very poor crop here, owing to the sparrows and other birds taking off the buds in spring. In the surrounding district the small fruits are, I believe, good. Strawberries are under with us, but this is partly owing to our having planted Sir Joseph Paxton; which is a variety that will not do here. *Robert Mackellar, Abney Hall, Cheadle.*

SOUTHERN COUNTIES.

Middlesex.—Taken generally, the fruit crop is only an average one. Small fruits are plentiful, especially Strawberries and Raspberries. Apples bloomed profusely, but did not set well. Culinary Apples are more plentiful than choice kinds. Keswick Codlin and Hawthornden have a fair crop. King of the Pippins, Irish Peach, and Cox's Orange, are the best of the dessert Apples. Pears are an uneven crop. Glout Morçeau, Beurré Diel, Marie Louise, Marie Louise d'Uccle, and Louise Bonne of Jersey, are the most prolific. Plums are only an average crop. Cherries are good on walls, Morellos especially so. Apricots are good on south walls, and a total failure on other aspects; the frost destroyed all the bloom on the west walls. Peaches and Nectarines are a very poor crop, but the trees are in a healthy condition, and are very clean. *Geo. Wythes, Syon House, Brentford.*

—— Pears, Apples, and Cherries are scarce, not through spring frost (the usual cause), but from weakness caused probably by the low temperature of last year. A large crop appeared to be set, but a great proportion dropped, and this failure continued long after the usually critical period. *R. D. Blackmore, Teddington.*

—— Apples and Pears though thin are now showing up well, and promise good size and quality. The early Apples of the district seem to be fruiting the best. Late kinds are very thin indeed. Hessel Pears in the market orchards fruiting fairly well, Bon Chrétiens thinly; Alexandre Lambre with me are still the best and most persistent average cropper on the Pear stock. Plums very thin indeed, Damsons also; Morello Cherries are fair this year; sweet Cherries moderate, but clean and good. Gooseberries a big crop in some gardens; in others very thin. Currants generally a heavy crop, black varieties especially. Raspberries very good also. Strawberries a wonderful crop. Very little wall fruit grown about here, and that little is very thin indeed. Nuts seem to be a totsl failure. *A. Dean, Bedfont.*

Surrey.—The crops of Apples and Pears in this district are a total failure. Pears were rather shy in flowering, owing to the immature wood of last season, but they set well, and began to swell freely. The Apple bloom was more plentiful, and of more substance than the Pears; these also set freely. Plums, again, were set in clusters on every branch, and everything looked promising for a bountiful fruit return. Then came the plague of caterpillars, which devoured the whole of the fruit and leaves, so that the trees were as bare as in January. This district suffered much more than others, owing, I think, to the quantity of Oak plantations and timber which surround us, and where the moth seems to harbour. For miles around, the Oaks seemed as if there had been a fire underneath them. Strawberries have been an exceptionally fine crop, both in size and quality; also Currants and Gooseberries. Raspberries are a very fine crop, and of good quality; Cherries and Peaches are fair crops on walls. *A. Evans, Lythe Hill, Haslemere.*

—— Our fruit crops of all kinds except Strawberries are very much under average. We have not had such a short crop of Apples for years. Pears are rather better than I had expected at one time. Black Currants are a very short crop, while red are fairly plentiful. Raspberries are a very good crop, and fine. Strawberries are the one exception to the general failure, and they have been very abundant and fine. *J. Burnett, The Deepdene Gardens, Dorking.*

Kent.—The fruit crop in this district is, on the whole, abundant, excepting Apricots, Pears, and Nuts. Strawberries and Raspberries especially good, but the Strawberry season was short; recent rains are prolonging Raspberries. Bush fruit good and clean, trees free from caterpillar and aphis. *Fred. Moore, Blendon Hall, Bexley.*

—— The Apple crop in this district is very small indeed, the ravages of the caterpillars in some instances having deprived the trees of nearly every leaf of the first growth. Gooseberries are fairly plentiful, as are Currants and Raspberries, the latter in these gardens being above the average in size and quantity. Peaches and Nectarines on walls very light indeed, though covered with bloom in spring. Strawberries here only average as to crop, and short as to season, owing to excessive heat and drought. Figs on walls promise to ripen earlier than usual, and are a good crop. *G. A. Don, Bedgebury Park, Hawkhurst.*

—— The fruit crops here are far below the average, with the exception of bush fruits and Strawberries, which are plentiful and good. Apples and Pears are scarce. Apricots and Nuts are a complete failure. Peaches and Nectarines very thin. Plums about half a crop. Damsons thin. We had a magnificent show of blossom on all orchard trees, but to the previous year's unripened wood and a plague of caterpillars may be attributed the failure. The trees have, however, made sturdy growth, and are now clean and healthy. *C. Sutton, Chevening Gardens, Sevenoaks.*

Sussex.—The spring was late, the blossom most beautiful; but the weather was very hot, and the setting was deficient both in Apples and Pears. Old trees which made but little wood last year and consequently matured it better, have borne the best crops. We have abundance of the following Apples (garden 400 feet above sea-level): Northern Greening, Hawthornden, Duchess of Oldenburg, Stirling Castle, Colonel Vaughan, Codlin, White Paradise, King of the Pippins, Orange Pippin, Besspool, Old Nonsuch, Winter Nonsuch, Evagil's, Betty Geesson, Ringmer, Tower of Glamis, Hoary Morning, Easter Pippin, Adam's Pearmain, Blenheim Pippin. *Joseph Rust, Eridge Castle, Tunbridge Wells.*

—— The Apple crop in this district falls short of 1888, although in the gardens here we have an average crop of good quality. The rains of the past fortnight have been very beneficial—we had no rain whatever in June. The foliage generally is strong, clean, and full of vigour. The maggot appeared on our Apples again this year, but we were able to get rid of the pest. Pears with us did not show much blossom. We are under in crop and in quality; other persons hereabout speak more favourably. Small fruits are abundant, clean, and good. Strawberries were with us good in every way, and fully a week earlier than usual. Vicomtesse H. du Thury still holds the sway with us. *H. R. Holme, Ashburnham Gardens, Battle.*

Hants.—The season in some respects has been more disastrous than that of last year. Apples are a total failure. The Caterpillars literally stripped the trees of every vestige of foliage and blossom. Pears were also similarly, but later attacked, so that

heavy thunderstorms washed away the depredators before they had completed the destruction of the crop. Fruit trees on walls that were repeatedly washed with a powerful garden-hose are carrying fair crops; but obviously such a mode of preservation is only practicable on a very limited scale, and if hardy fruit—so called—cultivation is to depend on these means, the words that one so frequently hears, namely, "Fruit growing for profit," must be obliterated. *W. Wildsmith, Heckfield Gardens, Winchfield.*

—— The Strawberry season in this neighbourhood has been the best yet experienced, the fruit being of remarkable quality. Two varieties mainly are grown by the market men; namely, Alice Maud and Sir Joseph Paxton. Bush fruits are excellent crops, the quality being very good; Gooseberries are especially heavy. *Edwin Molyneux, Bishops Waltham.*

Berks.—Apples, Pears, and Plums showed abundance of bloom, but a very small percentage set. This I attribute to the wet season of 1888—the wood being imperfectly ripened. Standard Pears and Plums almost a failure. Apples: Blenheim Orange, Lord Suffield, Irish Peach, King Pippin, and Hanwell Souring will give us the best returns. Strawberries were never more plentiful and fine. Raspberries, Currants, and Gooseberries in abundance. *J. H. Rose, Lockinge Gardens, Wantage.*

—— That the fruit crop this year is a partial failure is the direct result of the wet, almost sunless summer of 1888. Apples, Pears, and Apricots, are much the worst with us, the first-named especially so, the best being Carlisle Codlin and Ribston Pippin. Strawberries have been very good indeed, but were soon over. Noble is a grand acquisition among the earlies, and will be planted largely. *Wm. Pope, The Gardens Highclere Castle.*

Wilts.—At the time the fruit trees were in flower, the prospect of a good all-round year of fruit was great, and although the fruit crop for 1889 will fall far short of expectations, it will be by no means a very bad one. It is true the Apple crop is almost a failure, and Pears are not much better. Plums, too, are a poor crop, except Green Gage, which were protected while in flower, and the young vigorous trees of these are not so well cropped as the old trees are, both being protected while in flower. The cause of this is not far to seek; the wood of the latter was less sappy, less strong, and consequently better ripened than that of the young, vigorous shoots. The hailstorms in June, together with the plague of caterpillars, are answerable for the scarcity of Apples, Pears, and Plums generally. Peaches, Nectarines, and Apricots, are plentiful enough here, as also are Strawberries and bush fruits. *H. W. Ward, Longford Castle, Salisbury.*

—— The fruit crops in this district cannot be said to be good all round. Apples in some orchards are a heavy crop, while in others not an Apple can be seen. Pears are not good, taking them altogether, but there is a fair sprinkling of many good kinds, such as Marie Louise. Plums are good, especially Greengages. Small fruits and Strawberries have been excellent in every way. *C. Warden, Clarendon.*

SOUTH-WESTERN COUNTIES.

Somerset.—Apples are the worst failure noted for many years. The trees flowered freely, but much of the blossom was weak, and hence failed to set. Garden trees are fairly well furnished with fruit, but those in orchards are very thinly cropped indeed. Pears are very partial, and Plums have failed in the open; but wall-trees are carrying good crops. Trees were very dirty at one time, but are recovering well. Apricots, under copings especially, set better than was expected, and Peaches on a south wall are now doing well. Cherries fairly abundant. Small fruit, including Strawberries, never more so. *W. Iggulden, Marston House Gardens, Frome.*

Devon.—Apples and Pears promised well, the amount of blossom being great, but did not set well. Plums, although wearing a very promising show at first, were attacked by aphis, and do not now promise well; the fruit will be small and the crop partial. Peaches, Nectarines, and Apricots, are very good. Small fruits are fair, but not very good, particularly in the case of Black Currants. Strawberries were very fine, but their season was a short one. *James Enstone, Wear, near Exeter.*

—— The Apple crop bids fair to be a good average, the trees were very late in coming into flower, and since that time they have received no check whatever. Pears are scarce, especially late kinds. The trees were very much blighted, but there are good crops of Williams' Louise Bonne, Gratioli, Doyenné du Comice, and a few others. Plums are abundant in most places, also Cherries Peaches and Nectarines are a light crop, the trees were a little blistered early in the season, but are now very healthy. Small fruits are plentiful. The Gooseberry crop is enormous. *Geo. Baker, Membland, Plymouth.*

Cornwall.—The Apple crop is very partial, in many places most abundant, in others almost a failure. Pears, Peaches, and Nectarines are very thin, but the trees have made clean, healthy growths. Small fruits of all kinds are most abundant and good; Raspberries the finest I ever saw. *James Murton, Pencalinick, Truro.*

—— The fruit crops in this neighbourhood were much injured by the hailstorms and cold winds which prevailed through the first week in June, consequently we have barely an average crop, and in unsheltered orchards the crop is below the average. So great was the check that Apples and Pears received when in embryo, that they were quite deformed; fine weather set in on June 12, and continued for a month, which pulled them through, and caused a rapid improvement. *Charles Lee, Boconnoc, Lostwithiel.*

WALES.

Denbigh.—The long-continued wet and cold summer, followed by severe frosts about the end of September and beginning of October, with 18° of frost in the middle of that month last year, precluded all hope of good fruit crops for this year. The wood being quite unripe, the blossom on most varieties of fruit trees was so weak that, although we had a favourable spring, they could not set. *P. Middleton, Winnstay, Ruabon.*

Pembroke.—Pears did not bloom well in this district this season. Apples are a very fair crop generally. With us the Blenheim Pippin and Alfriston are especially fine crops, as are also the choicer varieties on walls. Plums bloomed well and gave great promise, but the crop was destroyed by the cold, wet, windy weather which prevailed while the trees were in bloom. *Geo. Griffin, Slebech Park, Haverfordwest.*

IRELAND.

Dublin.—Apples are far below average; indeed, many good cropping varieties are nil this year. Pears are the poorest crop we have had for many years, and Strawberries are a failure, in consequence of the long drought here. Plums are a good crop; Cherries under average. Apricots and Peaches are a failure—due, no doubt, in a great measure, to want of sun to ripen the wood last year. *G. Smith, Viceregal Gardens, Dublin.*

—— Apples are generally a fair crop, and in some cases the trees are very heavily laden with fruit. The Irish Peach Apple is a case in point, and Codlins are yielding heavy crops. In some districts the Apple maggot has proved injurious. Peaches, Nectarines, and in some cases Plums and Apricots dropped their fruit after it had set, this being probably due to the unripened state of the last season's growth. The Strawberry and Raspberry crop is large and of fine quality. *F. W. Burbidge, Trinity College Gardens, Dublin.*

Clare.—Apples are a very light crop on account of wet, cold weather during blooming time. Pears with us did not suffer so much, being sheltered by walls. Plums on walls are very good. Standards almost without fruit. Cherries, all about this neighbourhood, extra good. Peaches just live outdoors. All small fruit is very plentiful and good. Strawberries excellent. *William Rutherford, Dromoland Gardens, Newmarket-on-Fergus.*

Kilkenny.—Apples in sheltered situations are a fair crop, but where much exposed they are almost a failure. Pears in general are a very light crop. Amongst Plums, Victoria is a very heavy crop. Strawberries were remarkably fine, and small fruits in general are abundant and good. *William Gray, Woodstock, Inistioge.*

CHANNEL ISLANDS.

Jersey.—Small fruits, Currants, Gooseberries, Raspberries, and Strawberries are abundant; Plums are above the average; Peaches and Nectarines are a fair crop, but there is an evident diminution in the quantity of Apples and Pears, especially of the earlier kinds; Apricots are below the average. A period of drought during the month of June, caused quantities of Cherries to drop off the trees, and lessened the crop considerably. Tomato plants suffered much in their growth during the dry weather, but appearances are now more favourable. *Chas. B. Saunders, St. Saviour's.*

Scilly.—What little fruit is grown on the Islands is good this season. Strawberries went off very quickly by reason of the very dry weather and our light soil; Apples are very good and the trees nice and clean; Pears suffered somewhat from cold winds in spring; Plums are fairly good, and small fruit abundant. *Geo. D. Vallance, Tresco Abbey Gardens.*

Orchid Notes and Gleanings.

ORCHIDS AT MESSRS. J. VEITCH & SONS.

The pretty new rock-house added to the fine block of Orchid-houses at the Royal Exotic Nursery is now, as ever, a pretty sight, with showy, rare, and curious Orchids, arranged with a natural grace with Ferns, or suspended so that their panicles droop over the rocks and foliage and flowers beneath. A number of fine Cattleyas and Lælias are now to be seen there, with representatives of other Orchids in season, among which some noble Oncidium macranthum contribute their heavily-laden twining flower-spikes. Among the rarer plants in bloom were observed the pretty New Guinea Dendrobium chrysolabium, and a charming white form of it; the rich golden-flowered Acineta chrysantha, the new Sobralia xantholeuca alba, Angræcum Scottianum, Cattleya Schofieldiana, and various pretty forms of Miltonia spectabilis and M. vexillaria.

The Cypripedium-houses contain many rare species in bloom, and among them the rare and beautiful C. Tautzianum; and the other houses have a goodly supply of flowers for the season. *J. O'B.*

Phalænopsis Mariæ.

Of the more recently discovered species of Phalænopsis this is probably the prettiest. Although it has not the striking appearance of the larger-flowered P. grandiflora, it is not surpassed by any in the grace and delicacy of its blossoms. It is figured in the *Botanical Magazine*, t. 6964, from a plant which was presented to Kew by Messrs. Low, and which flowered there in 1887. This plant is now in bloom, and bears a pendulous, branching raceme of sixteen flowers. Individually, these are 1½ inch in diameter, the sepals end petals being white, marked with a few large reddish-brown blotches. The lip is mainly of a reddish-purple, the margin being white; on the disk it is thickly clothed with white hairs. The species was discovered by Mr. J. W. Burbidge on the main island of the Sulu Archipelago, and at present is a rare plant in cultivation. *W. B.*

Acineta densa, *Lindl.*

When noting the long-lost Acineta chrysantha, Lindl., the other day (p. 94), two other plants were

mentioned as showing flower in the Kew collection. Both are now expanded, and belong to the well-known A. densa. The two species bear a rather close resemblance to each other when not closely examined, as they have much in common, both in form and colour, though even in this they are not identical; but on looking at the details of the lip they are seen to be markedly different. A. chrysantha has a long curved horn arising from the very base of the crest behind, and directed backwards to the base of the column; in A. densa the horn is very short and stout, quite erect, and situated a little distance from the crest—quite clear of it, at least. Both are decidedly handsome, and as it is possible that the rarer one may have been sometimes overlooked, on account of its close resemblance to the other, it would be well for those who have plants to give an eye to these characters, and thus detect any possible mistake. *R. A. Rolfe, Herbarium, Kew.*

—— The genus Acineta consists, at the present time, of eight or nine species, all of them ornamental Orchids, the species under notice being one of the best. Several plants are now flowering finely at Kew, in baskets suspended from the roof, the thick, pendent flower-spikes proceeding from the bottom of the basket. When spread out the flowers measure 3 inches in diameter, but they do not open to their full extent. The sepals are broadly oblong, and somewhat hood-shaped, deep yellow in colour, faintly spotted with purple; the petals are spathulate, not so large as the sepals, and more distinctly spotted. The lip is rich in colour, the yellow ground being partly covered with blotches of deep red. One plant has a spike 1 foot long, bearing sixteen flowers.

On account of their easy culture and characteristic appearance Acinetas should find a place in all collections. During growth they require to be kept in an intermediate-house, and removed to a cool-house when in flower. The habit of pushing their flower-spikes from the bottom of the plant renders basket cultivation preferable. For the same reason it would be improper to use flat crocks in the drainage, but by having baskets of not more than 2 inches in depth, and placing a few pieces of charcoal, covered with good sphagnum, on the bottom, no impediment is offered to the downward course of the roots. A compost of peat-fibre, sphagnum, and small crocks is well suited for all the species. *W. B.*

A NEW RACE OF LILACS.

There may be found in some gardens still, a very old variety of the common Lilac under the name of Syringa azurea plena. I do not know the origin of this plant. It produces small panicles of clear-coloured flowers, in each of which there are a number of corollas arranged one within the other. It is a teratological curiosity, but as an ornamental plant quite destitute of value, as the rare flowers are quite hidden by the foliage. This variety, as the flowers have no stamens, and the pistils are either abortive, or so hidden among the numerous corolla-lobes as to be beyond the reach of insects, does not produce seeds naturally. But it will sometimes seed with the aid of artificial fertilisation; and seeds secured in this way produced the first of the double-flowered Lilacs introduced during the last few years.

It is eighteen years since this plant, artificially fertilised in my nursery with pollen of various Lilacs, bore a few seeds, which afterwards germinated. Some of the best varieties of Syringa vulgaris, such as Ville de Troyes, sanguinea, &c., were selected as pollen-parents in this experiment, and the pollen of Syringa oblata, a species remarkable for its early flowers and for the brilliant colouring of its foliage in autumn, was also used. The characters of this species, to which an article recently published in *Garden and Forest* has called attention, were transmitted to one of the seedlings derived from this cross. This was first sold under the name of Syringa hybrida hyacinthiflora plena. The term "hybrida," which is found still on the catalogue of the Maison Lemoine, was used to show that this plant is a true hybrid between two species of Syringa.

Syringa hybrida hyacinthiflora is already out of flower, although the flowers on most of our Lilacs are only just opening; and in autumn it is exceedingly ornamental, with its brilliant red foliage. The panicles of flowers are large enough, although the corolla-lobes of the double flowers are narrow and reflexed. But the production of this plant was a step in the right direction.

The other seedlings from this first crop of seed showed no trace of the blood of S. oblata, but there were some of them which were handsomer than S. hyacinthiflora plena. The best plant of this set was sent out under the name of S. vulgaris Lemoinei. The thyrse of this plant is 8 inches long, and covered with lilac-blue double flowers, with numerous imbricated corolla-lobes. A number of other good varieties were in the set differing from S. vulgaris Lemoinei in the shape of the flowers, in their colour, in the colour of the flower-buds, or in the shape and size of the thyrse. These varieties are Renoncule, rubella plena, Mathieu de Dombasle, and Le Gaulois. An attempt was made as soon as these different varieties flowered to get seeds from them, and the old S. azurea plena was discarded as a seed-bearer. The best single-flowered varieties with flowers of different shapes and colours were used to cross with the new double-flowered race, and pollen from the flowers of S. chinensis, even, was tried; but this last experiment produced no results. A new set of seedlings was obtained from the second cross, and among them were some very remarkable and beautiful plants. From this sowing came Alphonse Lavallée, Michel Buchner, President Grévy, pyramidal, M. Maxime Cornu, &c. Here we have, in addition to the form and colour of the flower, remarkable variations. The corolla-lobes in one variety are round and flat, resembling a Ranunculus; they form in another a globular head, with the lobes all incurved; in another they are all reflexed; and in another they are crumpled.

I will not give now a detailed description of each of these varieties; and it need be said only that we are constantly experimenting with double-flowered Lilacs, and that each spring-time sees a new set of flowers produced, with forms and colours entirely unknown before. Nearly all the shades of colour found in the flowers of single Lilacs have been produced already in this new race. Shades of blue are represented by A. Lavallée, Michel Buchner, President Grévy, and Léon Simon. The darkest reds appear in Comte Horace de Choiseul and La Tour d'Auvergne; a delicate rose in Virginité; and we have now obtained a variety with large, pure blue flowers. This has not been sent out yet, but it will appear next week at the Exposition in Paris. *V. Lemoine (Nancy, April 18), in "Garden and Forest."*

PLANTS AND THEIR CULTURE.

Miscellaneous Hints on Stove Plants.—Some amount of attention is now required by the Amaryllis, affording a light sunny position to the bulbs, thereby assisting the ripening. Never let the foliage get drawn, or the bulbs be checked by want of water and bottom heat, both being necessary for good growth, and should not be withheld till the bulbs have completed it.

Plants grown to bloom in winter should be examined, and if needed, cuttings may be put in. Plants of Eranthemum pulchellum are valued in winter for the cheerful blue of their flowers. The last Poinsettia cuttings should be struck singly in small pots, and flowered in them, no repotting being necessary after this date. Cuttings of Euphorbia jacquiniflora rooted late are also effective in the same way, that is three or four cuttings in a small pot, but giving the potful a small shift when fully rooted. The early struck Poinsettias and Euphorbias should now be repotted and kept growing rapidly, and any that have filled their pots with roots should be afforded manure water of some kind—taking care as the plants complete their growth to cease feeding them. Plants of Plumbago rosea should be put into a light position, repotting all the young ones, and placing them on a shelf near to the roof. Healthy points of any variety of Croton taken off and struck now, will be useful in winter. A stock of Panicum variegatum, Isolepis gracilis, and Tradescantia zebrina, T. quadricolor, &c., should be secured; also Selaginellas in variety, putting the latter into pans, boxes, pots, or in rich borders. Winter-flowering Begonias should be kept growing freely, giving small shifts when necessary. These species of Begonias flower best when young, in pots of 5 or 6 inches in diameter. This will apply to many of the plants that bloom in the winter, as then some kind of fertiliser can be given them. Specimens of Begonia Knowsleyana and B. insignis which have been in bloom may be cut back, partially shaken out of the soil, and repotted, keeping them close for a few days, and giving water with care. Many of these winter bloomers, as they increase in size, may be removed to cool frames. Poinsettias will be dwarfer by being grown in this way. Epiphyllums should now be exposed to as much sunshine as is possible, removing them to a cooler house as their growth is ended. A shelf in a vinery will be a suitable place, if they are free from mealy-bug, or scale insect. Allamandas which are in full bloom will take abundant supplies of liquid manure. Bougainvillea glabra should have the weaker shoots removed, and a rest in a cold house, if required to bloom later in the year. Gardenias should now be growing freely, and must be well syringed. Gardenia cuttings struck some weeks since will now be ready to pot up. Plenty of moisture should be afforded to Ixoras when growing freely, and the plants kept in a clean condition. Ixoras in flower are best when put into a dry and cool house. A sharp watch should be kept on all plant insects about this date, to prevent the disfigurement of the new growth. More air and less shade will now be necessary in the stove. Any pot-bound Ferns may yet be shifted, and young plants from spores, potted and kept close till they become established. A batch of Adiantum cuneatum may be placed in a cool house for late cutting. Tree Ferns should have abundance of moisture, syringing the trunks three or four times daily. All fronds of Tree Ferns which may be infested with insects are better if removed and burnt, and less badly infested fronds cleaned with an insecticide. A light fumigation will be found beneficial if given at frequent intervals. Damp down all available places, but do not syringe the plants overhead. Filmy Ferns keep cool and moist, shading them heavily and dewing them over frequently, but keeping the atmosphere fresh. *G. Wythes, Sion Gardens, Brentford.*

THE ORCHID HOUSES.

Resting Orchids.—The deciduous Dendrobiums are now rapidly advancing towards completion of their growths, and it is well to look out for a convenient place with a cooler temperature and drier atmosphere than they have been in of late, where they may ripen their pseudobulbs; but in doing this it is better not to be too hasty in removing them from their growing quarters to that assigned for resting, but rather to await the fading of the leaves, which, taken in conjunction with the fully matured look of the pseudobulbs, is a sure sign that the time for restricting the amount of water has arrived. Drying-off should not be too rigorously practised, but a little water should be afforded the plants from time to time in order to keep the pseudobulbs plump, for should shrivelling be allowed, it will be at the expense of the next year's growth. In places where general gardening is carried out, one of the vineries or other plant house which is kept tolerably airy and unshaded, is a suitable place for resting deciduous Dendrobes; but where the Orchids are confined to their own quarters a resting-house or subdivision of a house should now be set apart, as, in addition to the Dendrobes, we shall have later the Calanthes, Pleiones, Catasetums, Mormodes, and other species, which will require to be placed at least where a strict guard may be maintained over the water supply until the leaves have dropped and the time for growing comes round again. Even the evergreen Dendrobes, densiflorum and thyrsiflorum, are improved in vigour by being removed to cooler and airier quarters in a resting-house, after the growths are completed, but more water should be given to these than to those which lose all of their leaves annually.

Insects.—These plagues run rampant among the plants which are put away for the fall of the leaf,

and increase and spread very soon among the growing plants, where they do much mischief; the resting-house should therefore be as strictly attended to in the matter of the destruction of troublesome insects as the other houses.

While on the subject of resting plants, it may be as well to remind growers of Orchids that all the plants require a certain period of rest after their growth. The habits of the plants, however, should indicate the nature of the rest, taking into account also the climate of the country whence they come. It is very easy to overdo the resting or drying off even of strictly deciduous Orchids, but where a period of rest is afforded in a reasonable manner, it is beneficial for both deciduous and evergreen species, tending as it does to mark the seasons of growth and of rest from growth, and ensure the doing of only twelve months' work in the year, which is one of the cardinal points to be observed in Orchid culture.

For those who carry it out carefully, I am sure that a sojourn out of doors, in a sheltered place, during that part of the summer in which their pseudobulbs are made up, is good for many upland Brazilian and other Orchids of hard texture, and especially Oncidiums of the O. crispum and O. concolor section, Schomburgkias, Mexican Lælias, &c., but, of course, the plants require much looking after. All Disas and other South African terrestrial Orchids grow vigorously in a moist shady place outdoors with me, and the method of standing them outside seems the more rational way of treating them during our warm season, as it is the coolest in their native habitat.

The temperatures for August should be:—Warmest-house, 75° to 85° by day, 65° to 70° at night; intermediate-house, 70° to 80° by day, 65° at night; cool-house, 60° to 70° by day, 55° at night. Degrees Fahrenheit. These degrees of heat to be maintained, or even slightly exceeded by sun-heat by day, when possible. *James O'Brien.*

The Flower Garden.

Tuberous Begonias.—The value of these plants for the summer flower garden has not been as yet fully recognised, but I will say that the newer varieties are some of the finest summer-flowering bedding plants which we possess. We make use of them here in quantity, and not a single plant has failed to grow or flower well. Numbers of the plants are over 18 inches in height and nearly as much in width. Rain does not damage the flowers in the least, which present a contrast to the Pelargoniums, now looking seedy in the extreme after the late rains. They are used here in a variety of ways—singly as "dot" or sentinel plants on an undergrowth of Gnaphalium lanatum, and in some instances of Sedum glaucum; also intermixed with small Retinosporas and Euonymus in round beds 7 feet across, the edging of which in all cases is a broad band of variegated Mesembryanthemum, and likewise in a mass by themselves, after the manner of zonal Pelargoniums. This last way is, I think, the least effective, and will not be repeated; but the other modes of arranging them will be extended. I ought, perhaps, to add, that my Begonias are all of the single flowering seedling varieties, and only those with extra stout petals are selected for the seed-parent. The best plants now in the beds are those which were raised from seed sown in the spring of 1887.

Violas.—Good as many of these are for summer bedding, they must take a place after the Begonias, except, of course, in respect to hardiness, this latter quality rendering them of greater value than those, to all who have not the necessary glass structures for raising them. My reason for alluding to them in connection with Begonias, is, that we have them planted out with small Japanese shrubs in the same way as the Begonias are employed; and, except that the colours are not vivid, the effect is just as good. Some persons would probably prefer the quieter colours of the Violas to the scarlet and rose colours of the Begonias; both are excellent, and all points considered, I question whether there are any other low-growing plants equally suitable for summer bedding. Here, in the south, complaint is frequently made that Violas do not stand the hot sunshine we sometimes get, but this is a mistake. The soil here is of a light description — the very worst for Violas, and yet there is no difficulty about having the plants in full flower throughout the summer. It is simply a matter of deep digging and free manuring, with the addition of a mulching of cocoa-fibre in summer time. Partial shade, I grant, is desirable, but it is not essential. The shade that small shrubs afford in the arrangement named above, as well as that obtained by using the Violas as undergrowth plants to Dahlias and subtropical plants, is beneficial to them, and they are excellent for use in this way.

General Work.—Trim evergreen hedges, but do not shear them in too closely. Yew, Box, Cypress, and Privet, may be clipped, but Laurels should be cut with a knife. Cypresses, and Retinosporas in vases, and planted in beds, and on the lawn between the flower-beds, should have any straggling shoots cut back so as to preserve compactness of form. Box edgings should have first attention; and edgings of Sedum, Hernaria, and moss-like plants generally, that are used as edgings to flower-beds, should now have a final clip-over with a pair of sheep-shears. The plants in the beds should, once a week, have all seed pods and flowers past their best removed, and as they become crowded the weaker shoots may be cut out, these shoots for the most part serving as cuttings. *W. Wildsmith. Heckfield.*

Fruits Under Glass.

Grapes in Process of Colouring. — Abundance of air day and night, whenever the weather is not unfavourable, should be afforded these Vines, and except in dull, cool weather, no more heat is wanted in the hot-water pipes. Water should be given freely to all borders, inside and out; and, as aids to growth, the drainings from the manure-heap, diluted, or soot and fine bone-meal sprinkled on the borders and washed in with clear water, are all beneficial at the present time. Continue to syringe the Vines from which the Grapes have been cut on fine days in the afternoon, and employ an occasional wash of carbolic soap to keep all injurious insects at bay. Give air in plenty, and keep the laterals pinched back. Where there are both inside and outside borders to the early houses, if desirable, one or the other of them may be examined, and, if necessary, remade, thus affording the roots time to obtain a hold on the fresh soil before the cold weather begins. When this work is undertaken the house should be shaded a little on sunny days, and a damping down will be necessary for a week or so—just sufficient to keep the foliage healthy, and from flagging; or, in lieu of the renewal of a border, the surface soil may be renewed down to the roots, and new material to the depth of 6 or 8 inches be added, and in this manner coaxing the roots to the surface, and giving renewed vigour for another year or two. Pot Vines should have plenty of air, and be well exposed to the sun to ripen them off, stopping all lateral shoots, and attending to the watering.

Figs. — Syringe trees twice a day that are swelling their fruit, and give manure-water, airing early in the morning, and shutting up for a short time in the afternoon; but affording air again at a later period. Trees that have finished bearing for the season should have air in abundance, and be syringed heavily on fine afternoons, simply reducing the amount of air at that time. An occasional thorough damping with 2 oz. of carbolic soft-soap to 1 gallon of water will keep the leaves clean, and improve their appearance. Do not stint the roots of water; and the early plants may be stood outside in a warm sheltered place, and exposed to the full sunlight, giving them an occasional syringing. See that the shoots do not get crowded, and thin out all weak and straggling shoots. *W. Bennett, Rangemore, Burton-on-Trent.*

The Kitchen Garden.

Pot Herbs.—Mint, Tarragon, Savory, Basil, Marjoram, Sage, should be cut according to the needs of the family, doing it as they approach full flower. Spread out the herbs thinly in the shade to dry, and when sufficiently dried, tie them up in handy bunches, and hang them under the roof of an airy dry shed. Pick the flowers of the Camomile when dry and the sun is shining on the flowers, spreading them out thinly on paper in a dry room until dry enough to store in bags. The blooms of pot Marigold should also be cut, taking them with the stems, but without foliage; tie up in bunches, and hang up in the shade to get dried, afterwards storing the flowers in paper bags.

Winter Spinach.—It is better to make two sowings of this in the first half of the month. A run-out Strawberry brake is very suitable for this crop, and preparatory to sowing the seeds the ground should be trenched or double dug. My plan is to take out an opening 2 feet wide and two spits deep, the Strawberry plants and mulching of straw being then skimmed off the next 2 feet and thrown evenly into the bottom of the trench; one spit is then turned over, and some rich rotten manure is spread on the top, another spit is then turned over and levelled, and so on until the whole has been trenched. In ordinary seasons, and on the generality of soils, Spinach will stand the winter if sown on the level, and it is only under very exceptional circumstances that it is necessary to adopt other means, or to grow it on ridges. Where this has to be done a sheltered situation should be selected, as the plants, owing to the nature of their leaves and root, are liable to be twisted and blown out of the ground by winds. If at all practicable sow on the level. When the plants have developed two pairs of leaves, thin them out until they stand about 9 inches apart. Keep the hoe well plied amongst the plants to promote a healthy growth and keep down weeds. The distance between the rows should not be less than 18 inches.

Tomatos.—Fruits have set very badly out-of-doors this season. Keep all lateral and sublateral growths completely removed, and securely fasten the main stem to prevent its being injured. Where convenience for growing the plants under glass exists no time should be lost in getting some planted to produce a winter supply. A light airy house is the best place in which to grow these, and they should be trained under the glass if for winter use; but where convenience does not exist for this mode of cultivation they may be grown in pots. Cuttings inserted now will speedily root, and produce fruit at a time when ripe tomatos are scarce. If young stock have not been reared, some of the older plants may be trimmed in and started.

Cucumbers.—As the days shorten less moisture will be required for these when growing on hotbeds, and when watering is necessary, let it be given as early in the day as possible, the sashes being removed for a short time afterwards, to allow the foliage to become dry, or else have recourse to shading. The linings will now have to be renewed from time to time, to keep up the necessary warmth; some covering should also be put over the glass at night when the sun declines, and removed when the sun strikes the frames in the morning. In order to keep up a supply during winter, the pit or house, which should be well provided with heating apparatus, should be got in readiness by being well scrubbed inside, and painted where necessary; and about the second week of this month seeds should be planted on little mounds of soil brought up as close as possible to the glass.

French Beans should now be sown in pots for winter supply, the pots being cleaned, carefully crocked, and half filled with a compost of loam, leaf-mould, and charred soil in equal proportions. Pots of 9 inches diameter may be used for the first lot, and of 8 inches afterwards. Five to six Beans should be placed in each pot, to be reduced subsequently to four. Keep the pots under glass until the seeds have germinated, when they can be fully exposed to all weathers excepting heavy or continuous rain. Stand the pots on a floor of coal ashes or on trellises to secure the ready escape of the water and to prevent the intrusion of worms.

Cabbages.—The main crop of these should now be sown on soil of a light character and which has been well forked over and pulverised, afterwards giving it a dressing of wood ashes, charred soil, soot, and lime, which should be well raked in. Throw the ground afterwards into beds of 4 feet wide, and alleys of 18 inches in width. Eight drills should then be drawn on each bed and the seeds sown. Ellam's Early, Veitch's Earliest of All, Stuart and Mein's No. 1, Cook's Early, St. John's Day, are the earliest varieties. Enfield Market, Large York, Early Rainham, are excellent successional varieties. When the plants are of sufficient size they should be pricked out into nursery lines 6 by 4 inches, and when they have made a little growth transferred to their permanent quarters.

Cauliflower to stand the winter should be sown in late districts after the 12th, and again in about ten days; in warmer localities, the 20th, and even the first week in September will be early enough.

Early London, Walcheren, Dickson, Brown & Tait's Eclipse, and Veitch's Autumn Giant, will be found good hardy varieties. *W. M. Baillie, Luton Hoo.*

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY, Aug. 5—Southampton (concluded). Liverpool (concluded). Mansfield.

TUESDAY, Aug. 6—Oxford Carnation and Picotee Union. Leicester.

FRIDAY, Aug. 9—Stamford (two days).

SALES.

THURSDAY, Aug. 8—Imported Orchids from Messrs. H. Low & Co.; also Orchids in Flower, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—63°.

Town Trees.

There is some fear lest we may become slaves to routine, and go on planting Planes, and Planes only, as if there were no other trees equally well suited to bear the dust and foul air of our great cities. The real difficulty consists in the fact, that through the general ignorance of what trees are available, there is no demand for them. Nurserymen do not, therefore, keep them in sufficient numbers for the purpose, and the price consequently is high. The managers of town parks and squares would do good service by planting some of these trees, with the express purpose of showing what trees will thrive in smoky localities. We have frequently given long lists of such trees, but as the subject is once more attracting attention, we may again make mention of some that are suitable. The Maidenhair or Ginkgo tree (Ginkgo adiantifolia) is one which is pre-eminent in its power of resisting the evil influences of smoke. Moreover, it is very elegant, easily propagated by layers, easily managed, and has scarcely a defect, except that of scarcity. We need not here refer to its great interest botanically and geologically—that is generally known and appreciated by students, we are alluding now simply to its utilitarian properties. Those who desire to see for themselves how well the tree does in confined localities may see a fine specimen in the Chelsea Botanic Garden, another may be found near the Brewery in the High Street of Brentford—not a very savoury locality. A third exists in the private garden of a gentleman at Bow, and the trunk of which, at 5 feet from the ground, measures roughly 6 feet 6 inches in girth. It is altogether a graceful tree, pleasant to the eye, and grateful for its shade. This particular tree is interesting, as it is in all probability the fellow to some which once stood in the adjacent Mile End Nursery, and which were among the first planted in this country, as may be read in Loudon's *Arboretum*.

It may even be the very tree mentioned in the following quotation:—"In the Mile End Nursery are several trees, the highest of which was, in 1834, 57 feet high, with a trunk 3 feet in diameter; and in 1837 it had gained 3 feet in height. In the grounds of an adjoining villa there is a tree between 30 and 40 feet high, which has grown all to one side, in consequence of the pressure of other trees. This tree produced abundance of male blossoms in May, 1835, and is now, June 5, 1837, also in flower." We have on various occasions figured fine trees of this species, the last occasion being on March 2 of this year (p. 265), when we gave an illustration of a fine specimen at Kew.

Rein, in his very interesting account of the *Industries of Japan*, has several references to this tree, from which we extract the following particulars:—

"Ginkgo biloba, L. (Salisburia adiantifolia, Smith), must be considered a unique specimen among existing Conifers, on account of its leaf, blossom, and Plum-like fruit forms. Kindred specimens were widely scattered over the northern hemisphere in the tertiary period, but are now reduced to the single Ginkgo of Eastern Asia. It is now known only in a cultivated state. The Chinese and Japanese cultivate it partly on account of its edible fruits, but principally for the adornment of their temple-courts and cemeteries. It grows rapidly, reaches large dimensions, and a great height. The wood shows many similarities to that of the Maple, is of a bright yellowish colour, fine-grained, capable of polish, tender, and easily broken, and therefore not so highly prized. . . . Among the trees of this kind in temple grounds in and around Tôkio, the largest and most finely developed is the one at the temple Koyenji. Ten years ago, at 2 metres high, its circumference was 7·3 metres, and in 1884 nearly 7·55 metres. Lehmann estimated the height of the stoutest branches at 32 metres, and heard that the age of the tree was supposed to be 1000 years. This must, however, be a great exaggeration in view of the origin and growth of the city Yedo under Tokugawa Tyegasu, and the circumstance that the Salisburia only grows from planting. The tree has otherwise the appearance of an old Linden, with a symmetrically developed crown. In the Park at Shiba the largest Salisburia had in 1874 a circumference of 6·30 metres."

The Ailanthus glandulosa, too, makes a magnificent town tree, a really superb object in gardens and parks, even in unpropitious localities. It is not suited for street or avenue planting for two reasons: one that it throws up suckers, another that its large pinnate leaves disarticulate and fall to pieces as they are shed in autumn, and thus add somewhat to the discomforts attendant upon the fall of the leaf. This, however, is an inconvenience slight in degree and short in duration. The Black Walnut forms an equally noble tree in towns.

A very fine tree for London, and which would make a good street tree if it could be procured in sufficient quantities, is the so called Cucumber tree, Magnolia acuminata. When the garden of the Royal Horticultural Society at South Kensington was in its prime there was a row of these trees to be seen in that ill-fated locality, and a fine specimen may be seen with the Ginkgo in the garden at Bow to which we have already alluded.

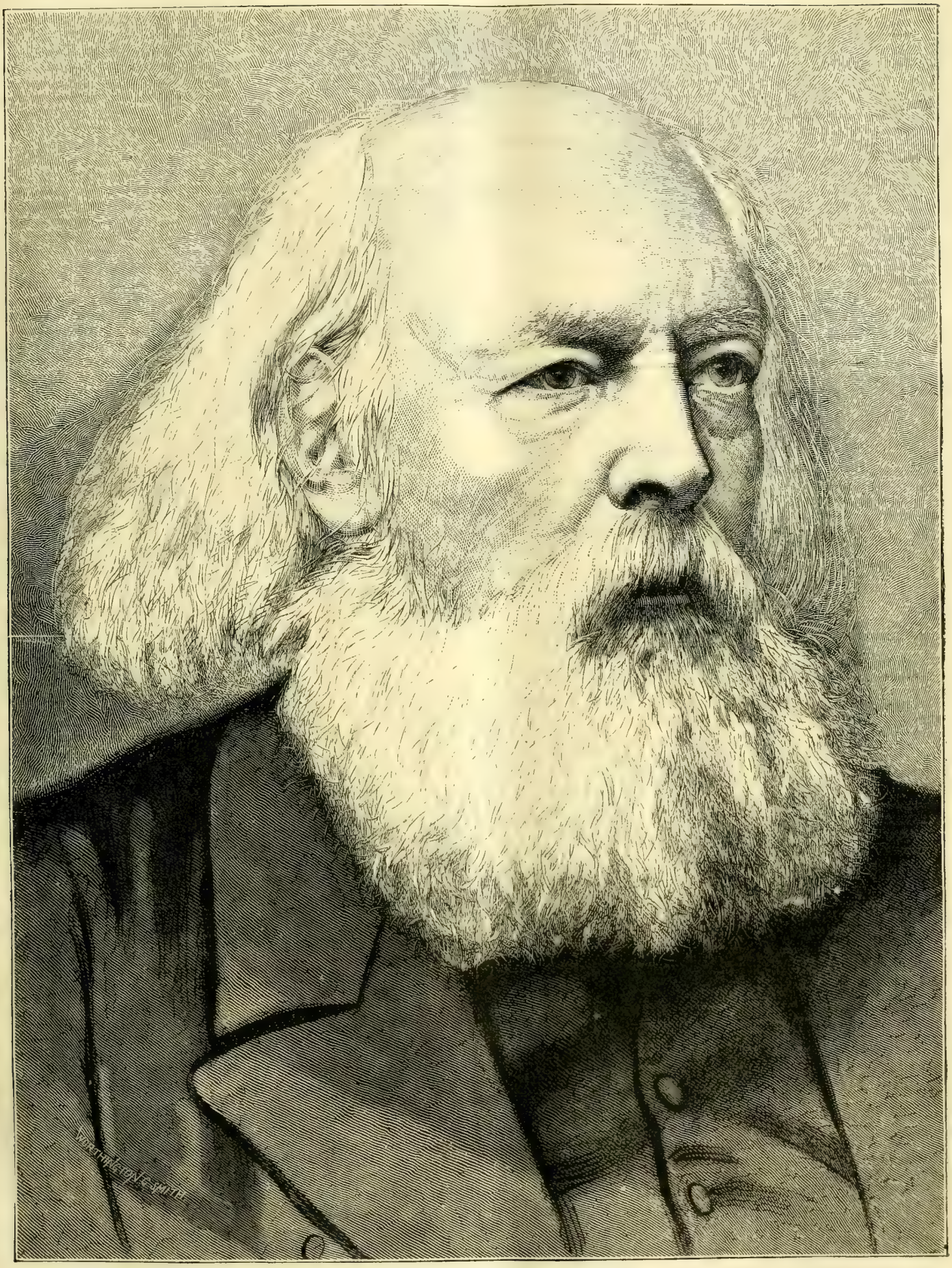
The Naples Alder, Alnus cordata, is another tree scarcely known, except to botanists, but which is, nevertheless, one of the best for town planting, being hardy, very ornamental, and easily managed.

A visit to the Arboretum at Kew would show scores of handsome Poplars, Oaks, evergreen and deciduous, Ashes, Pears (Pyrus), and other trees, eminently suitable for planting in towns; or, if Kew be objected to as being too far removed from the smoke (which, unfortunately, it is not), much information may be derived from a visit to the parks, to the grounds of Fulham Palace, to those at Sion (close to the noisome town of Brentford), and even to many a bye-street in London, where traces of the old gardens which once occupied the site here and there remain in the shape of old Fig trees, Tulip trees, Mulberry trees, Catalpas, Poplars, and other veterans. It is only a year or two back that on the premises of the *Times* itself, in the very heart of the City, a fine shrub of Ptelea trifoliata might be seen.

It is equally desirable to know what trees not to plant in confined localities; among them, for various reasons, we may mention Limes, Thorns, Horse Chestnuts, and Gleditschias. These may do in the suburbs or parks, but are not to be recommended for street planting in the denser quarters of a smoky town.

The Gardeners' Orphan Fund.—The usual monthly meeting of the Committee took place at the Caledonian Hotel on the 25th ult., Mr. Geo. Deal in the chair. The minutes of the last meeting having been read, Mr. George Deal was unanimously re-elected the Chairman of the Executive Committee for the ensuing year. The bank-book showed a balance of £785 13*s.* 2*d.* to the credit of the Fund. The Chairman announced the official return of the recent election of children to the Fund. It was resolved that 2,500 copies of the annual report and balance-sheet, with list of subscribers, be printed for circulation. The Hon. Secretary reported that he had received promises towards the £100 to be raised in accordance with the terms of an offer made at the annual dinner by Mr. H. J. Veitch, that he would give a similar sum provided the £100 was raised in three months. The thanks of the Committee were voted by acclamation to the President, Sir Julian Goldsmid, Bart., M.P., for presiding at the annual dinner; to Mr. Hudson and others for arranging the floral decorations upon the tables; and also to the donors of plants, flowers, &c. The Hon. Secretary reported that the dinner expenses had been met by the sale of tickets, and by special contributions of money for the purpose. It was resolved that a further sum of £500 be invested in Consols, making the total amount invested just over £3000. It was unanimously resolved that when the conditions of Mr. H. Veitch's generous offer of £100 have been met by a further sum of £100, that the two children next highest on the recent poll, viz., Robert James Todd, aged eight years, and Olive Chapelow, aged four, be placed upon the fund. Acting upon the addition recently made to Rule 12, the committee unanimously resolved, "That forty special life votes (*b*), in accordance with the amendment to Rule 12, be placed at the disposal of the sub-committee of stand-holders appointed to assist in carrying out the Covent Garden Fête in May, 1889; and that Mr. Assbee be requested to obtain the names of the persons selected to exercise the privileges conferred by the amended rule." The proceedings closed with a vote of thanks to the Chairman.

Primula obconica.—A correspondent writes:—"It may be, perhaps, interesting to hear from an authentic source confirmatory evidence of the fact of the injurious consequences, to some people, of handling this plant. Throughout the whole of the past winter I have been more or less seriously ill from an intermittent attack of severe inflammation of the face and eyes and hands, and two other members of my



The Late Rev. M. J. BERKELEY. (See p. 141.)

family were similarly affected, though in lesser degree. It so happens that we have grown large quantities of this pretty and useful plant, which I took rather under my own special care, and it was also used largely in a cut state. The case was so unusual that it completely puzzled our doctor, who, however, maintained that there was some local cause. However, in the spring I saw, in *Garden and Forest*, mention made of certain persons who could not touch Primula obconica with impunity, and I felt convinced that we had at last traced the cause of our own troubles. We immediately left off using the flowers and handling the plants, and very soon the inflammation entirely disappeared, and there has been no sign of it since. It only affects certain constitutions, apparently, as the gardeners cannot be persuaded to discard it entirely, and they have suffered no inconvenience in repotting or attending to it. I fancy it is the only Primula which possesses any hurtful quality, and it would be extremely interesting to find out whether the irritant quality is due to the mechanical agency of the minute hairs working into the skin, or whether there is an actual poison present in the plant itself. In any case, the irritation and fever produced is exceedingly troublesome, causing very considerable swelling and suffering, and it is, I feel sure, a matter worthy of investigation."

Gardeners' Orphan Fund.—We have received from Mr. Ayling, The Gardens, Forty Hill, Enfield, the sum of 10*s.* 6*d.* towards the special fund required for putting an additional candidate upon the lists of recipients from the fund in accordance with Mr. Veitch's conditions elsewhere mentioned.

Gardeners' Benevolent Institution.—We are glad to hear that the appeal made on the occasion of the Jubilee of this Institution has been so successful that the committee has decided to place on the pension list, as from June 24 last, the whole of the unsuccessful candidates (17) at the last election. The first payment will be made in October next. The following list will show that locality is not studied in this matter, and that only three of the candidates for election are residents in or near London, thus showing that residents in the Metropolitan district have no undue advantage:—

James Brown, Croydon	...	aged 71
Edward Spivey, Sawbridgeworth	...	,, 76
George Lambert, Chichester ...		,, 71
Stephen Evans, Chichester ...	...	,, 74
Thomas Morley, Cambridge ...	.	,, 80
Joseph Norval, Chester	...	,, 63
Elizabeth Snow, Taunton ...	. .	,, 74
James Manderson, Stoke Newington	. .	,, 66
Elizabeth Pollard, Croydon ...	...	,, 76
Henry Berry, Dromore, Ireland	...	,, 73
James Edmonds, Fulham ...	...	,, 83
William Fowle, Southampton ...	...	,, 69
George Fricker, Bourne Valley ...	...	,, 73
John Grimshaw, Huyton, Liverpool	...	,, 80
John Hooper, Bristol	...	,, 80
Clement Preston, Brixton ...	. .	,, 77
James Priest, Long Eaton, Notts	...	,, 65

Among the donors of £10 10*s.* we note the Vintners' Company and the Merchant Taylors' Company.

Orchids, their Culture and Management.—Mr. W. Watson, assistant curator of the Royal Gardens, Kew, assisted by Mr. Bean, the foreman of the Orchid department, has commenced the publication, in monthly parts, of what promises to be a convenient treatise on orchids, for the use of amateurs. The names of the authors and the facilities at their disposal are a sufficient guarantee that the work will be well done. The first chapter is devoted to general remarks upon culture. It is curious to see, after the costly failures that have been experienced, and the volumes that have been written on the subject, how simple the matter is in principle, on paper, as it is said! how little fundamental difference there is in the general principles underlying successful Orchid culture, from those which obtain in the case of other plants. The real difficulty is one of detail, and that of course can only be overcome by experience. The perfection, rapidity, and ease, however, with which this experience may be obtained depend essentially on the knowledge of general principles, to say nothing of the increased ability to cope with new conditions and unforeseen circumstances. The genera are treated alphabetically, and short descriptions given of the most important species. The work is published in monthly parts at one shilling each by L. Upcott Gill, 170, Strand.

Rectification of Names.—The Statistical Department of the Board of Trade have at last got rid of the misleading and incorrect name of "Terra Japonica," which used to be applied to Gambir, the inspissated extract of Uncaria Gambir, chiefly made in the Straits Settlements, and largely used in Europe and America for tanning and dyeing. They have also commenced to leave out the *a* in the fruit of the Coco-nut Palm, in order to distinguish it from the many other products closely resembling the name, such as Coca, the leaf of Erythroxylon Coca, Cacao, the seed of Theobroma Cacao, Coco or Eddoe, the tuber of Colocasia esculenta, and the Cocoa plum. The wholesale dealers in Coco nuts have, however, adopted the spelling of Koker nut. The Board of Trade in their returns still spell Sumach, Shumac.

Canadian Fruits.—The *Canadian Horticulturist* reports unfavourably as regards the fruit crops of the Dominion.

Fowls for Pleasure, Prizes, and Profit, is the title of a weekly journal devoted exclusively to poultry, published at the price of one penny, and whose precepts are so precious that they are likely to secure public approval.

"Work."—This is the title of a new publication issued by Messrs. Cassell & Co., itself a guarantee of excellence and usefulness. It is a weekly journal published at one penny, and intended for artizans and workmen of all degree. In some recent numbers we note some very good articles on the construction of tenants' greenhouses (No. 12, p. 13); book-cases, rustic fences, gates, &c., which are likely to be of great service to amateurs.

The New Public Park and Recreation Grounds, Acton.—These new grounds were recently opened by Lady George Hamilton, the wife of the First Lord of the Admiralty, who is the Member for the Parliamentary Division in which Acton is situated. The extent of the ground is about twenty-five acres, of which eighteen acres are laid out, and the remainder will be so utilised as soon as the leases fall in. Formerly it was a most uninviting piece of land, about ten acres of it having been used as a brick field, while a large portion of the remainder had laid by in a rough condition for a considerable time. The park is situated on the left of the Uxbridge Road towards London, and a little way eastward of the North London Railway bridge, which spans the main road at this point. The cost of the ground and the laying out of the same amounts to something like £48,000, but the Goldsmiths' Company, to whom part of the ground belonged, generously returned £5,000 of the purchase-money. Designs for laying out the grounds were invited, and that of Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, was accepted. On entering the ground from the Uxbridge Road there is seen on the left hand a spacious playground for children, gravelled over, the lower portion being for boys, and the upper for girls. The upper part is laid out for tennis-court, and the eastern side will be available for cricket; a bowling green is also provided. Gravelled paths and broad carriage ways spread like a network throughout the whole extent, and two ornamental bridges have been built in the grounds. A covered band-stand and arcades have been erected. Ornamental flower-beds with large beds and borders of shrubbery are introduced, and Poplar, Oak, and other trees that have stood on the ground for years, are utilised, and afford welcome shade. The work of laying out by Messrs. Cheal & Sons has given much satisfaction. The grass, shrubs, &c., have grown remarkably well. There is an immense growing neighbourhood all round the new grounds, and the eastern portion of the ancient and rapidly increasing parish of Acton, which extends a considerable way towards Shepherd's Bush, will derive great benefit from the recreation grounds. Acton, with its large working-class population, is not nearly so well favoured in the matter of open spaces as its sister parish Ealing, which adjoins it on the west.

The Dwarfed Trees of Japan.—The French are much interested in the dwarf trees shown by the Japanese horticulturists at the Exhibition. There are exhibited Thuias, Pines, and Cedars, said to be 100 to 150 years old, not higher than 18 inches. Hence one can have small forests in flower-pots, and a collection of Fir trees in a balcony. They are puzzled to conceive how these vegetable deformities are produced by patience and labour. Each branch as it shoots is said to be embedded in earth and retained in position by props or supports and bands. The curvature is made at right angles, and the upper part of the branch continues to grow while the other withers and dies. Every time a young sucker or shoot appears it is treated in the same manner. It is by thus stopping the development and forcing the tree to take various contorted forms, that they are able to produce these curious abortions. This work has to be continued by several generations of horticulturists, if we are to believe that these small trees arrive at the great age alleged. Whether there is anything to admire in such dwarf trees is a question of taste: but a sight of them explains the fantastic and unnatural forms of the plants which the Japanese produce on their lacquered trays, on their bronzes, and their embroideries.

Cultivo de los Rosales en Macetas.—We notice this work, published in Madrid, to show that even in Spain pot roses are valued, and the work of William Paul on their culture estimated at its proper value. The translator adds a preface containing among other things a singularly imperfect list of English Rose growers, while more than half of the volume is taken up with an "Antologia de la Rosa," or series of poetic effusions in Spanish.

"Journal of the Linnean Society."—The last issued Part contains Mr. Rolfe's paper on Apostasieæ, read as long ago as June, 1888, a tribe of Orchids with nearly regular flowers, and representing, it may be presumed, an early and simple condition from which the more complicated forms have been derived. Rev. R. Baron contributes to this number an interesting account of the Flora of Madagascar.

A Children's Flower Show.—Within a stone's throw of the magnificent college for ladies which the late Mr. Holloway erected on Egham Hill, there was held on the 25th ult. an exceedingly interesting exhibition of children's plants. The exhibition took place under the auspices of the Egham Juvenile Floral and Industrial Society, its floral section specially encouraging the culture in pots or small boxes of plants from cuttings and from seeds. There are two sections: seniors up to seventeen years of age, and juniors up to twelve years of age. The payment for membership is 4*d.* and 3*d.* respectively. For this sum each member receives in the spring six well rooted cuttings of ordinary pot plants, such as Fuchsias, Musks, Lobelias, zonal and variegated Pelargoniums, Petunias, Isolepis gracilis, &c., and six small packets of seeds of common annuals, the chief of which are Collinsia bicolor, Dwarf Nasturtiums, Candytufts, Mignonette, Nemophila, &c. The classes for the prize competitions include six plants (or less) from cuttings, six annuals (or less) from seeds, and one selected premier plant and pot of seeds in each section. Added to these there are classes for groups made up of both plants and seeds for growers who have not succeeded in saving all of

their plants. The exhibition of last week was the second of the Society, and the competition was remarkable, and in most cases the plants were excellent. Oddly enough, perhaps because of greater parental care, the plants and seedlings of the juniors were the best. Liberal prizes in money were awarded. Active co-operation is found in all the Sunday and elementary schools of Egham, a big parish, which includes part of Virginia Water and all Englefield Green. A digging competition for boys was also a part of the day's programme, and capital work was found by the judges. A special prize was awarded to a little girl for an essay on the wild flowers of Egham. Curiously enough, in a district specially rich in wild flowers, very few bunches were displayed, the attention of the youngsters being apparently given to subjects requiring cultivation.

Anemone-flowered Annual Chrysanthemum.—This is the title Messrs. Hurst & Son, of Houndsditch, E.C., have given to some double forms of Chrysanthemum carinatum (tricolor), brought to the last meeting of the Floral Committee, but too late to be noticed by them. They represent a much better double form of this annual Chrysanthemum than has been previously seen; and they represent one peculiarity of the double Anemone in that there is a margin of ray florets at the base of the flower, the centre being filled up with a cone of florets similar to the Anemone. The more perfect formed flowers are decided acquisitions, but something has yet to be done in the way of selection, in order to render the strain finished in this respect. The single forms of C. carinatum are delightful subjects for cutting from; and this new type of double appears likely to be equally serviceable.

Colour in Scarlet Pelargonium.—Mr. J. Hebden kindly sends us a truss on which some of the flowers are wholly scarlet, others entirely white, while in some instances the petals are striped, half white, half scarlet, and in others half the flower is white, half scarlet. In some of the flowers which are nearly white, the scarlet colouration appears only at the base of the veins of the petals. Some time since we figured a flower of a Calanthe one half of which was white, the other pink. Such cases are evidence of the unmixing, if we may so call it, of crossed or mixed characteristics, but it is difficult to account fully for the peculiarities in question.

Ornamental Grasses.—Mr. Burbidge sends us spikes of two ornamental grasses from the Trinity College Gardens, Dublin. Eulalia japonica is remarkable for the white stripe down the centre of the leaf, Spartina polystachya, a tall-growing species, has long, slender spikes with compressed spikelets and purple anthers. Too little use is made of these hardy plants.

The late Mr. Boscawen.—We understand that some of the collections amassed by this distinguished horticulturist, such as the Orchids, the Amaryllids, and bulbous plants, will shortly be offered for sale, probably at Lamorran.

The Caterpillar Plague.—In another column of this issue are to be found the remarks on the fruit crops supplementing the tabulated returns of last week's number, p. 99. These communications contain many laments over the ravages of the Caterpillars in the spring. In 1888 there were loud complaints of large losses from the same cause, and unless measures of precaution be taken we may expect the same next year. Correspondents apply to us when the grubs have made their presence only too apparent, but it is then too late, and if the crop of 1890 is to be saved from the insects, gardeners, fruit farmers, and indeed all who have fruit trees should adopt the method of ringing the trunks of the trees with a mixture of cart-grease and a little oil, about 2 or 3 feet above the ground, with a band some 8 to 12 inches in depth. In some of the fruit plantations in Kent this course was adopted last autumn and the results are highly satisfactory, whereas in adjoining orchards where prevention was not tried, the crop was completely lost. This ring should be put on the trees next month, and refreshed when necessary.

Canadian Fruits.—We learn from our correspondents that in the Annapolis Valley, the great exporting point, the fruit crop is below average, as also in Ontario.

Lælia monophylla.—Two examples of this charming highland Jamaica Orchid are in flower in the Orchid Nurseries of Mr. Wm. Gordon, Amyand Park Road, Twickenham. In general appearance the flowers resemble those of Sophronitis grandiflora but the sepals and petals of L. monophylla are almost equal, and the lip very much abbreviated. In colour the one example is yellowish-orange, the other cinnabar-scarlet, the latter being much the showier It is a neat and pretty plant, and, according to the experience here, it is very free to grow and flower in a cool-house, and does not at all merit the character which bad cultivation has gained for it, of being difficult to grow.

New Publications.—*Atlas der Holzstructur*, von Dr. N. J. C. Müller (Williams & Norgate), a series of illustrations of the microscopical structure of timber trees, with a descriptive text. This will be found in the Lindley Library.—*Atlas der Pflanzen Krankheiten*, von Dr. Paul Sorauer (Williams & Norgate), a series of beautiful drawings of plant diseases. This has been added to the Lindley Library.—*Auslandische Kulturpflanzen*, von Hermann Zippel. A series of folio drawings of economic plants with text (Williams & Norgate).—*Blatt und Sprossbildung*, bei Euphorbien und Cacteæ, von Xavier Wetterwald (Williams & Norgate), Leaf and Root Structure in Euphorbias and Cacti.

Notices of Books.

Darwinism: an Exposition of the Theory of Natural Selection, with some of its Applications. By Alfred Russel Wallace, LL.D., &c. (Macmillan & Co.)

(*First Notice*).

To those who have not familiarised themselves with the late Mr. Darwin's writings, or who were born in the post-Darwinian era, this volume will be very welcome, as containing an epitome of the doctrine of evolution and of the facts and phenomena upon which it is based. Such an epitome is likely to be welcome to the general reader, and it is specially valuable as being the work of one who must always share with Darwin the great honour of having forced the theory upon public attention, and eventually secured its general acceptance. Wallace arrived at his conclusions quite independently of Darwin, but from the employment of a like method, viz., the investigation and observation of plants and animals in various countries of the globe, and under varying conditions. Wallace, however, has not done so much in the way of confirmation of his views by actual experiment as Darwin did; he has not availed himself to so great an extent of the labours of the horticulturist; and, further, he differs from his great fellow-labourer on a most important point to which we shall subsequently refer.

Those of our readers whose memories enable them to realise for themselves the *status in quo ante* Darwin, and the prodigious effect that has been produced by the application of his theory or interpretation of the phenomena of Nature, will scarcely need to devote much time to the earlier chapters of Dr. Wallace's book. They constitute in substance—but of course with additions—an abstract or epitome of the chapters in the *Origin of Species* and of *Animals and Plants under Domestication*—those wonderful storehouses of facts concentrated and brought to bear upon the rational explanation of the phenomena of organisation. Thus we have chapters on the struggle for existence, the variability of species of animals and plants in a state of nature, and under domestication or cultivation, on natural selection, the survival of the fittest, hybridisation, sterility, the objections to and the difficulties in the way of the full acceptance of the theory, and so forth.

The Colouration of Plants.

The reader, however, will find much new and interesting matter in the chapters on the colouration of animals and plants. This, when constant, must need be of some utility for protection, concealment, or as affording means of attraction and recognition. Adverting specially to flowers, Dr. Wallace has a chapter on the special colours of plants, their origin and purpose. He cites the case of Mesembryanthemum, and of an Asclepiad, so like the pebbles among which they were growing, as readily to be overlooked by predatory birds and insects. Similarly the colours of fruits, and the means provided for their dispersal, are of obvious utility. Here, it may be remarked that colour often exists where, so far as we know at present, it can be of no use. There are purple-skinned Potatos, Potatos with purple flesh, and others with yellow; Primrose stems are often purple though more or less buried in the soil; the germs of some plants are green while still within the seed-coats, and where no light can reach them. These facts may be and are co-related with others no doubt, but by themselves they seem of little utility.

The subject of the inter-relations between flowers and insects, of course, receives much attention at Mr. Wallace's hands, and he alludes to Mr. Henslow's observations on the vigour of self-fertilised plants, and to the notion that flowers of inconspicuous colour fertilised by wind-borne pollen, are not primitive forms, but degradations from other more brightly coloured flowers which were once adapted to insect-fertilisation. The facts of vegetable colouring, and those of close in-and-in breeding, or of cross-fertilisation, are truly, as Dr. Wallace says, complex, contradictory, aad difficult of explanation. Referring especially to the colouration of flowers our author sums up as follows:—

"We thus see that the existing diversity of colour and of structure in flowers is probably the ultimate result of the ever-recurring struggle for existence, combined with the ever changing relations between the vegetable and animal kingdoms during countless ages. The constant variability of every part and organ, with the enormous powers of increase possessed by plants, have enabled them to become again and again readjusted to each change of condition as it occurred, resulting in that endless variety, that marvellous complexity, and that exquisite colouring which excite our admiration in the realm of flowers, and constitute them the perennial charm and crowning glory of Nature. . . . We cannot therefore deny the vast change which insects have produced upon the earth's surface, and which has been thus forcibly and beautifully delineated by Mr. Grant Allen. 'While man has only tilled a few level plains, a few great river valleys, a few peninsular mountain slopes, leaving the vast mass of earth untouched by his hand, the insect has spread himself over every land in a thousand shapes, and has made the whole flowering creation subservient to his daily wants. His Buttercup, his Dandelion, and his Meadowsweet grow thick in every English field; his Thyme clothes the hill side, his Heather purples the bleak grey moorland. High up among the alpine heights his Gentian spreads its lake of blue; amid the snows of the Himalayas his Rhododendrons gleam with crimson light. Even the wayside pond yields him the white Crowfoot and the Arrowhead, while the broad expanses of Brazilian streams are beautified by his gorgeous Water Lilies. The insect has thus turned the whole surface of the earth into a boundless flower garden, which supplies him from year to year with pollen or honey, and itself in turn gains perpetuation by the baits that it offers for its allurement.'"

Allowing for a little rhetorical licence this is substantially true, but it still leaves many contradictory

facts unexplained, as Dr. Wallace goes on to point out. His final conclusions on this subject are summed up in the following passage:—

"In studying the phenomena of colour in the organic world we have been led to realise the wonderful complexity of the adaptations which bring each species into harmonious relation with all those which surround it, and which thus link together the whole of nature in a network of relations of marvellous intricacy. Yet all this is but, as it were, the outward show and garment of Nature, behind which is the inner structure—the framework, the vessels, the cells, the circulating fluids, and the digestive and reproductive processes, and behind these again those mysterious chemical, electrical, and vital forces which constitute what we term life. These forces appear to be fundamentally the same for all organisms, as is the material of which all are constructed; and we thus find behind the outer diversities an inner relationship which binds together the myriad forms of life.

"Each species of animal or plant thus forms part of one harmonious whole, carrying in all the details of its complex structure the record of the long story of organic development; and it was with a truly inspired insight that our great philosophical poet apostrophised the humble weed—

"Flower in the crannied wall,
I pluck you out of the crannies,
I hold you here, root and all, in my hand,
Little flower—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

The chapter on geographical distribution is one of the most interesting in the book. We have to account for the presence of particular plants in particular countries. This is sometimes, of course, easy, and is explained by proximity and facility of diffusion and intercommunication by birds, winds, insects, &c. At other times it is hard indeed to account for the presence of like plants in areas widely sundered, and still more to understand their absence where existing conditions appear favourable to their presence. Madagascar and Africa are not remote, and yet we are told that their productions, vegetable and animal, are more unlike than are those of Japan and England. A like diversity exists in the productions of Australia and New Zealand, in spite of their proximity. On the other hand, the tapirs are found on the opposite sides of the globe, in the Malayan Islands and in the tropics of America respectively, but not in the intervening countries. The clue to some of these problems has already been mentioned, changes of climate, successive glacial periods, alternations of cold and heat, will account for a great deal; the comparative permanence of oceanic and continental areas, through enormous periods of time (contrary to what was once supposed), offers a satisfactory explanation of other points, especially when studied in connection with the distribution of fossil forms in Tertiary times.

All the oceanic islands of the globe are now known to be of volcanic or of coral formation, and the coral islands themselves probably rest on a volcanic basis.

Migrations of Plants.

Such islands in either case must get peopled from other countries. The manner in which this migration is effected is illustrated by some remarkable cases cited from Mr. Hemsley and others. We may mention one.

"A very remarkable case of wind conveyance of seeds on a large scale is described in a letter from Mr. Thomas Hanbury to his brother, the late Daniel Hanbury, which has been kindly communicated by Mr. Hemsley, of Kew. The letter is dated 'Shanghai, May 1, 1856,' and the passage referred is as follows:—

"'For the past three days we have had very warm weather for this time of year, in fact, almost as warm as the middle of summer. Last evening the wind changed suddenly round to the north, and blew all night with considerable violence, making a great change in the atmosphere.

"'This morning myriads of small white particles are floating about in the air; there is not a single cloud and no mist, yet the sun is quite obscured by this substance, and it looks like a white fog in England. I enclose thee a sample, thinking it may interest. It is evidently a vegetable production. I think apparently some kind of seed.'

"Mr. Hemsley adds, that this substance proves to be the plumose seeds of a Poplar or Willow. In order to produce the effects described—*quite obscuring the sun like a white fog*—the seeds must have filled the air to a very great height, and they must have been brought from some district where there were extensive tracts covered with the tree which produced them."

Dr. Wallace sums up what he has to say about geographical distribution by stating that the chief facts can now be sufficiently understood, and that cases of difficulty and anomaly are usually dependent on our ignorance of some of the essential factors of the problem, such as the distribution of the group in recent geological times, or the special methods by which the organisms are able to cross the seas.

Geological Evidence.

Passing to the geological evidence of evolution, Dr. Wallace is able to show that the imperfection of the record on which Darwin insisted so strongly, is less marked now than it was, owing to the increase of knowledge, and the discovery of abundance of "missing links," whose existence was previously unknown, or whose significance was unsuspected. The pedigree of the horse, for instance, has been clearly demonstrated. The geological history of plants, though full of anomalies, is, on the whole, favourable to the evolution theory.

Objections to the Theory of Natural Selection.

In the fourteenth chapter the author discusses some of the fundamental objections to the theory of evolution, alludes to the use and disuse of organs, to the direct action of circumstances, and discusses the views of modern naturalists like Herbert Spencer, Dr. Cope, Dr. Karl Semper, and Mr. Patrick Geddes, the latter of whom considers that much that has been imputed to natural selection may, in reality, be attributable to the natural antagonism of vegetative as compared with reproductive growth. Allusion is also made to the remarkable experiments of Mr. Galton, who seeks to establish a law of "regression towards mediocrity," showing that whenever there has been a variation by increase or by defect there is a tendency in the offspring to revert to a mean or average condition, and this "mean" appears to be not the mean of the actually existing individuals, but a lower mean, or that from which they had been recently raised by selection.

We cannot here follow Dr. Wallace in his arguments; suffice it to say that he dismisses the theories of the authors we have mentioned as inadequate to explain the phenomena, and while allowing them a measure of importance, concludes by saying that "natural selection" is supreme to an extent which even Darwin himself hesitated to claim for it.

(To be continued.)

PLANTS IN FLOWER AT KEW.

Aloe Cooperi.—In May of last year Mr. Medley Wood, of Natal, sent to Kew two stems of an Aloe, with the following note:—"Amongst the plants I got in Zululand recently were four plants of a species of Aloe, the flowers of which are used as a vegetable. I only got one head of flowers, and had it cooked as a trial. I found it really very palatable, and have no doubt that if it were known it would be extensively used. I send you two of the plants, and I shall try to procure more for distribution. I shall be glad to know the name of the species as soon as you can identify it. The plant is known to the natives as 'Isiputumana,' but it does not appear to be common. A missionary correspondent of mine in Zululand sent me a plant, and described it as a beautiful vegetable, the flowers being eaten; when cooked they do not lose their colour." These two plants are now in flower at Kew. They are Aloe Cooperi, of which a figure was published in the *Botanical Magazine*, t. 6377. The stem is 2 inches in diameter, about 6 inches long, and clothed with the sheathing bases of the distichous semi-erect leaves. These are 2½ feet long, an inch broad near the base, channelled, with fine teeth along the margin, a distinct keel at the back, fleshy, very easily broken; dark green, with grey mottlings. The flower-scape is erect, as long as the leaves, and bears a dense head of about forty flowers each, 1½ inch long, ½ inch broad at the base, fleshy, reddish-yellow, green towards the end of the tube. Eaten raw they taste like Lettuce, but leave a slightly pungent taste. I have not tried them cooked. The plant is really ornamental when in flower.

Nymphæa alba × *pygmæa.*—A plant of this new hybrid Nymphæa is now flowering in the Kew collection. It was received last May from Mr. E. D. Sturtevant, of New Jersey, who wrote of it as follows:—"I send you a new natural hybrid Nymphæa which has appeared in my garden. Growing together in the same tank were N. pygmæa, N. alba, and the variety of the latter known as candidissima. Amongst some seedlings of N. pygmæa appeared two plants which are, no doubt, a cross between it and one of the other two. The flowers have something of the form of N. pygmæa, but they are larger. When it flowers with you, please give it a name." The habit of the plant is that of N. alba. Leaf 8 inches by 6½ inches, dark green above, purplish beneath, the veins only being green; margin even, the lobes considerably overlapping, auricled. Flowers floating, 4 inches across; sepals four, 1½ inch by ⅝ inch, concave, green at the back, greenish-white in front; petals in about three rows, half as wide as the sepals, pure white; stamens very numerous, arranged as in N. alba. The flowers expand in the daytime, and are very fragrant. As a plant for small aquaria this hybrid ought to prove useful.

Nymphæa tuberosa var., from New Jersey.—Flowering examples of this plant are also now in the Kew collection. It is distinct from the type in the narrowness of its flower-segments and the fewness of its stamens. The flower is 4 inches across; sepals five; petals about twenty, varying in length and width, the largest being nearly 2 inches long by ½ inch in width. It is an elegant little Nymphæa, and will probably prove to be hardy in England. The Kew plant was received from Mr. Sturtevant. *W. W.*

FLORISTS' FLOWERS.

THE CARNATION AND PICOTEE.

Writing about these plants (see p. 651, vol. v.), I was able to state that with warmer weather the plants had "improved immensely." During the early spring months the chances of a good blooming season were rather problematical, but it is now pleasant to relate that we have had an excellent display both out-of-doors and in the houses. To show how much the seasons influence the well-doing and blooming of our plants, I may say that we planted out a large quantity of strong, healthy seedlings at the usual time (June), last year, a month afterwards a deluge of rain came, and the ground, when it dried, became as hard as a turnpike road, so that the plants made little or no progress for many weeks; in fact, they received a check from which they did not quite recover until fine weather set in, early in the present year. I have had my pot-plants suffer as much, directly after they were potted, from a deluge of rain, so that I shelter them now in frames until they are well established. In an ordinary season few of the seedlings fail to flower, whereas this year, owing to last season's unfavourable weather, quite half of them are not in flower.

I may remark that the seeds of yellow and buff ground varieties should be sown earlier by a month than those of the white ground Picotee and flaked Carnations; indeed, I would, in the future, sow the one on March 1, and the others on April 1. It is

better to sow them on a gentle hot-bed, the seeds this year seeming to be of poor vegetative quality; by so doing the plants will appear above ground in the course of a week. The plants of this year look very promising, and as they have more than two months yet to grow, it may be expected that they will grow into fine flowering specimens. The seedlings, when well grown, flower profusely, and more than a hundred flowers may be cut from a single plant; the endless variety of colour obtained when the seeds are saved from the ordinary florists' forms of Carnations and Picotees is a source of wonder to many.

I have carefully noted the parentage of Picotees and Carnations, and the result is very interesting from a physiological point of view. One would fancy that seedlings from a yellow-ground Picotee crossed with another yellow-ground variety would not vary much, but as a matter of fact they do. That flake and bizarre Carnations with yellow ground colour should be produced is not out of the ordinary course; but I had last year deep pink and crimson colours from them. The varieties Terra Cotta and Colonial Beauty were produced from a clear yellow Carnation, lightly marked on the edge with red.

One would also suppose that seedlings from a light-edged white-ground Picotee would resemble their parent to a certain extent—and so some of them do; but from the well-known variety Her Majesty we had a number of purple selfs, amongst them the variety sent out by Mr. Turner, of Slough, named Purple Emperor. Rose, crimson, purple, and scarlet selfs are freely produced, but white varieties are scarce.

Carnation plants when kept under glass become drawn, and the grass run out to flower, so to prevent this I layer them. I this year layered quite a hundred pots of them before July 20. The check the layers receive by being partly cut through prevents their growing further to flower; and the layers are better when the flowering plants are placed in an open position out-of-doors, this being done as soon as they go out of flower. A successful grower of hardy plants told me the other day that he would like to see a race of Carnations of a much dwarfer habit than those cultivated at present. If we could get plants with such a sturdy dwarf habit of growth that they did not require sticks at all it might be an advantage; but even dwarf Carnations require sticks of some kind, and I fancy a plant carrying its flowers from 24 to 30 inches above the foliage is more effective as a border plant than dwarfer ones, and the blooms would be cleaner. As it is now Carnation time, and thousands of growers are interested, it may be as well to summarise the properties of a Carnation as defined by the florists half a century ago:—"The stem of the flower should be erect, not less than 30, nor more than 45 inches high. The flower should be at least 3 inches in diameter, the petals long, broad, and substantial, particularly those of the outer circle of petals; these should rise perpendicularly about half an inch above the calyx, and then turn off gracefully in a horizontal direction, supporting the inner petals, which should gradually decrease in size, and fill up without crowding the centre of the flower. The calyx should be at least an inch long, and sufficiently strong at the top to keep the bases of the petals in a strong and circular body. The middle of the flowers should not rise too high. The colours should be bright, and equally marked all over the flowers. The stripes should be regular, narrowing gradually to the claw of the petal, and there ending in a fine point. Almost one-half of each petal should be white, and free from spots."

It is probable that many readers of the above remarks cannot distinguish a Carnation from a Picotee. They are really from the same parentage, and the only difference is in the colour. Picotees have white or yellow ground with a narrow, medium, or broad edge of rose, red, scarlet, or purple. All self-coloured or flaked flowers are distinguished as Carnations. Tree or perpetual flowering varieties are so named because they branch out into growths up the stem; which growths in the course of time produce flowers at different seasons. They are propagated and grown specially to produce flowers in the autumn, winter, and spring. Our plants of this section have just received their last shift, 6-inch pots, and a sunny place out-of-doors where they will grow stronger than under glass, and produce much better flowers. *J. Douglas.*

Cultural Memoranda.

MIGNONETTE FOR AUTUMN, WINTER, AND SPRING.

This is the time to sow seed of Mignonette which is to flower during the above periods. Fill the necessary number of 4½ inch and 6-inch pots (which should be efficiently crocked), to within 1 inch of the rims, with friable loam, making it moderately firm before sowing the seed thinly. Then cover it lightly with sifted soil, water through a fine rose pot, place in a frame, shading and keeping close until the young plants appear, when the shading should be discontinued, and the plants be afforded sufficient air to insure sturdy growth. The plants should be thinned out to from one to three in each pot, supporting them, as they advance in growth, by twisting a band or two of matting round four small sticks stuck round the edge of the pots. The thinnings, if considered necessary to increase the stock, may be potted up or transplanted into a bed near to the glass, in a hot-water pit, having a south aspect, watered, and shaded from sunshine until the roots have taken to the soil, giving abundant ventilation. These latter, when properly attended to in the matter of water at the roots, ventilation, and keeping out frost, being careful of an excess of moisture, will yield abundance of flower-spikes for cutting. *H. W. W.*

Tacsonia Van Volxemii.

This graceful greenhouse roof climber should not be stopped, but the shoots well thinned out, training loosely those retained. When the plants are growing and flowering freely, it is an indication that they are all right at the roots, and that the temperature of the house is suited to their requirements, and should such plants at any time during the next few months cease to unfold their flowers, it will be a sign that a thorough watering at the root is very necessary. *H. W. W.*

East Lothian Stocks.

This is by far the best strain of Stock to grow for spring use in pots. For a succession to the first sowing another should be made at once. We prefer sowing in the ordinary small wooden seed trays, cover the seed lightly with rather fine soil, and place in a cool frame, keeping it tolerably close until it germinates. A little shade is also beneficial—it obviates the necessity of much watering, which is injurious, and liable to cause damping, especially if indulged in before the young plants have acquired the rough leaf. As soon as the seedlings are fit to handle nicely they should be pricked out, and in their earlier stages most progress is made in a prepared bed of rich soil in a cool frame. Until they have taken to the shift, keep somewhat close, but in all future stages of their growth plenty of air should be afforded. When they are about 3 or 4 inches high, pot them up, either singly in large 60's, or three round the sides of a pot a size larger. Return them to the frame, standing the pots on ashes, plunging them in coal ashes. Sometimes we have potted them into their flowering-pots, 5 to 7 inches being the sizes used, at once, and with excellent results, thus saving the trouble of future shifting. A rich loamy compost suits them best, and it should be pressed firmly into the pots. During winter the frames should occupy a sunny position which, with attention to the airing, is a better place for them than in company with subjects requiring fire-heat. If all goes well they should begin flowering about March. There are five distinct varieties of the strain—two whites, a red, a purple, and crimson, either of which will come quite true from seeds.

Sweet Scabious.

These are good companion plants to Stocks and should be treated in a similar way; but we prefer them to be potted at once, when large enough, into their flowering pots, three plants being put into a 32. They should be stood out in the open till the approach of severe weather, when the same kind of protection as that afforded the Stocks should be given them. The pots may then be introduced into a growing greenhouse temperature in batches as required in spring, when they will soon throw up their fragrant flower-heads.

Schizanthus.

These useful decorative plants have a fine pyramidal habit when well grown in pots. A pinch of seed should now be sown, when the plants are required early, and treated similarly to the Scabious, except that one plant to pot is best. They will come in flower with them. Papilionacea, and the dwarf red retusus (Grahamii) are the best strains. *F. R.*

Vegetables.

CABBAGES.

It is time now to be thinking of sowing the first batch of these, and it often happens, at this season of the year, that there is some difficulty in getting such small seeds as Cabbages to germinate, owing to the heat and general dryness of the air and earth, but when only small or limited-sized beds have to be dealt with, this may easily be got over. The way to manage is to first dig up the ground, and then well water it, when, after laying a short time, it will be in a condition for raking. This should be done so as to make the surface fine and smooth, and then the seed may at once be sown thinly, and lightly covered with soil, after which the whole bed, or beds, should be shaded. This can be done with mats laid over and pegged down at the sides, so as to keep them from blowing off, or the shading may be effected by making use of Laurel or other evergreen branches, of sufficient thickness just to keep off the fierce sun. With the beds so protected, the young plants show themselves quickly; care must be taken to remove the covering at once.

Young Cabbages want much looking after when up, as fly frequently attacks them, and if these are not driven off, in a few days it is all over with the plants. One of the surest and best remedies against fly is to dust the leaves when moist with a mixture of fresh slaked lime and wood-ashes. Tobacco-powder is also a very good and a safe preventive. Cabbage for early work is Ellam's; it makes but few outside leaves, turns in quickly, and does not bolt readily, but forms small, close hearts of a delicate and mild flavour. Being of small size, plants may be planted about 1 foot to 18 inches apart, and 1 foot 16 inches between the rows. *J. S.*

Cauliflowers.

It requires care and forethought to have a supply of either Cauliflower or Broccoli, and it can only be obtained by growing the latest Broccoli and the earliest of Cauliflowers, nursing the Cauliflower plants through the winter. My favourite Cauliflower is the Early Erfurt, a very dwarf compact variety, producing large white heads well protected by the heart-leaves, which are of delicate flavour. The time to sow Cauliflower so as to have them at the period referred to is about the middle of August, and to make sure of getting the plants up in dry weather is to shade the beds, and adopt the same measures to preserve them from fly and mildew. For wintering the plants it is best to pot in 60-sized pots, and then to plunge them in leaf-mould or ashes up near the glass. Although Cauliflowers appear

very tender and often get killed by frost, they are only affected injuriously by it when they are wet, as I have found with lights over them they will endure almost any amount of cold, and the more air they get, when there is no frost, the finer and stronger they are. This being so they should never be coddled by shutting them up in open weather as this is almost sure to draw them, and cause bolting or premature turning-in, and this seldom happens with sturdy thick-legged plants. The soil for potting should be light and rich. *J. S.*

The Hardy Fruit Garden.

Raspberry Plantations.—Where the fruit has been gathered the plants should have all the old fruiting canes cut out, to give the young canes intended to be reserved for fruiting next year space to grow; and if these should be of weakly growth, a rich mulching or watering with manure-water should be applied to them. As a mulch, cow-manure is one of the best, especially if the land be of a light kind.

Apple and Pear Trees.—Young standards will be the better for some amount of pruning, such as cutting back to a few eyes all those shoots which spring from the branches selected to form the head, and are not wanted for the forming of more branches. The leaders may have their ends pinched in, according to their strength. Examine the ties, and do not let these clasp the bark too tightly, but, if necessary, cut the ties and refasten them, placing a soft pad between the stake and the stem.

Nuts.—Bushes, especially young ones, and if getting filled up in the centre by much growth of shoots, should be thinned out freely, and all strong spongy shoots cut entirely away, and suckers springing from the root must be taken out with a suckering implement. To succeed with Cobs and Filberts, the heads of the bushes must be kept well opened out, and trained in the vase or cup form, and then each branch may be made to produce quantities of twiggy fruitful spurs. *H. Markham, Mereworth Castle, Kent.*

Home Correspondence.

STRAWBERRY BRITISH QUEEN.—In your issue for July 20, I was very pleased to notice the remarks of "F. R." in praise of this fine old Strawberry. To me this is the King as well as Queen of Strawberries. Many of the newer sorts do certainly put the old Queen in the shade in the matter of size and appearance, but not one of them can approach it in the point of flavour, for they lack the richness of this old favourite. True, it does not travel like Sir Joseph Paxton, but if a little care is exercised in gathering it before it is too ripe, it will travel almost as well. British Queen is planted extensively in the Abbey garden at Cirencester, and this season it has borne an extraordinary crop. But Mr. Taylor, the gardener, does not give quite so much space between the rows as that recommended by the Editor. I think the distance between the rows is 2 feet, and 18 inches from plant to plant. I think the soil has a great deal to do with the success which attends Mr. Taylor, the present season being no exception, for should the plants escape late spring frosts there is pretty sure to be a good crop. In another garden not far off, in which the soil is of a totally different character, it being light and dry, British Queen will not grow at all. The fruits ripened perfectly in the Abbey garden, and the plants are in robust health. *T. Arnold.*

GOOD BORDER CARNATIONS.—I send for your inspection a collection of my Shirley strain of Carnations; these flowers were cut from plants raised from seeds of my own saving, which has given a result of not less than 80 per cent. of good double flowers, many of which are equal to named varieties; the plants are very robust and much more floriferous than plants raised from layers or cuttings, and they do not entail one-tenth part of the trouble or care that named sorts require. I sow the seed at the end of July, and winter in a cold frame or sheltered border, planting out into flowering beds at the end of March or early in April; all of the plants do not flower the first year, but those that remain over come into bloom very early the following season, so that we are able to cut Carnation flowers in quantity from the early part of June to the end of October. *Thos. Butcher.* [A beautiful lot of Carnations to have been raised from seed, and fit for every use a Carnation may be put to, except of course, to figure at a show of florists' flowers. Ed.]

GOOSEBERRIES FOR NEW YORK.—In the south of Ireland, and where we are within six days' journey of America, and the great markets of Boston, New York, and Philadelphia, I fancy we should grow Gooseberries by the acre to pluck green for direct shipments with the States. I don't think there would be any duty, and as they cannot grow Gooseberries with any certainty in the State of New York, it should pay to send green fruit for tarts and Gooseberry fool. It would be a good plan to have a trial lot put on board one of the direct steamers in Queenstown, and have these cooked and served when approaching New York. There should be a large demand in April and May in the places mentioned. [Ed. Try it.] *W. B. Hartland, Blackrock, Cork.*

CLIANTHUS AT INDEO.—My attention has been drawn to Mr. Aggetts' note in our last issue, p. 110, on the very fine Clianthus at Indeo, Bovey-Tracey. His description tallies with a notice of mine on this same specimen, and which was published in the *Gardeners' Chronicle* some three or four years ago. In that case the plant under notice was not Clianthus Dampieri at all, but an unusually grand example of Clianthus puniceus—a showy, free-flowering plant, with pendulous racemes of scarlet, pea-shaped flowers. It is gratifying to know that this lovely climber is now often met with in Devonshire, where it is nearly hardy. At Teignmouth a beautiful specimen of this plant was observed by me growing out-of-doors, and which nearly covered one end of a cottage, in which a gardener lived. I fear that what Mr. Aggetts heard in a lecture years ago at Kew concerning the mifliness of Clianthus Dampieri is only too true. Ten or twelve years ago plant growing of a high character was practised at Exeter Nurseries, as was shown amongst others by the collection of fine specimen plants belonging to Messrs. Lucombe, Pince & Co. at that time. The culture of Clianthus Dampieri was taken in hand by them, and I well remember the many experiments made, and the miserable-looking specimens—not more than a foot or so in height—that were produced by pot culture, the pot containing the plant being placed inside another one, so that the soil could be kept in a moist state without putting water in direct contact with the plant, which would be fatal. *W. Napper, Chelsea.*

EFFECTS OF LIGHTNING.—On p. 18 you record the effect of lightning on an Elm at Dulwich. I have recently seen a result somewhat similar here, but instead of on an Elm the result was seen on a tall scaffold pole. On the 12th ult. I arrived at this place just before the commencement of one of the heaviest storms I remember. In the midst of the storm I saw from my window a vivid flash of lightning, which seemed close to me; in descending to the earth it divided in two, and one of the lateral flashes again divided into three; one of these minor flashes appeared to descend vertically to the ground. The next day I found that a scaffold pole had been struck by this flash, and the results were extraordinary. About a foot of the upper part of the pole was split into three or four pieces, and hurled for some distance. The lightning loosened the annual rings. In further descending towards the ground the lightning scooped out narrow splinters of wood about half an inch by a quarter of an inch, and from 4 to 5 feet long, for a length of 20 feet from the top of the pole. These pieces were ploughed out with great regularity and precision, the dimensions in the different pieces scarcely varying. The long splinters were like thin very straight rods made by hand. Near the middle of the pole a horizontal pole was corded on, but the lightning did not injure the horizontal pole, although it scorched the rope which tied the two together. The storm, which was of extraordinary violence, lasted from 7.30 to 9.30 P.M.; there was no wind till the storm had virtually ceased. The downpour of rain must have been almost without parallel in this country. The town was flooded; some basements were full of water up to the ceiling, and with an addition of 2 and 3 feet of water in the ground-floor rooms. In one house there was 9 feet of rain-water, and furniture and provisions were extensively floated and destroyed. In places where the roads are low there was 4 feet of rain-water, and in a railway cutting about a hundred tons of chalk and earth were washed down, which temporarily stopped the railway traffic. A mill had one of its sails completely destroyed. The town during all this tumult was in darkness, as, theoretically, it should have been a fine moonlight night, when no lamps are lighted. The fire-bell commenced ringing in the midst of the storm, the lightning having fired two farmsteads in the neighbouring village of Eaton Bray. A farmer close by here had a chimney-pot smashed to atoms. Many horses attached to vehicles became quite ungovernable; nothing could be done with them, owing to their fright at the incessant lightning, the thunder, and the floods. As the storm came to an end, a short, sudden hurricane of wind arose, which lifted trees out by the roots, and carried away the entire top and sails off a windmill. At Watford, to the south, a man was killed; at Tilsworth, to the north, four cows were killed; at Leagrave a shepherd's dog (inside a house) was killed; and two horses were killed at Lilley. Of course the floods of water deposited tons of mud in the cellars of the town, the streets looked like shallow rivers, and the road metalling was either torn up or left perfectly clean. In some places walls were washed down. The more nervous railway passengers remained at the station for nearly two hours, and after this time they could not reach the town entirely by the road. Considerable damage was done to the crops, but as there was no wind during the storm, the rain fell perpendicularly and so injured the corn less than it would otherwise have done. Hay that had not been got up was washed away, and in some places deep holes were made in the fields and footpaths. Ten times more injury was done than I have mentioned, and even now no complete record of the destruction is to hand. I have secured most of the remarkable splinters from the pole; the ends of the annual rings are in the narrower dimension, and many of the rings are slightly free from each other. *W. G. S., Dunstable.*

LONGEVITY OF FERN-SPORES.—I have been asked by several botanists if I knew how long Fern-spores retained vitality. To test them I gathered in the autumn of 1886 some spores of the common Brake Fern (Pteris aquilina), and sowed some. Of course they vegetated freely. In 1887 spores of the same gathering grew freely, but in 1888 they failed. However, failure in this case was due to some other circumstance than weakness in the spores, as is proved by the sowing made this year, which vegetated very freely. I have still a quantity of the spores gathered in 1886 for future annual sowings. Meanwhile it may be worth recording that the spores of Pteris aquilina vegetated perfectly after having been kept in a seed-room drawer for three years. *W.*

Fruit Register.

Strawberry, Waterloo.

This new variety undoubtedly deserves to be commonly grown. Its crimson fruits are both large and handsome, and of excellent flavour—far preferable in this respect to those of the Helene Gloede type. Its firm flesh is rich in colour, and the surface is smooth, thereby enabling the fruit to bear transit to a long distance without injury. It is a mid-season variety, ripening between President and Loxford Hall Seedling—at a time, therefore, when first-rate Strawberries are not too plentiful. For packing to send to a distance, and for keeping up an unbroken supply of fruits of the best quality for dessert, it is unquestionably a valuable variety to grow. *T. Coomber.*

Peach Ecerardt.

A large yellow-fleshed early Peach, recommended by M. Burvenich as superior to any of its class. A coloured figure is given in the *Bulletin d'Arboriculture* for May last.

Monastery Pear.

This is an extremely hardy Pear from the neighbourhood of Dantzig, where, at 600 feet above the sea level, it bears fruit abundantly in most years. It is, according to the assurance of the minister, Grünholz, of Sianowo, an able pomologist, well adapted for drying purposes and for the dessert. In size and form the fruit resembles the well-known

Chaumontelle, being, on an average, 3 inches long and 2 inches broad, a vertical section of the fruit being larger than the other. It is stated that the variety was cultivated in the garden of the nunnery at Zuckau, about 10 miles from Dantzic, and has not become as yet much distributed. Fruits plucked on August 25 and September 8 and 15 were ripe in the first instance on September 12, and the others towards the end of that month. Growth is strong, the tree in mature age becoming round-headed. It grows in any kind of soil, and is well adapted for planting in orchards, and is a good road-side tree. The fruit, when gathered, is grass-green, becoming, when ripe, of a yellowish-green colour, the sunny side a little reddish. The fruit is fit to gather in its habitat at the end of August and commencement of September. *Garten Flora.*

Benefits of Spraying.

Mr. A. C. Hammond, Secretary Illinois Horticultural Society, states that, as a result of spraying one portion of his Apple orchard in 1887, he gathered 500 bushels of Apples, of which 75 per cent. were perfect, and 85 per cent. marketable; while from the same number of trees in the other orchard he had not a peck of perfect fruit. *Canadian Horticulturist.*

Simon's Plum.

From the *Canadian Horticulturist* we take the following account of a Plum recommended for growing in climates where the climate is not propitious to the growth of the Peach. This fruit promises to be a real acquisition to fruit growers who, like us in Ontario, live on the Northern border of the Peach belt, because it may take the place of the Peach, at least in part. Though commonly called a Plum, the fruit, especially when cooked, resembles that of the Peach; and the tree itself, both in flower and foliage, more properly belongs to the Peach than to the Plum family.

It is named "Simon's Plum" after Eugene Simon, French Minister at Pekin, who found it growing in North Eastern China, and forwarded it to his brother-in-law, Simon Louis, of Metz. Prof. Budd says he first saw it bearing in the valley of the Moselle, in Eastern France; and being favourably impressed with it, he introduced it into Iowa for testing. He has found it to be as hardy as the Chicasaw Plum, and recommends it for extended trial.

Plant Notes.

ISOLOMA HIRSUTA.

Mr. W. Bull, of Chelsea, we believe, claims the introduction of this beautiful plant for the United States of Colombia, and which is described in his *Catalogue* for 1882, as "of free growth, producing in profusion attractive tubular flowers of a bright orange-vermilion colour, the upper lobes scarlet, and the lower lip and throat orange spotted with scarlet." It is a beautiful Gesneraceous plant, growing some 5 feet or more in height, having ovate acuminate leaves, covered with silky hairs; the margins are serrated, banded with dull red hairs, which also partly cover the back of the leaf. Greenhouse temperature is more suited to its requirements than stove, for if the temperature be too high, it makes much growth and has very little bloom. When trained to a pillar or trellis it has a pretty effect, and is often in flower during the year. It should be grown in a compost of fibry rough peat, rejecting much of the finer material, and using a fair quantity of silver sand. Corymbs are produced freely both underground and upon older portions of the stem, especially when they are somewhat aged.

Eranthemum Andersoni.

This is a very pretty-flowered stove species, and one that may be had in flower at various times during the year by simply propagating cuttings at different periods. It is not so generally known and grown as it deserves to be. The plant grows from 2 to 3 feet or more in height, and possesses large terminal spikes of flower; the tube of the corolla is slender, about 1½ inch in length; the two upper and lateral lobes are pure white, while the lower one, or lip, is prettily dotted with crimson. Cuttings strike readily at all times. The young plants must be stopped at the points occasionally, in order to get them bushy. The plants do not require large pots, and should be kept as near the glass as possible, without injury. During the summer they may be grown in an intermediate-house, but in winter a stove temperature is needful. For soil, use fibrous loam, with a good addition of rather coarse sand.

E. eboracense is another free-flowering plant, the flowers being small, and of a pure white; it has a bush-like habit, and is a slow grower. Cuttings should be taken in early spring, and grown on in a warm pit or frame. It is a plant of value for cut blooms.

E. Veitchii is neat and stiff in growth, and bears perfect flowers. From what I have seen of it, it is rather difficult to cultivate. *W. Harrow.*

Foreign Correspondence.

HYBRIDISING.

In answer to "Enquiries," I would say that I impregnated Carica porphyrocarpa, a stove plant, with ovoid, red fruits and scentless, which I never could keep alive after it had fruited. The pollen employed was that of Carica cundinamarcensis, a strong-growing greenhouse plant, with sweet-scented, costate, yellow fruits. The offspring has nearly the foliage of the male parent, and the same strong, hardy constitution; the fruits are red, scentless, and larger than those of the female, ovoid in shape, and much larger (twice) than the fruits of the male plant. Both C. cundinamarcensis and the hybrid can be seen at Kew, to which garden I gave them; but C. porphyrocarpa is, I fear, lost to gardens, on account of its weak constitution. The hybrid fertilised by C. cundinamarcensis has red fruits, very slightly costate, and faintly scented. *Jean van Volxem.*

Obituary.

Miles Joseph Berkeley.—Full of years, rich in the respect and affection which a long life of singular manliness and almost unparalleled service to Science and Horticulture have most worthily won, Miles Berkeley died on the 30th ult. at Sibbertoft, near Market Harborough, of which place he had been Vicar since 1868. On more than one occasion we have had an opportunity of calling attention to the leading facts of his career, but so distinguished was he, so full of valuable lessons was his life, that no apology is needed for again alluding to them. We, indeed, have special reasons for doing so and for recording our gratitude to one, who, almost from the first establishment of this Journal in 1841, up to two or three years since, was a tower of strength to us, and upon whose encyclopædic knowledge and well-balanced judgment successive editors could always rely. At one time the familiar initials, M. J. B., were rarely, if ever, absent from our weekly issue. Berkeley's eminence was gained in the field of Cryptogamic botany, and especially in the discrimination and description of fungi; but in almost all departments of botany and natural history his knowledge was both wide and deep, while his classical attainments were very considerable, and his general knowledge, as we have said, so encyclopædic, that it is difficult to point to any subject of which he did not know something. His mind was eager and receptive almost to the last; it is only a few years since that we once found him busy in acquiring some knowledge of Polish, for the purpose of making himself acquainted with the results of some investigations made by Rostafinski and others.

At the Royal Horticultural Society Berkeley acted for several years, after the decease of Lindley, as botanical referee and general counsellor, a post for which he was well suited, as among his many attainments his knowledge of the practical details of horticulture was as thorough as was his acquaintance with the principles. It was, however, particularly in his knowledge of fungi, and their effects in producing disease in plants, that his services to horticulture were most marked; and there are many still left who well remember how the old man's eye kindled and his noble presence seemed to stand out in bolder relief as he dilated on the favourite objects of his study.

Miles Joseph Berkeley was born in the parish of Oundle, Northamptonshire, in 1803, a member of the famous family of Berkeley, tracing his descent from Thomas Mowbray, Duke of Norfolk. He was educated at Rugby and Christ's College, Cambridge, where he entered in 1821. He became a scholar of his College, and graduated as fifth senior optime in 1825. His friends at the time considered that he might well have taken even a higher place had his mind not been even at that early period imbued with the taste for natural history. The Cambridge of that date was widely different from what it is now, and there was but little scope then for, and little respect paid to natural science and its devotees. It is only of late years that his College recognised how distinguished a pupil they had had the honour of producing, and tardily conferred on him the Honorary Fellowship of his College. Leaving the University, he became a curate at Margate, and here he made the acquaintance of Mr. Hoffmann, a surgeon, and of Mr. Tucker, a gardener, subsequently to become known for their discovery and researches into the nature of yeast and of the Vine mildew (then known as Oidium Tuckeri). His recommendation of sulphur as an application was productive of the best results, and has been much extended in similar cases since then. In 1833 he became incumbent of two small parishes near Wansford, and eked out their scanty revenues by taking pupils. At this period (1833) his first separate publication, so far as we have been able to trace, was published in the shape of *Gleanings of British Algæ*, though doubtless a search through Loudon's *Magazine of Natural History*, and other periodicals of the time, would show still earlier work among the Mollusca, for example. Berkeley, however, first made his mark in 1836, when he contributed to Dr. (afterwards Sir William) Hooker's *British Flora*, the account of the fungi of the British isles, a truly remarkable piece of work for the time; and one which has only been superseded quite of late years, when new methods of research and the more complete investigations into the life-history of fungi have necessitated a thorough revision of previous work.

Mr. Berkeley was the first, and, till quite recently, the only botanist in this country who devoted systematic attention to the diseases of plants; and his papers on vegetable pathology, which were commenced in these columns in 1854, and continued at intervals till 1857, still remain the most comprehensive of their kind in the language. The great extension of knowledge in this direction, especially in Germany, of course renders recasting necessary, but for historical purposes this series of articles will ever retain their value, and it may be of interest to add, that a full index of the contents of these papers is given in our volume for 1857, p. 677.

In 1857 Berkeley published his *Introduction to Cryptogamic Botany*, which, like his papers on Vegetable Pathology, occupied the field without a rival, till the recently published work of Messrs. Bennett & Murray, to which it will be our duty shortly to call attention. *Outlines of British Fungology* followed in 1860; and a work on *British Mossses* in 1863. In addition to these standard treatises, Berkeley was continually at work on the description of fungi from all parts of the world, often in conjunction with the late Mr. Broome, whose patient skill, judgment, and leisure were valuable aids to the more hardly pressed Berkeley. These continued labours were recognized by the scientific

societies, who were proud to enrol so distinguished a naturalist among their Fellows. In 1863 the Royal Society did itself credit in conferring on Mr. Berkeley, not then a Fellow of that body, the greatest honour in its power to confer, viz., one of the Royal Medals. As showing the grounds on which this award was made, we may fitly cite what was said on the occasion by the President at that time, General Sabine :—

"The Council has awarded a Royal Medal to the Rev. Miles Joseph Berkeley for his researches in cryptogamic botany, especially in mycology. Mr. Berkeley's labours as a cryptogamic botanist for upwards of thirty-five years, during which they have been more especially devoted to that extensive and difficult order of plants the fungi, have rendered him in the opinion of the botanical members of the Council by far the most eminent living author in that department. These labours have consisted in large measure of the most arduous and delicate microscopic investigations. Besides papers in various journals on fungi from all parts of the globe, and in particular an early and admirable memoir on British fungi, the volume entitled *Introduction to Cryptogamic Botany*, published in 1857, is one which especially deserves to be noticed here. It is a work which he alone was qualified to write. It is full of sagacious remarks and reasoning; and particular praise is due to the special and conscientious care bestowed on the verification of every part, however minute and difficult, upon which its broad generalisations are founded. Mr. Berkeley's merits are not confined to description or classification, there are facts of the highest significance which he has been the first to indicate, and which in many cases he has also proved by observation and by experiments. We refer to his observations on the development of the reproductive bodies of the three orders of Thallogens (Algæ, Lichens, and Fungi), and on the conversion under peculiar conditions of certain forms of their fruit into others, to the exact determination of the relations, and sometimes of the absolute specific identity of various forms of fungi previously referred to different tribes; and to the recognition in many species and genera of a diversity of methods of reproduction in giving origin to parallel series and forms. As intimately connected with the life-history of fungi, the intricate subject of vegetable pathology has been greatly elucidated by him; and he is, indeed, the one British authority in this department. His intimate acquaintance with vegetable tissues, and with the effects of external agents, such as climate, soil, exposure, &c., has enabled him to refer many maladies to their source, and to propose methods which in some cases have proved successful of averting, checking, and even curing diseases in some of our most valuable crops. In this line of research he has also demonstrated, on the one hand, that many so-called epiphytal and parasitic fungi are nothing but morbid conditions of the tissues of the plant; on the other hand, that microscopic fungi lurk, and produce the most disastrous results, where their presence had been least suspected."

In 1878, at the request and in the name of a body of subscribers, a portrait of the Rev. M. J. Berkeley, painted by Peel, was presented by Sir Joseph Hooker to the Linnean Society, in whose meeting room it hangs. Mr. Berkeley acted as examiner at the Universities of London, Cambridge, and elsewhere. Mr. Berkeley's services were also utilised by the Government on several occasions, especially with regard to the Potato disease. A small Government pension was a few years since granted to the reverend gentleman, who found, as many others do, that devotion to science is not a lucrative occupation, or one calculated to render much help in the education of a large family. It has ever been a matter of surprise to his friends that no higher Church preferment was ever offered to Mr. Berkeley, for assuredly he did not allow the claims of Science in any way to interfere with his duties as a parish priest. It is only another illustration of the adage that a prophet has no honour in his own country.

Mr. Berkeley, till of late years, had a striking and dignified *physique* and a noble head, which in this case furnished a true index of the brain power within. His straightforward and unpretentious simplicity, yet strength of character, was combined, not only with caution, vast knowledge, and sagacity, but with personal qualities and considerateness towards others which endeared him to his associates, and caused him to be venerated by them. Our portrait, an excellent likeness, engraved by Mr. W. G. Smith, shows the great botanist as he was ten years ago, when age and infirmity had not yet left their trace on his noble features. Major-General Berkeley, a son of the deceased gentleman, is known to many of our readers as an assiduous student of Orchids in Burmah and other parts of India.

The Weather.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending July 29.	Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	89	0	+ 188	+ 4	2 —	138	20.8	23	24
2	1 —	100	0	+ 64	+ 5	2 —	109	13.4	32	31
3	3 —	101	0	+ 40	+ 7	0 av.	100	12.4	20	28
4	4 —	107	0	+ 15	+ 112	0 av.	107	14.4	22	30
5	4 —	107	0	+ 22	+ 60	1 —	100	16.8	26	28
6	3 —	119	0	+ 72	+ 75	3 +	105	13.7	28	29
7	2 —	93	0	+ 94	— 23	3 —	115	21.3	34	32
8	3 —	102	0	+ 71	— 1	1 —	105	15.5	32	31
9	3 —	109	0	+ 3	+ 88	1 —	104	18.6	33	36
10	3 —	99	0	+ 51	— 53	3 —	127	18.8	37	28
11	2 —	113	0	+ 22	— 14	1 +	115	18.6	33	34
12	2 —	121	0	+ 97	— 16	1 —	113	14.8	35	39

The districts indicated by number in the first column are the following :—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending July 29, is furnished from the Meteorological Office :—

"The *weather* has again been in an unsettled condition very generally, with occasional (but not heavy) falls of rain. Towards the end of the period, however, the conditions underwent considerable improvement. Some thunder and lightning were experienced from time to time in various parts of the Kingdom.

"The *temperature* has continued below the mean, the deficit having ranged from 1° in the north and east of Scotland to 4° over eastern and central England. The daily maxima were very low for the time of year, but towards the end of the period temperature was rising, and readings varying between 73° and 80° were generally recorded. The lowest of the minima occurred during the earlier part of the week, and ranged from 36° to 40° in Scotland, from 38° to 45° over England, and 41° to 45° over Ireland. In the "Channel Islands" the lowest reading was 53°.

Rainfall has been rather more than the mean in 'England, S.' and 'Ireland, S.,' but somewhat less in most other districts.

Bright sunshine has been deficient very generally, the percentage of the possible amount of duration having ranged from 20° in 'England, N.E.' to 37° in 'Ireland, N.'

Markets.

COVENT GARDEN, August 1.

Market quiet, with prices unaltered. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Currants, Black, ½-sieve	... 4	0– 6 0	Lemons, per case	...12	0–21 0
— Red, ½-sieve	... 3	6– 4 6	Peaches, per doz.	... 6	0–15 0
Gooseberries, ½-sieve	3	0– 3 6	Pine-apples, Eng., lb.	1	6– 3 0
Grapes, per lb.	... 0	6– 2 6	— St. Michael, each	2	0– 6 0
			Strawberries, per lb.	0	4– 1 0

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beans, Fr., per lb.	... 0	6– ...	Mushrooms, punnet	1	6– ...
Beet, red, per dozen	1	0– 2 0	Mustard and Cress, punnet	... 0	4– ...
Carrots, per bunch	... 0	6– ...	Onions, per bunch	... 0	5– ...
Cauliflowers, each	... 0	3– ...	Parsley, per bunch	... 0	4– ...
Celery, per bundle	... 1	6– 2 0	Peas, per quart	... 1	3– ...
Cucumbers, each	... 0	6– 0 9	Shallots, per lb.	... 0	6– ...
Endive, per dozen	... 2	0– ...	Spinach, per bushel	... 3	6– ...
Green Mint, bunch	... 0	4– ...	Tomatoes, per lb.	... 1	0– ...
Herbs, per bunch	... 0	4– ...	Turnips, per bunch, new	 0	5– ...
Leeks, per bunch	... 0	3– ...			
Lettuce, per dozen	... 1	6– ...			

Potatos.—Foreign supplies finishing up badly, and very low price, most samples diseased. Home arrivals are now heavy: Kidneys, 3s. 6d. to 4s. 6d. per cwt.; Beauty of Hebron, 3s. to 4s.; Early Rose, 3s. to 3s. 6d. The late heavy rain is causing disease to spread in some districts. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6	0–18 0	Fuchsias, dozen	... 3	0– 8 0
Balsams, doz.	... 4	0– 6 0	Hydrangea, per doz.	9	0–18 0
Begonias, dozen	... 4	0–12 0	Lilium lancifolium, per dozen	...	...12 0–24 0
Cactus, per dozen	... 9	0–18 0	— auratum, doz.	...12	0–30 0
Calceolarias, dozen	4	0– 9 0	— longifolium, doz.	12	0–24 0
Crassula, per dozen	12	0–30 0	Lobelias, dozen	... 3	0– 5 0
Cyperus, per dozen	. 4	0–12 0	Marguerites, doz.	... 6	0–12 0
Dracæna terminalis, per dozen	...	...30 0–60 0	Mignonette, doz.	... 3	0– 6 0
— viridis, per doz.	12	0–24 0	Musk, dozen	... 2	0– 4 0
Erica, various, doz.	12	0–30 0	Nasturtiums, doz.	... 3	0– 5 0
Euonymus, in var., per dozen	... 6	0–18 0	Palms in var., each	2	6–21 0
Evergreens, in var., per dozen	... 6	0–24 0	Pelargoniums, per dozen	... 6	0–15 0
Ferns, in var., doz.	4	0–18 0	— Ivy-Leafed, doz.	3	0– 4 0
Foliage plants, various, each	... 2	0–10 0	— scarlet, doz.	... 2	0– 4 0
Ficus elastica, each	. 1	6– 7 0	Rhodanthe, per doz.	4	0– 6 0
			Stocks, dozen	... 4	0– 6 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	... 2	0– 4 0	Mignonette, 12 bun.	2	0– 4 0
Bouvardias, per bun.	0	6– 0 9	Pansies, 12 bun.	... 1	0– 2 0
Cactus blooms, doz.	1	6– 2 0	Pelargoniums, 12 spr.	0	6– 1 0
Carnations, 12 bun.	3	0– 6 0	— scarlet, 12 spr.	... 0	3– 0 0
— 12 blooms	... 1	0– 3 0	Pinks (var.), 12 bun.	2	0– 4 0
Cornflowers, 12 bun.	1	0– 4 0	Primulas, dbl., 12 sp.	0	9– 1 0
Delphinium, 12 bun.	3	0– 6 0	Rhodanthe, 12 bun.	4	0– 6 6
Eucharis, per dozen	3	0– 6 0	Roses, Tea, per doz.	0	6– 2 0
Gardenias, 12 blooms	2	0– 4 0	— coloured, dozen	2	0– 4 0
Gladioli, 12 bun.	... 2	0– 9 0	— red, per dozen	... 0	4– 1 0
— 12 sprays	... 1	0– 2 0	— Safrano, dozen	... 0	6– 1 0
Heliotropes, 12 spr.	0	6– 1 0	Stephanotis, 12 spr.	2	0– 4 0
Lavender, 12 bun.	... 6	0– 8 0	Stock, 12 bunches	... 3	0– 6 0
Lilium, vari., 12 bls.	1	0– 5 0	Sweet Sultan, 12 bun.	4	0– 6 0
Maiden Hair Fern, 12 bun.	...	... 4 0– 9 0	Sweet Peas, 12 bun.	2	0– 6 0
Marguerites, 12 bun.	3	0– 6 0	Tuberoses, 12 blms.	... 0	6– 1 0

Orchid bloom in variety, fairly good supply.

SEEDS.

London: *July* 31.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., London, report that there was but little business passing on the seed market to-day; nevertheless, a much better inquiry now exists for those seeds required for autumn sowing. More money is asked for new French Trifolium, holders on the other side having raised their prices. White Mustard is in greater favour. The new Rape seed, being out of condition, causes yearling seed to be more firmly held. Canary seed neglected. Hemp seed steady. New Rye promises to be cheap, but much will be of poor quality

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended July 27:—Wheat, 30*s.*; Barley, 25*s.*; Oats, 19*s.* 10*d.* For the corresponding week in 1888:—Wheat, 32*s.* 6*d.*; Barley, 25*s.* 1*d.*; Oats, 17*s.*

FRUITS AND VEGETABLES.

Spitalfields: *July* 31.— Quotations :— Apples, 5*s.* to 7*s.* 6d. per bushel; Pears, 2*s.* 9*d.* to 3*s.* 6*d.* per half-sieve; Gooseberries, 3*s.* to 4*s.* do.; Black Currants, 5*s.* 6*d.* to 6*s.* do.; Red Currants, 3*s.* 6*d.* to 4*s.* do.; black Cherries, 7*s.* to 10*s.* do.; Raspberries, 22*s.* to 24*s.* per cwt.; Orleans Plums, 5*s.* 6*d.* to 7*s.* per half-sieve; English Tomatos, 4*s.* to 6*s.* per 12 lb.

foreign Tomatos, 7*s.* 6*d.* to 11*s.* per case of 12 boxes; pickling Walnuts, 3*s.* 6*d.* to 4*s.* per half-sieve; Cabbages, 2*s.* 6*d.* to 5*s.* per tally; Cauliflowers, 2*s.* to 4*s.* 6*d* per dozen; Seakale, 1*s.* to 1*s.* 6*d.* per punnett; French Beans, 3*s.* 6*d.* to 4*s.* 6*d.* per bushel; scarlet Beans, 4*s.* to 5*s.* 6*d.* do.; Broad Beans, 1*s.* 6*d.* to 2*s.* do.; Peas, 3*s.* to 3*s.* 6*d.* do.; do., 5*s.* 6*d* to 8*s.* per sack; Turnips, 2*s.* 6*d.* to 3*s.* per dozen bunches; Carrots 2*s.* to 2*s.* 6*d.* do; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* to 2*s.* do.; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 8*d.* to 1*s.* per score; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Leeks, 1*s.* 6*d.* to 2*s.* per dozen; spring Onions, 2*s.* to 3*s.* 6*d.* per dozen bunches; Vegetable Marrows, 1*s.* 3*d.* to 2*s.* per dozen; frame Cucumbers, 2*s.* to 3*s.* 6*d.* do.; Belgian Onions, 4*s.* to 4*s.* 6*d.* per bag of 110lb.; Dutch Onions, 4*s.* 3*d.* to 5*s.* per bag.

Stratford: *July* 29.—Prices:—Cabbages, 1*s.* 6*d.* to 3*s.* 6*d.* per tally; Turnips, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bunches; Mangels, 21*s.* to 23*s.* per ton; Hay, 60*s.* to 90*s.* per load; Straw, 33*s.* to 36*s.* per load; Onions, Egyptian, 80*s.* to 100*s.* per ton; do., Dutch, 3*s.* to 4*s.* per bag; do., Oporto, 9*s.* to 10*s.* per case; Apples, English, 4*s.* to 7*s.* per bushel; Carrots, 2*s.* to 3*s.* per dozen bunches; Marrows, 4*s.* to 7*s.* per tally; Cucumbers, 3*s.* to 3*s.* 6*d.* per flat; do., frame, 1*s.* 6*d.* to 4*s.* per dozen; Gooseberries, 5*s.* to 8*s.* per bushel; Peas, 2*s.* to 3*s.* 6*d.* do.; Broad Beans, 2*s.* 6*d.* to 3*s.* per bag; Pears, English, 4*s.* 6*d.* to 6*s.* per flat; Currants, red, 4*s.* 6*d.* per half-sieve; Plums, Dutch, 3*s.* to 3*s.* 6*d.* per bushel; Watercress, 6*d.* per dozen.

POTATOS.

Borough and Spitalfields, *July* 30. — Good supplies of home-grown and a slow trade. Early Rose, 50*s.* to 70*s.*; Regents, 65*s.* to 80*s.*; Myatt's, 60*s.* to 100*s.*; Hebrons, 55*s.* to 90*s* per ton.

Spitalfields: *July* 31.—Quotations: — Jersey flukes, 3*s.* 9*d.* to 4*s.* 6*d.* per cwt.; Magnums, 60*s.* to 70*s.*; Myatt's kidneys, 65*s.* to 75*s.*; Regents, 70*s.* to 80*s.*; Imperators, 60*s.* to 70*s.*; Early Rose, 60*s.* to 65*s.* per ton.

Stratford: *July* 30.—Quotations:—Regents, 60*s.* to 70*s.*; Hebrons, 55*s.* to 76*s.*; Early Rose, 50*s.* to 60*s.*; Kidneys, 50*s.* to 70*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime old Clover, 120*s.* to 144*s.*; new, 85*s.* to 110*s.*; inferior, 45*s.* to 76*s.*; best hay, 78*s.* to 112*s.*; inferior, 20*s.* to 50*s.*; straw, old, 40*s.* to 45*s.*; do. new, 24*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

Intelligent Readers, *do* please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and not to the Editor. All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Calceolaria Disease: *J. H.* The insects on the slide are young woodlice. They have probably nothing to do with the disease, except as scavengers. The real cause of the disease is not known.

Begonia Seedling: *S. C.* Brilliant of hue, and of much substance in petal.

Cucumber Disease: *A. B. D.* Probably owing to root-worms existing in small nodules in the root.

Diseased Potatos: *Foliejon.* No doubt your tubers were originally attacked by the Peronospora, abundance of which has been produced by culture. *Charles B. Plowright.*

Fungus: *M. R.* The young stage of the fearfully stinking Phallus impudicus (Stinkhorn).

Insect: *H. B.* A grasshopper, some of which are very destructive.—*W. Troughton.* The "animals on your Pear leaves are the larvæ of the Pear sawfly.—*H. B., Braintree.* The insect, entirely squashed, is a very juvenile green grasshopper, which had, no doubt, gnawed the buds of your Achimenes. You will probably find others in your cool flower houses if you look sharply midst the leaves. *W.*

London Purple: *L. C.* By this term is meant, we believe, a preparation of arsenic and copper,

Names of Fruit: *M. I.* 1, Cherry May Duke; 2, 3, Impossible to name from one fruit.

Names of Plants: *W. R.* 1, Spiræa Lindleyana; 2, S. discolor; 3, S. callosa var.; 4, S. flagelliformis; 5, S. Thunbergii; 6, Symphoricarpus vulgaris variegata; 7, Hydrangea nivea; 8, Thuia Wareana; 9, Retinospora pisifera; 10, Euonymus pendulus (E. fimbriatus of gardens).—*E. D. L.* 4, Eryngium amethystinum, true; 7, Campanula lactiflora, small fl. form.—*R. and A. M.* Anemia Phillitidis. — *C. W. D.* Cotula coronopifolia. — *G. W. R.* Hæmanthus magnificus, Herb.—*Victor.* 1, Sedum spurium; 2, Thalictrum aquilegifolium; 3, Sedum rupestre; 4, Spiræa Lindleyana; 5, Campanula isophylla alba; 6, Achillea aurea; 7, Sedum spectabile.—*M. I.* 4, the Bilberry (Vaccinium Myrtillus); 5, Antennaria margaritacea; 6, Sedum spurium. — *W. B.* A fungus, Graphiola phœnicis. — *E. D. L.* 1, Ligustrum sinense; 2, Echinops sphærocephalus; 3, E. Ritro; 4, Rosa multiflora; 5, Mutisia decurrens; 6, Elæagnus longipes; 7, 9, next week; 8, Veronica longifolia var. incarnata; 9, Melittis mellisophylla. —*G. W. B.* 1, Centranthus ruber; 2, Epilobium angustifolium; 3, Antennaria margaritacea; 4, Veronica longifolia; 5, Phlox setacea. — *C. B.* Lysimachia vulgaris (Loose-strife). — *A. B.* 1, Lychnis vespertina; 2, Gaillardia picta; 3, G. uliginosum; 4, probably Barbarea vulgaris: wretched specimens.—*G. W.* 1, Abelia rupestris; 2, Melittis melissophyllum; 3, Lysimachia ciliata. — *Miss W.* 1, Hydrocotyle vulgaris; 2, Viola palustris, probably.—*J. T. Smeeth.* Pyrola rotundifolia, a rare British plant.—*I. K.* 1, Please send another specimen in a tin box, or packed in cardboard; 2, Viburnum Lantana.—*Dr. M.* Lathræa squamaria.—*T. L. B.* 1, Oncidium longipes, Lindl.; 2, O. ranum, Lindl.; 3, Masdevallia maculata; 4, Lycaste plana; 5, Cattleya Loddigesii; 6, Epidendrum cochleatum.—*John M.* 1, Eryngium alpinum; 2, Sedum album; 3, Galega officinalis; 4, Liatris spicata; 5, Aconitum Napellus; 6, Begonia Sandersi; 7, Onychium japonicum; 8, Blechnum polypodioides.—*W. Stevens.* 1, Veratrum nigrum; 2, Lysimachia vulgaris; 3, Colutea arborescens (Bladder senna); 4, Campanula persicifolia.

Stem Bands for Fruit Trees: *A. B.* A continental remedy for the caterpillars of the winter moth, &c., consists of 1 kilog. resin, 600 grammes lard, 550 grammes stearine, and the cost is about 1*s.* per kilog. A kilog. of 1000 grammes=2 lb. about.

Vandas and Aërides not Flowering: *C. W. K.* The treatment of these is nearly identical, *i.e.*, plenty of light, heat, and moisture in the growing period, March—October; a day temperature, according to the weather, of 70°—85°; at night, 65°—70° in March and April, and afterwards 5° higher; in autumn and winter, 60°—65°. After October the plants will require less moisture, and none should be allowed to lodge about them: do not dry them off, or the leaves will shrivel and drop off. You have not done right by moving your plants into a cool vinery. The rest period is three months hence.

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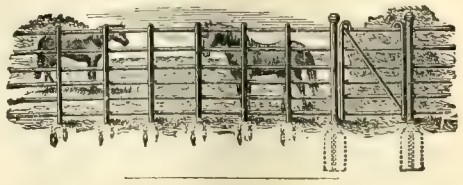
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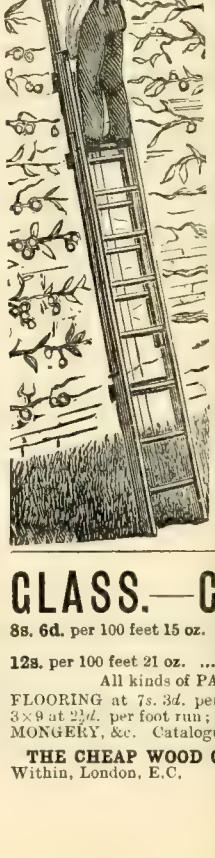
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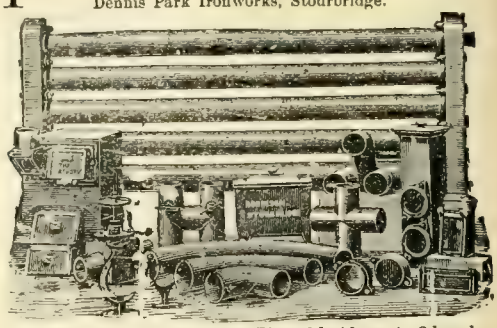
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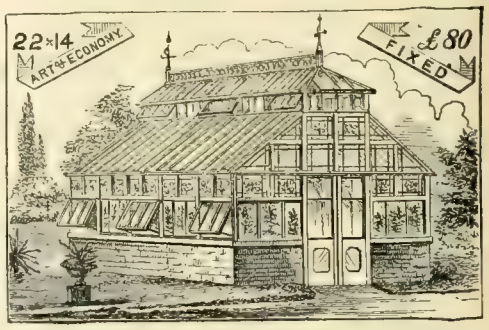
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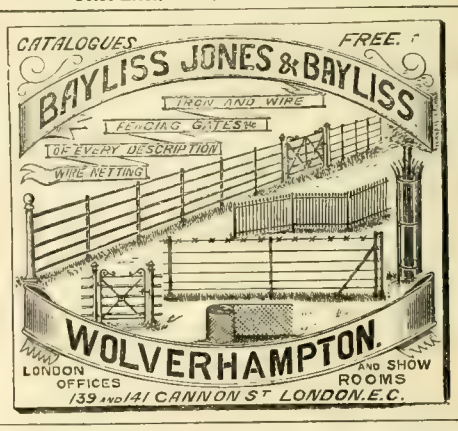
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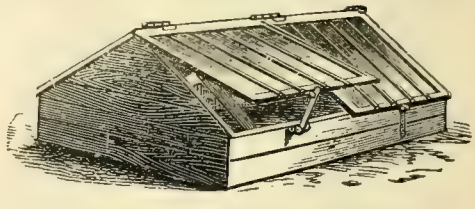
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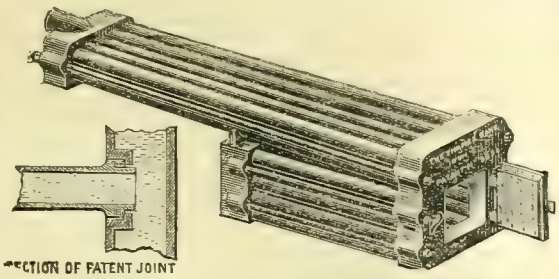
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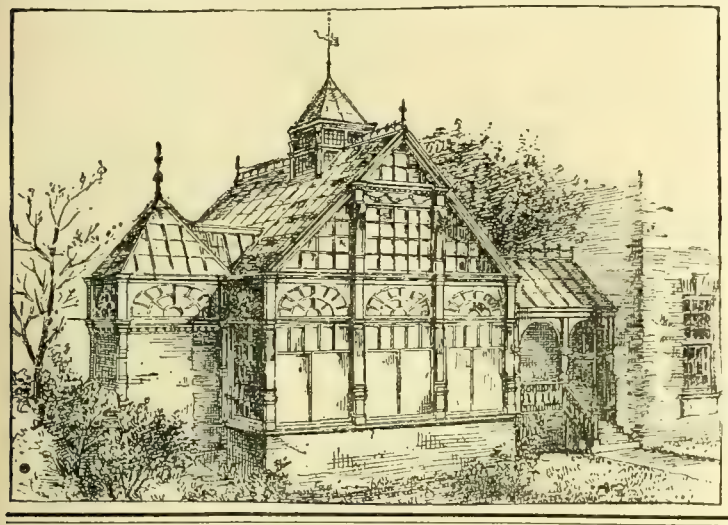
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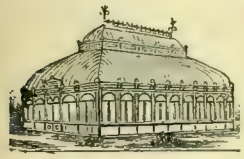


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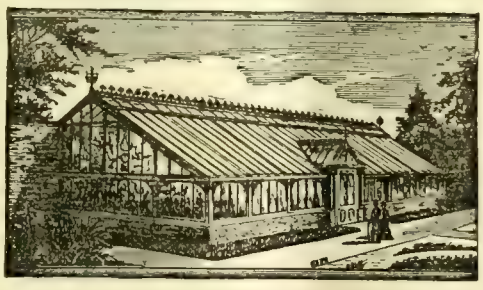
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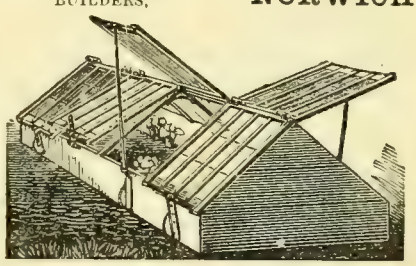


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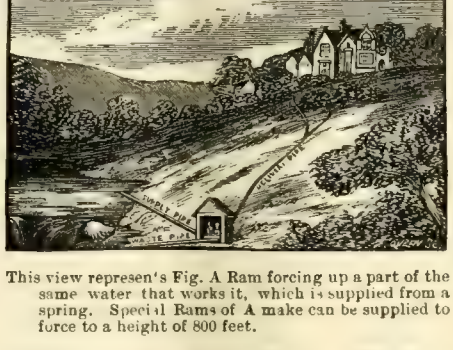
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Fig. A.

This Ram raises a portion of the same water that works it.



This view represents Fig. A Ram forcing up a part of the same water that works it, which is supplied from a spring. Special Rams of A make can be supplied to force to a height of 800 feet.



Fig. B.

This Ram, whilst worked by a stream of impure water, will pump clean water from a well or spring.

TESTIMONIALS FOR JOHN BLAKE'S PATENT SELF-ACTING HYDRAULIC RAMS:

From C. PAGE WOOD, Esq., Wakes Hall, Wakes Colne, Essex, January 11th, 1889.

"Sir,—In reply to your inquiry, the Hydraulic Ram you put down for me in 1884 has cost me only sixpence in repairs (for a new stud my blacksmith made); the second Ram you put down to supply an off-hand farm, has been running three years, and has cost not a penny for repairs; the third and largest Ram put down two months ago, which is for the supply of water to my neighbours, is running satisfactorily.

"All three Rams throw up more water than you guaranteed. From inquiries I have made from friends who have Rams of other makers, I am convinced of the superiority of yours, and my third order is a proof of my good opinion. My abundant water supply is the greatest possible comfort to me.

"Yours faithfully,
"C. PAGE WOOD."

From MATTHIAS SMITH, Esq., Hill Top Hall, Pannal, near Leeds, January 14, 1889.

"Dear Sir,—I have great pleasure in bearing testimony to the marvellous efficiency of the Ram you fixed here in January, 1888. It is worked by spring water of irregular volume, the dry-weather flow being 6 pints per minute, with which quantity you promised to work the Ram, forcing through 330 yards of delivery pipe to an elevation of fully 144 feet, but out of 5¾ pints per minute, 165 gallons per day are sent up; and out of 2 gallons per minute now flowing through the Ram, 540 gallons per day are delivered at the same height.

"Considering the extremely small quantity of driving water, I certainly did not expect so grand a result. With every wish that you may get the reward you deserve,—I am, dear Sir, yours faithfully,

"MATTHIAS SMITH."

From Mr. THOMAS VARLEY, Agent to the Trustees of the late William Rounsell, Esq., Gledstone Estate, West Marton, Skipton, August 11, 1887.

"Dear Sir,—The Patent Hydraulic Ram you fixed five years ago on this estate is still working as well as it did on the day it started. It is driven by spring water carried along the hillside in 950 yards of iron pipe, and forces up an abundant supply to an underground tank on the hill at a distance of two miles from, and at an elevation of 280 feet above the Ram. The water is then gravitated through several pipes and branches, having a total length of about four miles, for the supply of the mansion, gardens, stables, estate workshop, and steam boiler, the village of West Marton, and several farms. There are five fire-plugs inside the mansion, and seven outside; and as the underground reservoir is 70 feet above the mansion, seven jets of water can be thrown over the house in case of fire. As there is still a considerable overflow from the underground reservoir running to waste, I intend to form a second reservoir at a lower level, and utilize the water for other farms. I have much pleasure in being able to report as above."

VILLAGE WATER SUPPLY.

From J. B. McCALLUM, Esq., C.E., Borough and Water Engineer, Blackburn, Nov. 1, 1886. *Guide (Borough of Blackburn) Water Supply.*

"Dear Sir,—Following is the short report I promised to send as to the work performed by the Hydraulic Rams—supplied by you to the Blackburn Corporation—after they had been in operation sufficient time to take proper observations.

"The district of Guide—population about 500—in the Borough of Blackburn, is situated above the highest reservoir of the Blackburn Waterworks, and had no regular water supply until last July, when the Water Committee caused two of your Patent Hydraulic Rams to be put down and worked by water from a reservoir having a varying but maximum head of 34 feet 3 inches on the rams—the waste (clean) water gravitating to a lower adjacent reservoir.

"You contracted to supply rams which would force 8000 gallons per day each through 1295 yards of delivery pipe to a service tank 170 feet above the rams, and I am bound to state that the result has considerably exceeded my expectations, as the rams are capable of pumping and have pumped much more water than you promised. The percentage of efficiency exceeds all I expected, and is, in my opinion, much more than is usually obtained from hydraulic rams.

"From a test I made on September 29, I found that two rams with ½ inch and ⅜ inch strokes respectively, supplied with 194,039 gallons per day, together pumped 26,090 gallons per day to a height of 170 feet, giving 71·43 per cent. of efficiency, and one ram working at ⅜ inch stroke, and with only 16 feet of working fall supplied with 154,587 gallons per day pumped 10,587 gallons per day to the same height, showing 72·75 per cent. of efficiency.

"At a subsequent test on October 11, one ram at ⅜ inch stroke, and having 31 feet 9 inches of working fall supplied with 121,083 gallons per day, pumped 17,583 gallons per day to an elevation of 171½ feet, the efficiency in this case being 79·57 per cent.

"In arriving at these results, the greatest care was taken to positively measure the water, besides having a meter-check on feed and delivery-pipes.

"The work carried out by you at Blackburn is substantial and satisfactory in every way, and if any engineer wishes to make his own observations he is at liberty to come here and do so."

From WM. DICKINSON, Esq., Agent to the Most Honourable the Marquess of Abergavenny, K.G., Eridge Estate Office, Hargate Lodge, Tunbridge Wells, July 3, 1885.

"Sir,—I am instructed by the Marquess of Abergavenny to say that the Patent Hydraulic Ram, with over two miles of pipes, forcing water to a height of 230 feet, which you erected at Eridge Castle about nine months ago, has given his lordship entire satisfaction, and he has every confidence in its continuing to do so.—I am, Sir, yours faithfully, "William Dickinson."

From J. A. RUTHERFORD, Agent to C. F. H. Bolckow, Esq., Estate Office, Marton Hall, Middlesbrough, September 26, 1883.

"Dear Sir,—I am glad to say that the Rams you put down on the Hambleton Estate for Mr. C. F. H. Bolckow are working very well. You undertook, with 16 gallons per minute, to send up 1500 gallons a day, and with enough water to work the Rams at full power, 2000 gallons a day. With a supply of 11½ gallons per minute they are lifting 2200 gallons, and when working full power 3105 gallons per day are sent up to a height of nearly 400 feet. They made a clear start, and have gone well since." (The delivery pipe in the above case is 9000 feet in length.)

JOHN BLAKE, HYDRAULIC RAM WORKS, ACCRINGTON, LANCASHIRE, ENGLAND.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by William Richards, at the Office of Messrs. Bradbury, Agnew, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said William Richards at the Office, 41, Wellington Street, Parish of St. Paul's Covent Garden in the said County.—Saturday, August 3, 1889. Agent for Manchester—John Heywood.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2537.

No. 137.—Vol. VI. {Third Series.} SATURDAY, AUGUST 10, 1889. {Regt. as a Newspaper. WITH SUPPLEMENT.} {PRICE 3d. POST-FREE, 3½d.}

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On view morning of Sale, and Catalogues had.

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First Sale, MONDAY, August 19.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY, August 19, THURSDAY, August 22, MONDAY, August 26, and THURSDAY, August 29, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, especially lotted to suit the Trade and other Large Buyers.

Catalogues will shortly be ready, and may be obtained on application.

Thursday Next. (Sale No. 7964.)
SPECIAL SALE of ORCHIDS in Flower and Bud.

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Wednesday, August 21.
DUTCH BULBS.—FIRST TRADE SALE.

MR. J. C. STEVENS will SELL by AUCTION at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY, August 21, at half-past 12 o'Clock precisely, several hundred lots of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, SNOWDROPS, and other BULBS, from some of the best-known farms in Holland, and specially lotted to suit the Trade and other Large Buyers.

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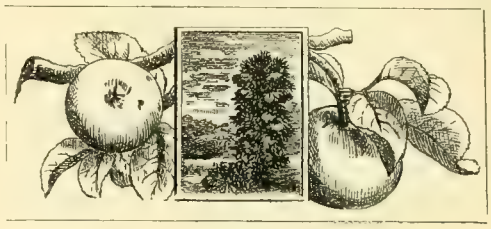
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 10, 1889.

GARDENING IN THE PARKS.

THIS is for the gardener pre-eminently the season for "looking round," to gather hints, and compare notes. It may seem strange to come to London to study gardening, but Kew, Hyde Park, Kensington Gardens, and other places of like kind offer valuable suggestions as to what should be done elsewhere, and especially as to what should not be done. We purpose, from time to time, to make mention of some of the London parks as illustrations which may profitably be studied by the gardener.

Time was when Battersea Park, especially when under the GIBSON management, was the pattern park and garden after which country gentlemen modelled their own establishments, and eventually with the same results, though different in degree, as those which attended the copying of the fashions in bedding-out set at the Crystal Palace and South Kensington. Since those days gardening has taken new departures in several directions, and is more diversified, greatly to the improvement of gardens, and the enhancement of their interest all the year round; but Battersea has stood still, if it has not retrograded, and the beds and the plants are about the same as they were twenty years ago; so that a blindfolded man, if he were led into, say, the subtropical garden, might say, here grows a lot of Cannas, there Castor-oils, there Brugmansias, and so on.

It would be a welcome change for at least a few seasons if the so-called subtropicals, perennial and otherwise, were planted in other places—by the sides of the lakes, on the islands, or even relegated to the solitude of the reserve garden. Their places could be charmingly filled with herbaceous plants, of which there are immense numbers flowering from early spring to late autumn, and the season could be helped out with numerous species and varieties of annual plants, which might be sown in the beds, or raised in other ways and transplanted where and when they were wanted.

It does not seem to be an irrevocable law that

we should always have a few "starers" in a bed of either foliage, or flowering, or mixed plants, and underneath these lanky individuals place a carpet for them to stand upon, or provide them with the wherewithal to clothe their nakedness. It would seem as if a change in method of planting had become desirable, although doubtless from the habit of repeating the thing for many years the present one has become easy to those in charge. The Londoner from amidst his pall of smoke is charmed with patches of bright colour, and instead of the intricate samplers of Alternanthera, Mentha, Sedums, Coleus, Herniaria, and the rest, he might be given Marigolds, Zinnias, dwarf and tall; sheets of Virginian Stock, masses of dwarf and climbing Nasturtiums, beds of East Lothian, Brompton, and Ten-week Stocks, the now varied and beautiful Snapdragons, Delphinium Ajacis, all kinds of Clarkias, Leptosiphon, hedges of Sweet Peas, banks of Mignonette, and stretches of Musk. We are heretical enough to propose to plant the alpine landscape (!), that is, at the entrance to the subtropical part, with Musk, notwithstanding the possibility that Batterseaites, and their neighbours on the opposite shore of the river, might take toll in the shape of purloined tufts to fill window-boxes, &c. An Alp may be perpetrated once in a public garden, but it should not, as it were, aspire (no pun is meant) to the permanent occupier of the site.

The list of plants which a gardener with ideas could employ to give variety, and revive the waning interest in the gardening of this park, is far too lengthy to be inserted here; and let it not be supposed that in our advocacy of these plants they should be so planted and disposed as to repeat in a milder way the errors of the glaring massing of the bedding-out epoch. Not so, but the plants should be combined in tasteful mixtures, with due regard to colour contrasts, or harmonies, to height and suitability to the design of the beds and borders.

It might also lead to some too obtrusive beds being done away with—there are now too many in some parts, and too little reposeful lawn away from the big spaces in the park. In fact, the foreground of the parterres has been too much encroached upon by the beds made from time to time, and any alteration in this direction would sweep away some few needless carpet beds. Moreover, the nearness of one foliage bed to another destroys the effect of contrast, and much of the garden scenery is but that of a jungle of gigantic forms of vegetation. The reverse of this may be observed wherever a fine Seaforthia elegans or other Palm, or a mass of Bamboo stands out on the turf, and is not encroached upon by equally large plants.

Smaller beds with more variety in the plants employed and in colour and form of leaf and flower seem called for. The present beds are many of them too big, the inner plants being smothered, and the effect is that of a mass of foliage which may surprise the observer, but does not please him, and often prevents a view being taken of distant points of interest. Raised beds of regular form of one or two steps might be sparingly employed, also basket-shaped beds, both large and small. Virginian Creeper might take the place of the dark gloomy Ivy as borders to walks in some parts, and in deciduous trees more use made of pyramidal and weeping forms.

A recent visit showed the trees in this Park looking their best, many having made fine long shoots; and Hollies amongst the evergreens had done remarkably well this season. The rains have made everything look their freshest, considering the lateness of the period. Bedding plants proper are full of flower, but beds of carpet-plants and full foliage plants seem wanting in vigour, and, in many instances, it was seen that the former were not well covered. The walks and the turf—and these, after all, are of more value to the Londoner than his flowers—never were better at this season; and cleanliness is visible in every part.

New or Noteworthy Plants.

MASDEVALLIA ELLISIANA×, *n. hyb.*

This is a new hybrid raised by Mr. Seden for Messrs. Veitch, from M. Harryana ♀, and M. ignea ♂, the seed having been sown in 1885. It was exhibited at the fortnightly meeting of the Royal Horticultural Society on June 25 last, and was awarded a First-class Certificate by the Orchid Committee. The name was given in compliment to Lady Howard de Walden, of the Mote Park, Maidstone, a great lover of Orchids, Ellis being the family name. In shape the flowers much resemble M. ignea, the colour light carmine, with darker nerves. The upper sepal is small, broadly triangular, light purple, with three darker nerves; the tails of the lateral sepals are very short; the base of the tube yellow. The petals are white, with faint purple mid-line; the lip white; the column with violet angles. It is a pretty plant, and tolerably intermediate in character between its two parents. *R. A. Rolfe.*

Gladiolus Leichtlini, *Baker n. sp.**

This new species of Gladiolus was gathered by Mr. R. W. Adlam, of Pietermaritzburg, on an excursion to the Transvaal in 1887. For my knowledge of it I am entirely indebted to Herr Max Leichtlin, who has flowered it this summer at Baden Baden, and supplied me with specimens and notes upon its characteristics. It flowers in June and July. In habit and stature it most resembles G. Papilio, but in the colouring of the flower it is nearest G. psittacinus. It is a fine plant, and no doubt will be appreciated by cultivators.

Leafy stem terete, about 2 feet long, produced leaves usually four, ensiform, bright green, moderately firm in texture, a foot long, under an inch broad; flowers six or eight, arranged in a moderately dense secund spike half a foot long; spathe valves lanceolate, erect, 1 to 1½ inches long; perianth bright red; tube arcuate, 1¼ inch long, funnel-shaped in the upper third; three upper segments obovate, obtuse, permanently connivent, as long as the tube, above ½ inch broad; three lower much smaller, deflexed, acute, red at the tip, yellowish below it, grained with small red spots; stamens arcuate, distinctly shorter than the upper segments. *J. G. Baker.*

Lemoine's New Hybrid Gladiolus.

This is the first of a new race of hybrid Gladioli obtained by M. Lemoine, of Nancy, between one of the varieties of G. Gandavensis and the hardy species G. Saundersi. It was sent to me last year as G. nanceianus× by its raiser, for trial, and will be distributed to the public as soon as sufficient stock of it has been obtained. I am happy to be able to report most favourably of this beautiful novelty, which I consider to be a most valuable and desirable acquisition, and quite one of the most beautiful Gladioli I have ever seen. It is a variety of a moderately vigorous habit of growth, with a spike of only medium height. The flowers are of a most beautiful shade of deep rose-colour flaked with carmine, much resembling those of Souchet's beautiful old hybrid of Gandavensis named Achille, but the form of the new-comer is much more perfect, and most beautifully and evenly expanded, looking you straight in the face. This latter fact is all the more surprising, as in one of the parents (Saundersi) the beautiful scarlet flowers, veined with white, have the serious fault and drawback of being so bent in towards the stem that it is impossible to see their beautifully marked interior without raising them with the hand. The centre lower petal of the new hybrid is most distinctly and beautifully marked with a curiously pointed creamy blotch flaked with carmine. It is altogether a most lovely flower. I have also received for trial, from Herr Otto Frœbel, of Zurich, another new hybrid Gladiolus of his raising, which I believe to be the produce of a somewhat similar cross. This seems to be of a more vigorous habit of growth, and will not open its flowers for about ten days, when I hope to have something to say in its favour. *W. E. Gumbleton.*

* Caule tereti bipedali; foliis ensiformibus viridibus; floribus 6—8 in spicam subdensam secundam dispositis; spathæ valvis lanceolatis 1—1½ uncialibus; perianthio splendide rubro, tubo arcuato bracteis longiori, segmentis 3 superioribus obovatis diu conniventibus, inferioribus multo minoribus subacutis fauce luteis minute rubro punctatis; genitalibus perianthio brevioribus. *J. G. Baker.*

Notes from the Paris Exhibition.

The grounds of the Place des Invalides, forming, as they do, a large and attractive portion of the Paris Exhibition, and including the various pavilions and villages of the natives of the French colonies and Protectorates, have been made cool and pleasant by planting shrubs and plants indigenous to the different countries, and they also possess many rows of fine umbrageous trees. Around the Netherlands Indian section are vigorous tobacco plants in blossom, Musas, Capsicums, and Cacti. Palms and Orange trees are in vigour, and here and there are seen shrubs of Pinus Strobus and excelsa, which are not quite appropriate.

From the Botanic Gardens of Hammah and Algeria have been brought good specimens of the Sugar-cane, dwarf Palm, Sabal Havanense, Plantains, and different Bamboos, Phormium tenax, Chamædorea elatior, Philodendron pertusum, Chamærops excelsa and C. elegans, Corypha australis, and Strelitzia augusta. Although Cork trees could not be transplanted, yet fine sections of the trunks are erected, showing the formation of the inner layers of bark.

Tropical Fruits.—Seldom, perhaps, has been collected together so large a variety of tropical fruits as at the Paris Exhibition in the various kiosks and stalls on the Place des Invalides and the Quai D'Orsay. At the Colonial Exhibition in London there was a fair display made, but the northern and southern coasts of the Mediterranean are within a nearer distance than our colonies, and hence Algeria, Tunis, Egypt, Spain, Italy, and other countries have been able to send large and continuous supplies. The quantity of oranges sent from Valencia has been considerable, and they sold readily at from one halfpenny to 2*d.* each, according to size and quality.

Pineapples, bunches of Bananas, sections of Sugar-cane, Water and other Melons, Pomeloes or Shaddocks from Florida, called "Grape Fruits," Apples from Victoria and Tasmania, selling at 1*d.* and 2*d.*, Litchis and Longans, Dates, Figs, Cocoanuts and Brazil Nuts in their capsule (these are plentiful here, although difficult to obtain in that form in England), and various other Nuts, such as Peccan, Hickory, Sapucai, Butter Nuts, Pine Cones, Pistacia, Ground Nuts, and Chufas (Cyperus), Carob-pods, &c., make up a goodly choice for visitors.

In the United States sections there are the following varieties of Oranges shown:—Maltese Blood, Maltese Oval, Paper Rind St. Michael, Washington Navel, Australian Navel, Indian River, Tahiti Seedling, Haiti Late. Dried Apricots, Nectarines, Peaches unpeeled, Plums pitted, Pears evaporated, excellent Raisins, preserved fruits and jams innumerable.

Saffron.—The cultivation and preparation of Saffron in Spain are well exemplified by one or two exhibitors in the Spanish Pavilion on the banks of the Seine, at the Quai D'Orsay. One exhibitor, N. Hermanos, shows samples from Albacete, which is one of the chief centres of production, but the best and most instructive exhibit is that of Damaso Algaraz, Valencia, who has a very complete and instructive stand, com-

mencing at the bottom with corms of the Crocus sativus, in earth; then over this, on a shelf, are a dozen glass globes, six filled with the product of 1888, and six with those of the previous year. They are classified as follows into Aragon Sierra, Rio, Bajo, Mediano, Superior, Selecto.

Four oil paintings represent a field of Saffron and the collection of the flowers, the return of the peasants from the field, the picking the stigmas, the trifid orange-coloured tops of the central organ of the flowers, the remainder being useless, the drying of the Saffron by heat, and, lastly, the general market where the sales are made. The various tools and utensils, sieves, &c., for cultivating and drying the Saffron are shown; also the different forms of packages in which it is shipped to America, Germany, and France.

Various statistical tables exhibit in a graphic manner the rise and fall of prices, and the export and stock of Saffron during a period of nineteen years and a half from October 15, 1869, to April 30, 1889. The trade in Saffron is a very old one in Valencia, and the production is more than double that of France and other countries combined.

The total quantity sold in the period above stated was about 2,250,000 lb., an average of, say, 114,500 lb. The largest sale was in the year 1872-73, 167,317 lb., the smallest sale in the period was 72,350 lb. in 1869-70.

Although used to a small extent in pharmacy and as a dye stuff, its chief employment is as a condiment, and for colouring liqueurs, butter, and cheese.

Australian Seed-vessels.—In the Victoria section of the Exhibition Mr. W. R. Guilfoyle, F.L.S., Director of the Melbourne Botanic Gardens, shows a large and most interesting collection of carpological specimens in glazed cases, numbering about 300 divisions, including the seeds and seed-vessels of the various species of Eucalyptus, Acacia, Araucaria, Casuarina, Banksia, Hakea, Grevillea, Melaleuca, Callistemon, Angophora, and other genera. It is a collection which ought to be secured for Kew or some other botanic museum, as it is difficult to form such another.

Mate.—Very many of the South American republics show specimens of this product, known locally as Yerba Mate, or Paraguayan Tea, the product of the torrified leaves and stalks of different species of Ilex. It is exhibited in packets, and in original serons or bales of green hide. This is the dietetic beverage of about 20,000,000 in South America, and its popularity is shown by the exhibits in the various pavilions of the Argentine Republic, Paraguay, Uruguay, Brazil, Chili, Bolivia, &c.

There appears to be a considerable difference in the quality and estimation of the Mate, according to the locality from which it is derived; whether this arises from the variety of shrub or the mode of preparation does not appear.

That of Paraguay is the most bitter and aromatic of all, and the most esteemed; it yields four times the quantity of infusion that the Mate of the Missiones or of Paranagua does. Hence, although dearer in price, it is more economic.

A coarser kind is made in Brazil from the leaves alone, and these being unpulverised are used in the same way as Chinese tea. It is difficult to get at any reliable returns as to the entire traffic in this commodity, the production of which is carried on in such a desultory and wide manner, and extends over so vast an area of wide country where the holly trees flourish. In the Argentine Republic the consumption is over 35,000,000 pounds against 5,000,000 pounds of coffee. In Paraguay the production of Mate is about 5,000,000 pounds; from Brazil there is an export of 65,000,000 pounds to neighbouring States, while the local consumption is about half as much. This is singular in the great coffee-producing country of the world, which sends into commerce annually more than half the entire production of coffee.

Strong efforts are being made to open a trade with it in Europe, especially in France, where shops advertise and recommend it. Whether this will succeed remains to be seen, looking at the increased production of tea and the enormous increase in its sale in Europe.

Approaching in its chemical composition to coffee and tea, it is asserted that it does not cause wakefulness or prevent sleep. In the rural districts as well as in the smaller towns, this beverage is considered a regular form of diet, and not, like tea, a mere accompaniment of the breakfast table. It is sweetened with sugar until it almost becomes a syrup. It is sold at 2*d.* to 4*d.* per pound, and one pound will produce about twenty quarts of infusion. It is sometimes flavoured with cinnamon, orange-peel, or lemon juice. (*From our Special Correspondent.*)

LIST OF GARDEN ORCHIDS.

(*Continued from p. 79.*)

LÆLIO-CATTLEYA ×.

(12.) L. × EXONIENSIS, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169. *Cattleya exoniensis* ×, Rchb. f., in *Gard. Chron.*, 1867, p. 1144; *Fl. Mag.*, t. 269; *Jenn. Orch.*, t. 1; Warn., *Sel. Orch.*, ser. 2, t. 36. *Lælia exoniensis* ×, Veitch, ex Warn., *Sel. Orch.*, ser. 2, sub. t. 36; Rolfe, in *Gard. Chron.*, 1887, ii., p. 716.—Raised by Mr. Dominy, for Messrs. Veitch. One of the earliest of artificial hybrids, and one whose parentage is, unfortunately, very obscure. Cattleya labiata Mossiæ and Lælia purpurata were at first suggested, then the latter with L. crispa, but neither hypotheses appear to be supported by the characters of the plant. My own opinion, based upon a careful comparison of living specimens, kindly sent by Messrs. Veitch, is, that Cattleya labiata (the old autumn-flowering variety) and Lælia crispa were the parents.

(13). L. × FAUSTA, Rolfe, in *Gard. Chron.*, 1889, i., p. 619. *Cattleya fausta* ×, Rchb. f., in *Gard. Chron.*, 1873, p. 289; also p. 290, fig. 57A; *Fl. Mag.*, n.s., t. 189; var. *radicans*, Rchb. f., in *Gard. Chron.*, 1873, p. 289, also p. 290, fig. 57B. Messrs. Veitch distinguish four colour varieties, *aurea*, *bella*, *crispa*, and *delicata*, *Man. Orch. Pl.*, pt. 2, p. 91.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Cattleya Loddigesii ♀ and Lælio-cattleya × exoniensis, so that it has three parts Cattleya and one part Lælia in its parentage.

(14). L.× FELIX, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169. *Cattleya felix* ×, Rchb. f., in *Gard. Chron.*, 1876, ii., p. 68. *Lælia felix* ×. Veitch, *Man. Orch. Pl.*, pt. 2, p. 96.—A hybrid raised by Mr. Dominy, for Messrs. Veitch. Its parentage is somewhat uncertain, but is supposed to be Lælia crispa ♀ and Cattleya Schilleriana ♂.

(15.) L.× HORNIANA. *Lælia Horniana* ×, Rchb. f., in *Gard. Chron.*, 1888, i., p. 770.—A hybrid raised by Mr. Ferdinand Horn, Orchid grower to Baron Nathaniel von Rothschild, Hohewarte, near Vienna, from Lælia purpurata ♀ and Lælio-cattleya × elegans ♂, so that it has three-fourths L. purpurata in its parentage. I have not seen it.

(16.) L. × MARDELLI, Rolfe, in *Gard. Chron.*, 1889, i., p. 746. *Cattleya Mardelli* ×, Seden, ex Rchb. f. in *Gard. Chron.*, 1879, i., p. 234; *Fl. Mag.*, n.s., t. 437; Warn. & Will., *Orch. Alb.*, t. 287.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Cattleya labiata var. Luddemanniana ♀ and Lælio-cattleya × elegans ♂. The latter is called, in the *Floral Magazine*, n.s., under t. 437, *Cattleya devoniensis*, a name the origin of which I have failed to discover, and which is omitted from its alphabetical position in this list.

(17.) L.× MYLAMIANA, Rolfe in *Journ. Linn. Soc.*, xxiv., p. 169. *Lælia Mylamiana* ×, Rchb. f., in *Gard. Chron.*, 1876, ii., p. 740, 741, fig. 138.—A hybrid raised in the establishment of Messrs. Wm. Rollisson & Sons, of Tooting, from Cattleya granulosa ♀ and Lælia crispa ♂, and named after Mr. Mylam, who appears to have been the raiser of the plant. I have not seen it.

(18.) L. × NOVELTY. *Lælia Novelty*, N. E. Br., in *Gard. Chron.*, 1887, ii., p. 490.—A hybrid raised by the late Dr. Harris, of Lamberhurst, between Lælia pumila ♀ and Lælio-cattleya × elegans; so that it has three-fourths Lælia in its parentage.

(19.) L. × PHILBRICKIANA, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169. *Lælia Philbrickiana*, Rchb. f., in *Gard. Chron.*, 1879, ii., p. 102.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Cattleya Aclandiæ ♀ and Lælio-cattleya × elegans, and therefore with three-fourths Cattleya in its parentage.

(20.) L. × PORPHYRITIS. *Lælia porphyritis*, Rchb. f., in *Gard. Chron.*, 1886, i., p. 73.—A supposed natural hybrid. Professor Reichenbach suggests Lælia pumila as one parent, and adds that "Mr. Day thinks [the other] may have been Cattleya Dormaniana." I can make no suggestion, as the plant is only known to me by the description.

(21.) L. × SCHILLERIANA. *Lælia Schilleriana*, Rchb. f., in Otto and Dietr., *Allg. Gartenz.*, 1855, p. 322; *Bletia Schilleriana*, Rchb. f., in Walp., *Ann. Bot.*, vi., p. 424; *Lælia elegans* var. *Schilleriana*, Veitch, *Man. Orch. Pl.*, pt. 2, p. 67; *Lælia*, sp., *Fl. and Pomol.*, 1859, p. 193, t. 153; *L. Warneri*, Warn., *Sel. Orch.*, ser. 3, t. 1; *L. elegans*, Veitch, *Man. Orch. Pl.*, pt. 2, p. 65, as to fig. Originally appeared in the collection of Consul Schiller, at Hamburgh, having been imported from Rio de Janeiro. It was at first thought to be a genuine species, though now admitted to be a natural hybrid between Cattleya intermedia and Lælia purpurata. In common with the following varieties, it is sometimes placed with Lælia elegans (*i.e.*, Lælio-cattleya × elegans), which, however, has a different parentage, and therefore should be kept distinct.

The following are supposed to have the same parentage, and must therefore be considered varieties of L. × Schilleriana:—

Lælia elegans var. *alba*, Hort., *The Garden*, xvii. (1880), t. 218; Warn. and Will., *Orch. Alb.*, t. 30; Veitch, *Man. Orch. Pl.*, pt. 2, p. 66; *Ill. Hort.*, n.s., t. 526.

L. elegans var. *Stelzneriana*, Veitch, *Man. Orch. Pl.*, pt. 2, p. 67; *L. Stelzneriana*, Rchb. f., in *Hamb. Gartenz.*, xvi. (1860), p. 282, also p. 420; *Flore des Serres*, t. 1494.

L. euspatha, Rchb. f., in *Hamb. Gartenz.*, xvi. (1860), p. 420; Sander's *Reichenbachia*, i., t. 8. *Bletia euspatha*, Rchb. f., in Walp., *Ann. Bot.*, vi., p. 425.—Appeared in the collection of Dr. Caspar, at Berlin, in 1860, and a little later with M. Luddeman, at Paris.

L. irrorata, Rchb. f., in *Hamb. Gartenz.*, xv. (1859), p. 57. *Bletia irrorata*, Rchb. f., in Walp., *Ann. Bot.*, vi., p. 426.

L. irrorata Gaskelliana, Rchb. f., in *Gard. Chron.*, 1887, ii., 520.

L. irrorata Scottiana, Rchb. f., in *Gard. Chron.*, 1883, i., p. 142.

L. Measuresiana, Williams, *Orch. Gr. Manual*, ed. 6, addenda; Warn. and Will., *Orch. Alb.*, t. 207.

(22.) L.× SEDENI. *Lælia Sedeni* ×, Rchb. f., in *Gard. Chron.*, 1877, ii., p. 424.—A hybrid, raised by Mr. Seden for Messrs. Veitch, from Cattleya superba ♀ and Lælio-cattleya × elegans ♂; thus it has three-fourths Cattleya in its parentage.

(23.) L.× TIMORA. *Lælia Timora*, N. E. Br., in *Gard. Chron.*, 1887, ii., p. 428.—A hybrid raised by Mr. Seden for Messrs. Veitch, from Lælia pumila Dayana ♀ and Cattleya labiata Luddemanniana ♂.

(24.) L.× TRESEDERIANA. *Lælia Tresederiana* ×, Rchb. f., in *Gard. Chron.*, 1888, i., p. 136.—A hybrid raised by Mr. Treseder, of the firm of Messrs. Heath & Son, Cheltenham, between Lælia crispa and Cattleya Loddigesii. It is not stated which was the seed-parent.

(25.) L.× TRIONOPHTHALMA, Rolfe, in *Gard. Chron.*, 1889, i., p. 802. *Lælia trionophthalma*, Veitch, *Man. Orch. Pl.*, pt. 2, p. 97. *Cattleya trionophthalma*, Rchb. f., in *Gard. Chron.*, 1833, ii., p. 526.—A hybrid raised by Mr. Seden for Messrs. Veitch from Cattleya superba ♀, and Lælio-cattleya × exoniensis ♂, thus having three-fourths Cattleya in its parentage.

(26.) L.× VEITCHIANA, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169. *Cattleya Veitchiana* ×, Dominy, ex Rchb. f., in *Gard. Chron.*, 1874, i., p. 566 (in note). *Lælia Veitchiana* ×, Rchb. f., in *Gard. Chron.*, 1874, i., p. 566; Id., 1883, ii., pp. 142, 144, with plate; *Fl.*

Mag., n. s., t. 305.—A hybrid raised by Mr. Dominy for Messrs. Veitch from Cattleya labiata (vera) ♀, and Lælia crispa ♂. I now suspect that both this and L.× exoniensis may have arisen from the same cross. When writing the note on the parentage of the latter (cited above), I quite overlooked the parentage of the present one; but now, on comparing the figures of each, and dried specimens of L.× exoniensis (for I have not seen the other), I am firmly convinced that both have the same parentage.

(27.) L. × Victoria. *Lælia Victoria*, Veitch, *Gard. Chron.*, 1888, ii., p. 578; *Garden and Forest*, 1888, p. 495.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Lælia crispa and Lælio-cattleya× Dominiana, thus having three-fourths Lælia in its parentage. I suspect the first-named was the seed-parent.

(28.) L.× zenobia, Rolfe, in *Gard. Chron.*, 1889, i., p. 802. *Cattleya zenobia*×, Rolfe, in *Gard. Chron.*, 1887, ii., p. 552.—A hybrid raised by Mr. Seden, for Messrs. Veitch, from Lælio-cattleya elegans (the var. Turneri) ♀, and Cattleya Loddigesii ♂; thus, it has three-fourths Cattleya in its parentage.

82. C. Sophrocattleya×, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169.—A name proposed to distinguish a hybrid raised between the genera Cattleya and Sophronitis.

(1.) S. × Batemaniana, Rolfe, in *Journ. Linn. Soc.*, xxiv., p. 169; Veitch, *Man. Orch. Pl.*, pt. 2, p. 92, 93, with figs. *Lælia Batemaniana*×, Rchb. f., in *Gard. Chron.*, 1886, ii., p. 263; *Journ. of Hort.*, 1887, ii., p. 54, 55, fig. 6.—A very beautiful hybrid, raised by Mr. Seden for Messrs. Veitch, from Sophronitis grandiflora ♀, and Cattleya intermedia ♂. *R. A. Rolfe, Herbarium, Kew.*

ABUTILON VITIFOLIUM, VAR. ALBA.

Some time since, Mr. Gumbleton favoured us with flowers of this very beautiful Mallow (see fig. 21, p. 157). The campanulate form of the flower is not well shown in the illustration owing to the flower having been drawn in full face in order to show the five-fold arrangement of the stamens, which is interesting as giving a clue to the real nature of the stamens in this plant; originally five, they subdivide into a large number. The shrub is hardy in south Ireland, and the pure white flowers are particularly ornamental.

Nursery Notes.

MESSRS. C. LEE & SON.

Ornamental Trees and Shrubs.—In the suburban district of Isleworth, surrounded by the gardens and orchards which furnish no small quota of the vegetables and fruits consumed by Londoners, are several nurseries owned by the old and well-known firm of Lee & Son, whose headquarters have been at Hammersmith for more than 100 years. To planters in search of deciduous trees for picture effects in gardens and pleasure grounds a visit to that portion of the Isleworth nurseries under the management of Mr. Webb reveals a great number of trees and shrubs with variegated foliage and with greatly varied habits, and which are mostly displayed on the borders of a long broad walk. Nurserymen are prevented, by the exigencies of space, from apportioning to the occupants of their nurseries a due amount of room for fair development, and so we find here many of the best plants are much crowded up with others of lesser moment. Yet the effect of the planting of these borders is remarkable to a degree, even to one accustomed to see all that is striking in gardens.

The following are the names of the plants which produced the effects above noted, beginning with Elms, of which this Nursery has many species and varieties:—Ulmus latifolia nana, dwarf, as indicated by the name, but with very fine large dark green foliage; U. latifolia variegata, one of, if not the best of the silver-leaved Elms, a cheerful, not sickly-looking tree; the grey-leaved Elm, U. cinerea, nice as a standard; U. Rosseesi is an elegant tree, with foliage of green and yellow; U. viminalis pendula has small leaves and a slender habit of growth, the leaves are silvery-white—a distinct-looking subject. There is a handsome spotted variety of the English Elm, U. campestris punctata. Other fine Elms noticed were U. monumentalis, U. Berardi, and the Silver Elm.

In Alders there were Alnus aurea, with deep golden variegation (a street avenue of these would have a fine effect); and A. imperialis, a noble tree with large foliage.

Of Quercus were Q. pedunculata variegata, the young leaves beautifully mottled with white; Q. filicifolia, a finely cut-leaved Oak, slightly variegated. Another Oak whose name was visible had pale yellow foliage; and a telling subject was found in a silver-variegated form of Q pyramidalis. Q. grandidentata latifolia is a handsome green species, not unlike the aspect of Q. pannonica, as is likewise Newmann's Oak, an evergreen pyramidal tree; Q. pannosa has broad leaves with shallow indentations; Q. laurifolia is a fine tree, without variegation, and also the evergreen Q. fulhamensis, of which thrifty examples were noted, and chiefly of the broad-leaved variety. One of the handsomest of pyramidal Oaks is Q. Hartwissiana. It has silvery variegation, and is a tree for a lawn, as a foil to Conifers as regards colour, and to round-headed trees as regards form, as indeed all pyramidal forms are if large of growth.

Tilia americana variegata has leaves mottled and flaked with yellow; T. americana was not observed in the lines, but it is one of the finest Limes to plant, and although dry soil does not injure it, it does much the best near water, the leaves attaining their fullest development in such places. The Golden Catalpa, Acacia inermis variegata, Acer Negundo foliis variegatis, a variegated Sycamore, Populus variegata, a variegated Whitethorn, Beeches with purple and red leaves, two forms of Castanea vesca, one with white, the other with yellow variegated foliage; Cerasus Padus elegans, yellow mottled foliage; and Betula purpurea, were some of the other variegated-leaved trees noted.

Of green-leaved trees of various species which lent interest to the collection may be named Acer villosum, fine long leaves; Castanea vesca laciniata, another fine-leaved tree; Pyrus Sorbus vestita, Æsculus heterophylla dissecta; the Eagle's-claw Maple, Acer laciniatum; Robinia complexa, resembling the better known R. hispida, but of lighter-coloured flowers, which are in longer racemes than that species; Salix rosmarinifolia, a plant that makes a round-headed half-tree, in habit resembling Acacia inermis, and like that plant, bearing cutting-in without injury; Malus Toringa pendula, the smallest fruited of all Crabs; a Weeping Cherry, with rose-coloured blossoms, a rare variety, and an excellent weeper; Acacia pendula, a good substitute for Sophora pendula, and a quicker grower, if somewhat less quaint; a Weeping Walnut, of very decided habit in that way; Robinia Bessoniana, one of the finest of the false Acacia; another equally good is R. angustifolia elegans: it is a very pretty half-tree without spines, and may be cut-in like Acacia inermis, so as to form the mop-headed plants sometimes admired; Ginkgo biloba was another fine subject well done here.

In variegated and green-leaved shrubs mention must not be omitted of Mr. Webb's Cornus Mas elegantissima aurea, a beautiful Bird-Cherry with rose, yellow and green on the leaves. Other pretty-leaved shrubs were a Chinese Privet, with yellow leaves, and a fearful name; Prunus Pissardi, a deep red-leaved plant, better in effect than the purple Hazel, and constant; a cut-leaved Elder; Rhus Osbeckii, a plant with large leaves; Caragana spinosa; Hibiscus syriacus variegatus, silvery leaves, which flowers well in the south.

The neighbouring nursery is filled with numbers of Conifers and miniature plants grown for filling window-boxes and the like purposes. Many of the plants have variegated foliage—these looking generally much brighter throughout the year than green leaves, at any rate in towns.

Conifers with variegation, except Retinosporas, it is lamented do not sell now; perhaps owing to the want of constancy attributed to them, and it must be said their sometimes sickly appearance, have set purchasers against them, and it looks as if, in time, the commoner window-box fillers will have the nursery to themselves. There is money in the one and not in the other.

Clematises like rubella, the finest of the claret-coloured ones, and C. Jackmanni superba, the five-petalled improved form of Jackman's Clematis, are much grown, because everyone buys them for their long-enduring blossoms and extended flowering period and lovely colours.

Ivies, both tree and climbing, are well done by Mr. Mardin, the foreman here, and these form one of the specialties for which this nursery is celebrated. Euonymus japonica, in all its forms, is grown in immense quantities; also Aucuba, male and female; Privets, with variegated leaves; Phillyrea laurifolia, a fine town shrub, unhurt by fog or smoke; Olearia Haastii, Escallonia macrantha, Osmanthus ilicifolius, Elæagnus pungens, Thujopsis dolabrata. These form the bulk of the small stuff which is most in demand, and to supply which thousands upon thousands are raised annually.

A small nursery near the high road contains a good lot of pot and planting Vines, now making short-jointed firm canes. Here are also grown a general collection of greenhouse plants, of which Statice floribunda, a certain bloomer and better than S. profusa, and Acacia Drummondi, Heaths, and Epacrises form the bulk.

REPORTS OF THE POTATO CROP UP TO JULY 20.

SCOTLAND.

Aberdeenshire.—Owing to the cold wet spring, Potatos were late in being planted, but came up well, and are now vigorous and healthy; early sorts, which have been fit for use about two weeks earlier than usual, are a good crop, and excellent quality. *John Forrest, The Gardens, Haddo House, Aberdeen.*

—— A good average crop, but not so early as one might have expected, from the warm and dry summer we have had. As yet there is no appearance of disease. *R. Farquhar, Fyvie Castle Gardens, Fyvie.*

—— Potatos this season are of excellent quality and size, and are at least a month earlier than last season. *Francis Duncan, Dunecht House, Aberdeen.*

Ayr.—Potatos look well, and so far I have not seen any disease. Early sorts are good in quality, the recent dry weather having kept them firm. *W. Priest, Eglinton Gardens, Irvine.*

Banff.—The Potato crop I have never seen in a more healthy state. The weather has been all that could be desired for them; plenty of heat and an absence of spring frosts gave them every advantage. We were digging from the open ground on a south border on June 4, which is quite a month earlier than usual, the variety being Sharpe's Victor. *J. F. Smith, Cullen Gardens, Cullen.*

—— Potatos are looking healthy and strong everywhere both in gardens and fields, and have stood through the two months of dry weather seemingly without injury, early sorts being a good crop and fine in quality. *John Webster, Gordon Castle Gardens, Fochabers.*

Dumfries.—Potatos are looking well. No sign of disease as yet. Kidneys have been a very heavy crop and are of fine quality. Beauty of Hebron, Snowflake, Fortyfold, and Snowdrop, are all looking well and give every promise of fine crops. *A. Henderson, Jardine Hall Gardens, Lockerbie.*

East Lothian.—Potatos are lifting well in the garden and have no symptom of disease. The best early kidney Potato I have is one called Albert Kidney, raised by an amateur in Fife. I have grown it now for several years and have proved it. All the second earlies are looking healthy and promising.

Field Potatos never looked better. The recent much needed rain has been very beneficial to them, and if the disease keep away they promise to be an abundant crop. *L. Dow, The Gardens, Newbyth, Prestonkirk.*

—— There are both in garden and field exceptionally fine crops. Those lifted are of the best quality, though owing to intense drought and heat throughout the month of June, the earlies are not a heavy crop. A couple of inches of rain in the beginning of July have made the later varieties all right. *R. P. Brotherston, Tyninghame, Prestonkirk.*



Fig. 21.—Abutilon vitifolium, var. alba,—flowers snow white. (see p. 156.)

Fife.—The fields of Potatos in this quarter look well, and have no appearance of disease. Early Potatos are of good quality, and yield a fair average crop; the recent rains will improve the late sorts very much. *Robert Gossip, Crawford Priory, Cupar.*

Midlothian.—So far, the season has been a specially favourable one for the Potato, and on the highly cultivated land in this district the plants are strong and healthy, and promise an abundant crop. It is too early for the appearance of any sign of the disease, but its attack has been slight for some years back, and, under favourable circumstances, it seems to be losing a good deal of its virulence. Early Potatos were small, hard, and waxy, till the rain came; now they are excellent in all points. The best on a light, free, warm, highly cultivated soil, are Veitch's Ashleaf, kidney, and Sutton's Early Regent, round. *Malcolm Dunn, Dalkeith Gardens, Dalkeith.*

Morayshire.—Early Potatos looked very promising in the early part of the season, but owing to the dry weather during June they are small and not numerous, but the quality is good. Late Potatos have the appearance of a good return. *D. Cunningham, Darnaway Castle Gardens, Forres.*

Nairn.—Potatos in field and garden look healthy, but not so vigorous as usual. The tubers are small, but the rain we have lately had is likely to swell them. *James Maitland, Cawdor Castle, Nairn.*

Perth.—Early sorts in gardens are yielding a very heavy crop, and later sorts promise well. Field sorts are looking equally satisfactory. Where late planted on coarse clay soil they look very stunted owing to drought, but the late rains will help them much. *George Goodfellow, The Gardens, Kinfauns Castle, Perth.*

ENGLAND.—NORTHERN COUNTIES.

Northumberland.—Owing to the excessively dry and hot June the tubers are small, but of excellent quality, as there is no disease as yet. Since the rain set in, the late varieties, such as Champions and Magnums, are looking remarkably well. *David Inglis, Howick Hall, Lesbury.*

Westmoreland.—Early Potatos on light lands have suffered from the drought. Late crops are looking remarkably well, rain having fallen plentifully. *W. A. Miller, Underley, Kirkby Lonsdale.*

Yorkshire.—Potatos look well, but are much in need of rain. If we don't soon have rain the tubers will be small. We find a few odd tubers diseased, but free from scab. *Thomas Jones, Ribston Gardens, Wetherby.*

—— Early Potatos generally are a bad crop in this neighbourhood, owing to drought. Late crops promise to be better, especially since we have had rains. A good rain is much wanted for all green crops. *William Culverwell, Thorpe Perrow Gardens, Bedale.*

Lancashire.—The early Potatos are a very fine crop in this district. Late varieties will not be quite so good, I am afraid, as they have suffered very much for want of rain all last month, but are looking better since the rain has come. *J. Hathaway, Lathom Gardens, Ormskirk.*

EASTERN COUNTIES.

Lincoln.—The Potato crops are fairly promising; early varieties are being lifted, and are a good crop, and free of disease, but rather smaller than usual, on account of the dry weather. Late and field crops are also promising well, the recent rains doing much good. *David Lumsden, Bloxholm.*

—— The early Potato crops are very small in this district, owing to the dry, hot weather. Indeed, there has been no rain for five weeks. We are now digging Myatt's Ashleaf, which is a favourite about here, and they are remarkably clean; no appearance of disease as yet. The late crops are looking well, and the rain of July 13 has had good results. *J. Rowlands, Bardney Manor.*

Norfolk.—Potatos are looking remarkably well, and are turning up well, with no signs of disease at present; but some 20 miles from here by the seacoast the disease is very bad. *H. Batchelor, The Gardens, Catton Park, Norwich.*

Suffolk.—Owing to a spell of dry weather extending from 11th of June to the 8th July, early Potatoes in this district are of small size, but free from disease. The haulm of later crops also suffered from the drought, but since rain has fallen the haulm has been invigorated and looks well. In other less favourable positions the presence of disease is only too plainly visible. *John Wallis, Orwell Park, near Ipswich.*

—— Generally good, with extraordinary length and strength of haulm. Early varieties are a fine yield, of good quality. No disease. Mid season varieties very promising, no disease. Early sorts are rather later than usual in tubering. *D. T. Fish, Hardwick, Bury St. Edmunds.*

—— Late crops look as well as can be wished, and the yield must, I think, be large, as rain has come just in time to prevent any check, and to assist in swelling the tubers. Early sorts have not been good, as the weather was too hot and dry during June. *J. Sheppard, Woolverstone Park, Ipswich.*

Essex.—Early Potatos have been very good, although somewhat small—the tubers are very sound. Disease had not come under my notice until July 19, when we examined several sorts, and found the one most affected to be Beauty of Hebron. This is somewhat to be deplored, as this variety is grown more by the cottagers in this district than any other variety for early use. We depend on four sorts, namely, Veitch's Ashleaf, Early Regent, Beauty of Hebron, and Magnum Bonum. The first and last named invariably prove satisfactory. Late Potatos look well, but it is too early to say much about them yet on the Essex clay. *Arthur Ocock, Havering Park, Romford.*

—— The early Potatos were rather late, and the tubers though very numerous are small. The late varieties drooped considerably during the hot, dry

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weather. Thunder showers have revived them, and we may hope they have not also brought disease. The leaves look as if they were diseased, and a few tubers have white spots, which are said to be first signs of disease. *Jas. Douglas, Great Gearies, Ilford.*

—— Potato crops generally are very healthy and promising, excepting upon low-lying lands. The crop is also somewhat early, and Kidneys, Beauty of Hebron, White Elephant, &c., already show signs of ripening. Digging was in full progress hereabont on July 5. Early Kidneys were badly smitten by disease, and signs of disease already exist upon later crops. The fine weather, with recent rains, is likely to result in heavy yields of good quality, unless excessive rains occur during the end of July and in August. *William Earley, Double House, Ilford.*

—— These look remarkably well in this neighbourhood at present, but I am afraid that the recent heavy rains will bring about disease. The varieties doing best here are Veitch's Improved Ashleaf, Gloucester Kidney, Early Border, Sutton's Early Regent, Lady Truscott, Schoolmaster, Covent Garden Perfection, and Magnum Bonum. *James Vert, Audley End, Saffron Walden.*

MIDLAND COUNTIES.

Leicestershire.—Potatos look very well now, but are not carrying so much top as usual, and are rather thin in the stalk. Ashleaf is yielding a clean crop, with no signs of disease yet. *G. C. Maynard, Cole Orton, Ashby-de-la-Zouch.*

—— The early kinds, although a little checked by drought which followed the deluge in May, have produced good crops of sound tubers. Some very opportune showers have arrived in time to benefit the late crops of Potatos, which at present are growing vigorously, and are healthy. *W. Ingram, Belvoir, Grantham.*

Warwickshire. — Now, thanks to immigrant farmers hailing from northern counties and countries, Warwickshire has become, more especially on the lighter lands, quite a Potato-growing county, and this in such quantities as to dangerously threaten their market value. But Scotchmen coming here will soon learn that Englishmen in the consumption of Potatos and oatmeal are not such "gourmands" as are the Scotch and Irish. The crop in this neighbourhood, so far as I have observed, is very promising, and this both in the allotment garden and in fields. The favourite variety is still the Magnum. Only in one instance have I heard of the presence of disease, and this only on a highly manured piece of an allotment situate low down on the banks of a stream. The rains which have lately fallen, together with the cooler atmosphere which has prevailed, appear to have fairly set up the Potato, and it bids fair now to go through the season well. *Wm. Miller, Combe Abbey Gardens, near Coventry.*

—— Early and second earlies have yielded a heavy crop of clean tubers. For early we grow Veitch's Royal Ashleaf, and find nothing to equal it. Late crops are generally looking well. *J. Bowler, Caldecot Gardens, Nuneaton, Warwick.*

Northamptonshire. — Potatos are good on the Fens. It is too dry for a big crop on the heavy land. *J. House, Fengate Nurseries, Peterborough.*

—— Early crops are yielding well and very free from disease. On light soils they turn out rather small, but are very good. All main crops in this neighbourhood look very promising. *H. Turner, Fineshade Abbey, Stamford.*

Bedfordshire.—The crops are looking well at present, but disease is making its appearance. A dry time is now much required to ripen the tubers. *Geo. Ford, Wrest Park, Amptliill, Beds.*

—— Should we be favoured with good weather from now there will seldom have been such a crop of Potatos in this district. The tops are robust and of good colour. The early varieties are of good size and excellent in quality. Up to the present I have perceived no symptoms of disease. I have used less straw manure this year, and substituted blood manure. The results, so far, are in favour of the latter. *W. M. Baillie, Luton Hoo Park, Luton.*

—— Potatos up to last week never looked more promising, but disease is now showing itself generally in the foliage. *A. McKay, Woburn.*

Oxford.—The Potato crops, both garden and field, are excellent, and no disease has been seen in this immediate neighbourhood. The early crops are yielding well, and the quality is very good. The later crops are most promising. *George Stanton, Park Place, Henley-on-Thames.*

Bucks.—I fear the past month of dry weather will affect the yield of these where they are planted in dry places. Otherwise they in general look remarkably well, with no appearance of disease at present. Sunrise is one in high esteem for forcing purposes and for early work out-of-doors, it is an abundant cropper, and of good habit. *Geo. T. Miles, Wycombe Abbey Gardens.*

—— Remarkably healthy and free from disease at present. We find Snowdrop still a good variety for second early. Clark's Maincrop is one of the best grown here. We always ridge our ground for this crop early in the autumn and plant between the ridges. *J. Smith, Mentmore.*

—— Potatos, although rather under average size, are very good, and no disease has yet been found in the tubers. In the early part of this week the fatal spot made its appearance in a few places on the tops of the Early Regent. Veitch's Ashleaf and Beauty of Hebron are yielding very good crops. Later varieties look well, but want rain very badly, otherwise the produce must be small. *C. Herrin, Dropmore, Maidenhead.*

Hertford.—We grow a great many varieties, all of which look remarkably well, very strong in the haulm, and promising an abundant crop if we do not get an excess of rain, as I am afraid that with the luxuriant growth disease will make its appearance. The early varieties lifted are of good size and of excellent quality. I have tried Sharpe's Victor this year, and it has proved one of the best, eating and yield. *James C. Mundell, Moor Park Gardens, Rickmansworth.*

—— The early liftings of Ashleaf were very small but good. Second earlies are a much better crop—fine sample and good quality. Late varieties, especially in the fields, promise well. Disease is reported in a few places, and we have a large breadth of Early Puritan, the haulm of which was destroyed by the disease during the very hot and dry weather of June 28 to July 5, but so far we have found no diseased tubers. *J. Kipling, Knebworth, Stevenage.*

WESTERN COUNTIES.

Gloucester.—I have not known such a good Potato season for some years. Not a single sort was damaged by frosts in the spring. Rain just came at the proper time to finish them off, and at present there are no signs of disease. *Arthur Chapman, Weston Birt, Tetbury.*

Monmouth.—The quality of early varieties of the Ashleaf type is good, the tubers being numerous, although rather deficient in size. The heavy rain in May (after early Potatos were earthed) baked the soil and excluded air, and this, followed by drought in June, was unfavourable to the development of the tubers. Late crops look well, and the haulm since July 9 and 10, when we had 0·56 and 0·44 of rain respectively, has made rapid progress. There is no appearance of disease. *Thomas Coomber, The Hendre Gardens, Monmouth.*

Hereford.—Potatos never looked better than they do at the present time, the dry and fairly hot June, after the heavy rains, having just suited the haulm, whilst the weather was all that could be desired for working the ground and destroying weeds. Early varieties are producing heavy crops of clean fine tubers of excellent quality and quite free from disease. Late varieties look equally well, but this change to unsettled showery weather fills with dread those who know how rapidly disease spreads when the atmosphere is charged with electricity. *W. Coleman, Eastnor Castle, Ledbury.*

—— A good sound healthy crop of early Potatos, but the tubers are small; late ones will be much benefited by the rain that has fallen during the past fortnight, and will, I think, eventually turn out well, provided they are free from disease, which, as far as I have been able to observe, is the case at present. *Richard Thomas, The Gardens, Downton Castle, Ludlow.*

Worcestershire. — The Potato crops show no trace of disease, and the timely rains will increase the bulk, as the drought was already distressing the early kinds. We think very highly of Chancellor as a variety for field culture, being hardy and of a robust constitution, and a prolific cropper. *Wm. Crump, Madresfield Court, Malvern.*

—— The early varieties, although rather small, are very good on the table, notably Early Puritan, which I consider one of the best. Now that we have had rain, there is every prospect of the second earlies producing a full yield, the haulm being particularly strong. Late varieties all look well, and should disease not make its appearance, the crop will be a heavy one. *Walter Child, Croome Court, Severn Stoke, Worcester.*

Salop.—The earlies are sound and good eating, but remarkably small, which is attributable to our dry weather (not a spot of rain fell here from June 9 to July 9). Late kinds are looking very promising. Magnum Bonum still holds sway here, though Imperator is gaining ground. *A. S. Kemp, Haughton Hall, Shifnal.*

—— Early Potatos in this district are very small, the quality is all that can be desired, and up to the present time we are quite free from disease. Owing to the wet spring late varieties are quite a month later than usual, but are looking remarkably well. *Richard Milner, Sundorne Castle Gardens, Shrewsbury.*

Stafford.—Early Potatos are very good indeed, being very clean and of good quality, and excellent crop, and free from disease. Late varieties look remarkably well. I don't think I ever saw them looking better; with a fine autumn crops should be very heavy and good. *J. Wallis, Keele Gardens, Newcastle.*

Cheshire.—Potatos are looking well in this district; the recent heavy rains, coming after the long spell of dry hot weather, have put fresh vigour into the late varieties, but they came too late to be of service to the earlier ones. I regret to say that the disease is making its appearance. *John V. Smith, Arley Hall Gardens, Northwich.*

SOUTHERN COUNTIES.

Middlesex.—Potatos look most promising, especially the late crops, of which it is too early to form an accurate opinion as to their quality. The early varieties have been very good. We have had a fine crop of Veitch's Ashleaf, and the quality has been excellent. Myatt's promise to be equally as good, and so far no disease has appeared, the ground having been in a dry state till July 15, when heavy rains saturated the ground. Field Potatos look most promising. *G. Wythes, Syon Gardens, Brentford.*

—— The Potatos look well, and no disease has been seen here yet; the early ones are a heavy crop and sound. *William Bates, Poulett Lodge, Twickenham.*

—— Although Potatos started late, the ground in the spring being so wet and cold, yet the subsequent heat did wonders in forcing the plants into quick growth and early tubering. Hebrons and Roses, the chief early kinds of the district, are now being lifted rapidly, the price ranging from 3*s.* 6*d.* to 4*s.* per bushel; but that will soon be down lower. All later breadths look wonderfully well, and we shall have a grand crop should no disease interpose. The broken weather, accompanied with thunderstorms, creates uneasiness; but up to date no disease is manifest. *A. Dean, Bedfont.*

Surrey.—The Potato crop in this district promises to be one of the best we have ever had. The early kidney varieties have turned out plentifully, of good size, clean, and of excellent quality; all late varieties give great promise. No trace of disease at present. *A. Evans, Lythe Hill, Haslemere.*

—— Early kidney varieties are a very fine crop

and splendid quality. If rain does not come soon the crop of midseason and late varieties will be very short; not the slightest sign of disease yet. *J. Burnett, The Deepdene Gardens, Dorking.*

—— Up to the present time no disease has appeared here, the early sorts are very good, in the early part of the month they were showing slightly the effect of the dry weather, but since the 7th July. the frequent showers have been of immense value, especially to the later sorts, which are looking well. *Jas. Gold, High Ashurst, Dorking.*

Kent.—Early Potatos are turning out excellently. Main crop and later sorts also look well. There is every prospect of a fine crop should blight keep away, but I am sorry to say there are slight specks of it since the rain came. *Wm. Craik, The Gardens, Hothfield Place, Ashford, Kent.*

—— The Potato crop is looking well at the present date (July 15), on well-cultivated ground, but showing signs of distress from drought on shallow or insufficiently-manured plots. There are some signs of the disease at many places in this locality. Early kinds have turned out well and are of good flavour. Crop likely, with fair weather, to be excellent. *G. A. Don, Bedgebury Park, Hawkhurst.*

—— Potatos are looking remarkably well. The haulm has grown with unusual vigour, and as yet there is no sign of disease, but fears are entertained if the showery weather should continue. Should it prove more favourable, we may expect a bountiful yield. *C. Sutton, Chevening Gardens, Sevenoaks.*

Sussex.—The Potato crops as yet are showing no signs of diease, and those already lifted are good, and of excellent quality. *Alex. Reid, Possingworth, Cross-in-Hand.*

—— Every appearance of the Potato crop at present being a good one, a little disease showing in the early varieties, but the later ones are quite free from it. *F. Rutland, Goodwood, Chichester.*

—— We grow an average selection. Our crops this year are excellent in quantity and quality. This applies to kidneys and rounds alike. Early Puritan is a grand even cropper. M. P. does very well with us, but for the last three years it and Midsummer Kidney were the first to go diseased. I am glad to say we have no sign of disease yet. *Henry R. Holmes, Ashburnham Gardens, Battle.*

Hants.—Never better. On deeply cultivated soil the tubers are of good size and the quality of all first-rate. There are no signs of disease. *W. Wildsmith, Heckfield Gardens, Winchfield.*

—— Potatos generally look well. Late varieties should yield good crops. Many White Elephants are grown about here. Sutton's Seedling is the best quality variety now in use. Midsummer Kidney has been also good. *E. Molyneux, Swanmore Park Gardens, Bishop's Waltham.*

—— All the early kinds are wonderfully good, both in size and quality, and quite free from disease. I never remember seeing them look better than they do this season. Late kinds are looking well. *Wm. Smythe, The Gardens, Basing Park, Alton.*

Berks.—Potato crops are looking well. We have had no disease at all up to this date (July 18). Although we want rain, appearances are good. *T. Jones, Royal Gardens, Windsor.*

—— Potatos look well and promise good yield, but disease has made its appearance in a few places in this district. We have had heavy storms of late. Amongst our best earlies are Ashleaf, Myatt's ditto, Henderson's Prolific, the latter a good sort. Mid-season: Beauty of Hebron, Snowflake. Late sorts: M.P., Welford Park Kidney, and Magnum Bonum. *J. H. Ross, Lockinge Gardens, Wantage.*

—— Potatos are exceptionally good this season. Crop heavy and quality fine. The late heavy rains, however, have caused the disease to set in with great rapidity, especially among the early sorts, the frequent bursts of sunshine and alternate rains being most favourable to its rapid development. *Wm. Pope, The Gardens, Highclere Castle, Newbury.*

Wilts.—Early Potatos are good and plentiful, and the tubers large. Mid-season and late crops look very well at present, although the haulms in some gardens are somewhat suspicious looking. It is to be feared that disease will follow in the train of the recent heavy rain storms. *H. W. Ward, Longford Castle Gardens, Salisbury.*

—— The Potato crop with us is excellent, and I believe the same remark applies to the district in general. Some complaints have already been made of the disease, which is noticeable in a few gardens, but speaking generally, at the present time the crop is first rate. *C. Warden, Clarendon, Wilts.*

SOUTH-WESTERN COUNTIES.

Somerset.—Potatos threw up strongly and evenly, and no frosts injured the haulm. From the first they have done well, and the Ashleafs especially are yielding capital crops of the best table quality. A little disease was seen in the neighbourhood late in June, but there is none among the Potatos growing in these gardens. All the mid-season and late varieties promise well, the haulm being extra strong. The rains came just in time. *W. Iggulden, Marston House Gardens, Frome.*

Devonshire.—Early Potatos are wonderfully fine, and good in quality; the seconds and late kinds are looking well all round, and no sign of disease up to this time (July 17). This season is the finest I have seen in South Devon; all garden crops are very satisfactory. *Geo. Baker, Membland, Plymouth.*

Dorset.—Potatos give excellent promise of both quantity and quality, and, so far, I have not seen or heard of any disease. *James Enstone, Wear, near Exeter.*

Cornwall.—The Potato crop here is very much affected with the disease in the haulm, but the tubers as yet are unaffected. The yield is good. *James Murton, Pencalenick, Truro.*

—— Early Potatos have been plentiful and good, being uninjured by spring frost; the disease was noticed in a damp valley as early as June 6, but the month's fine weather which followed kept it in check until July 16, now the haulm is dying away, and the tubers are affected. Late crops are looking well at present, but we fear the disease will soon be seen in the fields. *Charles Lee, Boconnoc, Lostwithiel.*

WALES.

Denbigh.—Excellent crops of all sorts; healthy and of good flavour. There are no signs of disease up to the present time. *P. Middleton, Wynnstay Gardens, Ruabon.*

Pembroke.—The early varieties gave a very light crop, and the tubers were small; second earlies are also light, and rather small, but of excellent quality. Late crops are looking fairly well. We had a cold, wet spring, succeeded by a drought. Only half an inch of rain in June. There is no disease yet. *Geo. Griffin, Slebeck Park, Haverfordwest.*

IRELAND.

Down.—Early Potatos have turned out a good average crop. We were very late in planting late Potatos, owing to the wet spring, but they are now looking well and promising, with no disease. *Jas. Taylor, Mountstewart, Newtonards.*

Dublin.—Potatos are a promising crop. Early varieties have done well in this neighbourhood, and have no sign of disease. Late varieties are likely to be a good crop, now that we have got the rains. *G. Smith, Viceregal Gardens, Dublin.*

—— So far only good accounts are current; the crop promises to be a large one, and the quality up to or even above the average. Early kinds grown on the sandy flats near Rush and Lusk, and near Balbriggan, were a good crop. The main crop kinds, such as Kemps, Flounders, Champions, &c., look strong and healthy, and promise a large yield; up to July 15 there is no sign or news of the disease. *F. W. Burbidge, Trinity College Gardens, Dublin.*

CHANNEL ISLANDS.

Jersey.—The crops of Potatos this season have been a fair average, and the earliest crops realised good prices; but in the middle of the season the markets seemed to be glutted, as the prices fell suddenly, and those since sold have not covered the cost of culture. *Chas. B. Saunders, St. Saviour's.*

Guernsey.—The early Potato crop has been very good, but in later sorts disease is now showing freely—it came on immediately after the recent heavy rains. *C. Smith & Son, Caledonia Nursery.*

Scilly Isles.—The early crop of Mayatt's Ashleaf Potatos was very good, and growers have reason to be satisfied with returns this season—they came out free from disease. Late crops look promising, but disease has begun to show itself since the rains in the early part of the month. *G. D. Vallance, Tresco Abbey Gardens.*

The Herbaceous Border.

CEPHALARIA TATARICA.

For planting out in the border with other large herbaceous plants this is a desirable plant of easy culture. The foliage is bold if inclined to be coarse, which, however, is more than compensated for by the singular-looking pale yellow flower-heads. It is a plant which may be raised from seed without much trouble, and should be grown in rich soil for the first year, so as to get it to develop strong root-stocks.

Scrophularia nodosa variegata.

This plant forms a very pretty contrast in the herbaceous borders to other plants with bright flowers and green foliage. It is merely a variegated form of the Figwort, and possesses all the vigour of the wild type. The foliage has very little green colour in it, and towards the autumn the whole plant becomes pink-tinted. It will grow well in any soil, but requires a rather damp position, where it will form large specimens. It is best increased by offsets and cuttings, the latter rooting freely in a cold frame. In choosing these, only well-coloured shoots should be taken. *J. W. Odell, Stanmore.*

Harpalium rigidum.

Among hardy border plants, this is certainly one of the best and most desirable, as not only does it make a very fine show while flowering, but it is of great value for cutting from.

In good soils, plants of it grow to about 6 feet high and branch freely, the flowers produced by the middle buds are large, measuring from 3 to 4 inches across, the petals being of a deep rich yellow, and loosely placed, which gives the flowers a light and graceful appearance. In spring, when the plants begin to grow, they send up numerous suckers or side shoots around the main crown; and, therefore, this Harpalium admits of ready increase, as any of these suckers may be taken up with roots, and if replanted become quickly established.

Like most herbaceous plants of a strong-growing habit, the Harpalium rigidum needs great depth of soil, and therefore before planting, the ground should be broken up and prepared by giving a dressing of manure. *J. S.*

COLOUR IN PLANTS.

(*Continued from p.* 126).

(2) Oxidisation.

This was early credited as a cause of changes in the colours of certain flowers, as of those which vary from hour to hour. Thus, Dr. Lindley, in speaking of a Phlox described by a correspondent in the *Gardeners' Chronicle* (1842, p. 555) as being light blue at 5 A.M., became pink by 10 A.M., like the "changeable Hibiscus," which is white in the morning, pink at noon, and bright red at sundown; he attributed the blue to the excess of oxygen, which had presumably accumulated as an acid at night, and as soon as the oxygen began to be exhaled by day, that the colour changed to red. The reader will perceive that if, as Dr. Lindley supposed, the blue be

due to the increase of acid matters (from the excess of oxygen), then the result does not tally with later views. But, as we shall see, the blue might be due to excess of oxygen without its being an element of an acid.

The various tints of autumnal foliage are now generally supposed to be due to oxidisation, and as some of the colouring matters of flowers are the same as those formed in leaves, we can presumably assign oxidisation to the cause in the latter, though "more or less modified by light and by other varying conditions not yet understood" (Sorby). If, however, it be thought that reds in autumn tints be referable to oxidisation, Mr. Sorby himself found the effect of oxygen to be exactly the reverse, for he discovered "that in the case of very many kinds of colouring matters a slight amount of oxidisation lowers the absorption towards the red end of the spectrum quite as uniformly as it is lowered by alkalies." This means that oxidization at least sometimes tends to produce "blues." Hence, as observed above in the case of Phlox, Dr. Lindley might have been right in attributing the blue at dawn to oxygen, but wrong in supposing it to be acid.

LIGHT.

As colours are not due to direct assimilation by the protoplasm of the petals, but to secondary products derived through leaf-action and from the materials stored up through the agency of the foliage, it is not *à priori* surprising to find that flowers allowed to expand in total darkness while the foliage is exposed to sunlight are found to produce their colours. Nevertheless, differences, though slight in degree, in the brightness of the colours are sometimes observable.* If Sachs' latest discovery prove generally true, that the invisible fluorescent rays beyond the violet end of the spectrum are specially concerned in enabling a plant to provide the special material (whatever it may prove to be) for the making of flowers, we can easily imagine that it is not merely the amount, but the quality of the light, which is an important factor. It has been found by Flahault, Bonnier, Mr. P. Barr, and others, that the same species growing at different altitudes on mountains, as well as in low and high latitudes, exhibit great differences in the depth of colouring, while florists' flowers are often less bright in cloudy and inclement weather, or through a more cloudy season. This may be the result, not of the deficiency of light upon the flowers, but upon the foliage, which thus is incapable of developing properly those substances required for effecting bright colours in the petals. It has been found with alpine plants that the anatomical character of the foliage is equally different. Thus of the plants growing in higher altitudes the epidermis and subepidermal cells of the leaves are thicker, the palissade tissue, so much concerned in the assimilative processes, is much more developed and richer in chlorophyll in those plants than when growing in the plains.† Similarly Mr. Sorby found that, by diminishing the exposure to light, a complete alteration was produced in the relative amount of colouring matters. "No red (erythrophyll) was developed, which was abundant in those flowers exposed to the sun, and for an equal quantity of petals (of Wallflower) only about one-third the amount of yellow (xanthophyll), and yet about the same quantity of chlorophyll and lichnoxanthine were formed. The result was (continues Mr. Sorby), that I had produced a temporary alteration in the proportion of the colouring-matters which correspond closely with what is the permanent condition of a different natural variety, or even of a different or closely allied species. Judging from certain facts which have attracted my attention, I think it extremely probable that in some cases natural varieties may be imitated in a similar temporary manner by reducing the constructive energy of the plants by other means."‡

* See *Origin of Floral Structures*, p. 177.
† Bonnier, in *Bull. Soc. Bot. Fr.*, 1887, p. 467.
‡ *Comp. Veg. Chromatology*, p. 479.

SIMULTANEOUS SPORTING.

The preceding observations appear to bear upon a question about which I should be glad of additional information, and that is the sporting of a species in different localities at the same time. I have been given to understand that this was the case with zonal Pelargoniums, which sported in England, France, and Germany simultaneously. Mr. J. Newhall wrote in the *Florist* (1851, p. 75):—"I have observed that in some summers there have been complaints of an unusual number of 'run' flowers amongst Carnations, and that they will be pretty general in a particular district." Lastly, Mr. Davis remarked, in the *Gardeners' Chronicle*, January 12, 1889, p. 42:—"A variety (of Chrysanthemum) rarely seems to sport in one place alone. It may show no inclination for many years, and then all at once sports appear in all directions." What are the climatic conditions which thus act on the plant it is difficult to say, but light, possibly temperature, variations in the ingredients of the atmosphere, as of ozone, &c., may all conspire to affect the plant. It at least shows how little as yet do we really understand the subject of variation of colours of flowers!

THE DEPENDENCE OF COLOURS ON CHLOROPHYLL.

As colours, at all events, mainly directly or indirectly depend on chlorophyll, the subject leads one to reflect upon what may be the best conditions for sustaining the assimilative powers of chlorophyll. From the familiar fact that plants will not become green without some degree of light and heat, we somewhat rashly infer they cannot have too much, at least of the former. In a few cases Nature tells us plainly, by the yellowing of the foliage, when too much light falls on them, as in Conifers and Aucuba japonica, which has dark green leaves when overshadowed, but yellow-spotted on the surface of the bush and in the light. Mr. Sorby found the proportion of chlorophyll to be as 150 to 31 in the shaded and unshaded leaves of Aucuba respectively; but he discovered that in the common Holly, which shows no difference to the eye, it was 100 : 62; for a Lichen (Platysma glaucum) as 100 : 75, and for the Sea-wrack (Fucus serratus) as 100 : 79. Hence, if we may generalise from these facts, we infer that it is not complete, but a moderate exposure to light which is best for foliage; and as colours depend upon foliage, then it is reasonable to expect that the "best" colours will follow neither a too great nor a too little exposure of the foliage. Here again is another open field for research, as well as to find out the best qualities of light as much as the best quantity. *George Henslow.*

(To be continued.)



FIG. 22.—A HYBRID NARCISSUS. (SEE TEXT, P. 161.)

WOLVERHAMPTON HORTICULTURAL AND FLORAL FÊTE.—This exhibition, which took place in the Public Park, on July 16, 17, and 18, appears to have proved a most gratifying financial success. It was the first of a new series of exhibitions at Wolverhampton, and a balance of £600 has resulted.

NARCISSUS JUNCIFOLIO × MUTICUS.*

I was very glad to see from your issue of July 20, 1889, p. 79, that Mr. C. Wolley Dod had sent bulbs of this wild hybrid Narcissus to Kew. It has already been described by Mr. Baker, both in these pages and also in his excellent handbook, *Amaryllidaceæ*. Whatever I know of it is owing to the publications of Mr. Baker and the courtesy of Mr. Dod, who kindly sent me fresh bulbs, which flowered in April of the present year in the Botanical Gardens of Trinity College, near Dublin.

It is one of the discoveries of Mr. Buxton, who found it near Gavarnie, in the Pyrenees, growing along with its supposed parents, N. juncifolius and N. Pseudo-Narcissus var. muticus, no other Narcissus, as Mr. Dod observes, being found within miles of its habitat. Broadly speaking, this hybrid belongs to the N. odorus section of the group, all of which, as long ago pointed out by Herbert, are hybrids between N. Jonquilla and the common Daffodil (N. Pseudo-Narcissus), and their variations. N. juncifolius up to the present time has been considered a distinct species, but I doubt very much whether it is really more than an outlying geographical form or phase of N. jonquilla, and when we secure all the forms of these two so-called species, no doubt they will be found to slide into each other, and even as it is, they pretty nearly do so.

My present intention, however, is to illustrate and describe this new hybrid. The illustration (fig. 22, p. 160), carefully made from fresh specimens, will speak for itself; and for description, I cannot do better than quote Mr. Baker (v. *Amaryllidaceæ*, p. 13, No. 21).

"N. juncifolio-muticus, Baker. Leaves subterete, bright green, $\frac{1}{6}$ inch broad, deeply channelled down the face. Peduncle slender, terete. Umbel 2—3 flowered; pedicels 1—1½ inch long. Perianth-tube cylindrical, greenish-yellow, $\frac{5}{8}$ inch long; segments ovate-oblong, spreading, lemon-yellow, $\frac{1}{2}$ to $\frac{5}{8}$ inch long, nearly $\frac{1}{2}$ inch broad; corona obconic, orange-yellow, $\frac{1}{4}$ inch long, above $\frac{1}{2}$ inch diameter at the truncate erect throat. Style reaching half way up the corona.

"Habitat.—Gathered in the Pyrenees in April, 1886, by E. W. Buxton, Esq., growing with its parents."

I find in cultivation that the plant varies considerably, bearing from one to four flowers on a scape; and while in some specimens the style is only half the length of the corona, in others it is the full length or nearly exserted. The flowers are pendulous in their earlier stages, but, as in all Narcissi, have a tendency to become erect with age. The odour is fresh and spicy, a quality, no doubt, inherited from its rush-leaved parent.

As Mr. C. W. Dod observes, the plant is of a vigorous constitution, and, although not at all a showy one, is nevertheless of great interest from a botanical and biological point of view.

Mr. Dod tells us (*Gard. Chron.*, p. 79) that Mr. Henry Buxton discovered this natural hybrid, while Mr. Baker says in his *Amaryllidaceæ*, p. 13, that it was found by Mr. E. W. Buxton—a little discrepancy, which, slight as it is, should be cleared up at once to prevent confusion. It is to be hoped that all those who travel for business or pleasure among the wild Narcissi of Europe, especially in southern France and the Pyrenees, will keep a sharp look-out for the natural hybrid and seedling vagaries which we now know to exist more frequently among these flowers than was at one time supposed. They are invaluable for purposes of study and comparison. *F. W. Burbidge.*

* J. G. Baker, in *Gard. Chron.*, xxv., p. 648.

PLANTS AND THEIR CULTURE.

The Greenhouse.—As Azaleas complete their growth the plants should be put out-of-doors. The soft-wooded Ericas and Epacris may also be turned out, but the pots must be protected from the mid-day sun. The stock of Cinerarias and other spring decorative plants should be examined, and another sowing in a cold frame may yet be made if the quantity be low. These plants will be useful for late flowering in 6-inch pots. If cuttings of named varieties be scarce they should be propagated without delay. Sowings of Primula sinensis should be made in the same way, using pots a size or two smaller for the final potting. Plants of the above now in pots should receive their last shift, not allowing them to become pot-bound. A late sowing of Calceolarias may now be made; well saturate the seed-pan before sowing the seed, and place the pans, covered with a piece of glass, in a north frame out of the reach of slugs. Humea elegans may likewise be sown. Mignonette should be sown in small pots in a cold frame, sowing one of the large-flowered kinds for this purpose, and thin out to one plant. For early autumn blooming larger, say 5-inch, pots may be used, leaving three plants in a pot and not shifting.

Rhodanthes, Gomphrena globosa, and Schizanthus should be sown, keeping the pans as near the glass as possible, The early sown Campanulas should be potted off, and a late sowing of Campanula pyramidalis may be made for succession. A good stock of Coleus should be made, and put into small pots for keeping through the winter. Liliums for late flowering should be placed under a north wall to retard growth. Tree Carnations ought now to be growing on freely in their flowering pots, and as the pots become full of roots, give liquid manure, and place the plants in the open on a hard coal-ash bottom. A few potted-on plants of Heliotrope will be useful in the late autumn. Plumbago capensis will be found of great service next spring; these may be readily struck from healthy cuttings now. Vallota purpurea will now be coming into bloom freely, and should be placed in the driest part of the house, so as to preserve their blooms as long as possible, but plants showing their spikes should get plenty of moisture. Zonal Pelargoniums for late blooming ought now to have received their final shift, and all the sun and light possible should be afforded, so as to thoroughly ripen the wood. Any plants which have been in bloom but are now past their best should be well cut back, the soil partially shaken out from the roots and repotted in the same sized pots in a rich compost and placed in a cold frame. When free growth has commenced, abundance of air should be given; these plants will form a succession to the earlier ones. Chrysanthemums should be staked to prevent the shoots breaking off, and as they fill their pots with roots and form their buds plenty of water may be given. Tritonia aurea should have liquid manure given occasionally to give substance to their blooms. Achimenes should be brought into a cool house to prolong their flowering season, and Gloxinias also. Cyclamens should now be growing freely, the young stock having received its last shift into the flowering pots; old plants should have a large portion of the old soil shaken away and repotted in the same sized pot with a good compost of two parts fibrous loam, one part good decomposed manure, a little peat and sand if the soil is heavy. If the plants be infested with greenfly they should be dipped in tobacco-water before repotting and fumigated frequently afterwards. Tea Roses in pots requiring a shift should be attended to as early as possible to give the plants time to fill their pots with roots, shortening back the long straggling growths and keeping them free from mildew. *Geo. Wythes, Syon House, Brentford.*

THE FLOWER GARDEN.

Annuals and other Plants for Spring Flowering should now be sown; the best position is one fully exposed to the sun, and the soil should be a deep, light loam, or, if stiff, with plenty of drainage, so as to insure the safe wintering of any plants left in the seed-bed for planting-out in the new year. As a rule, it is best to plant out in autumn, but in case the winter prove severe, and destroy the plants, a reserve should always be left in the seed-bed. The following annuals are those most in favour for spring flowering:—Candytufts, all the colours; Clarkia pulchella, the dwarf kinds especially; Collinsia bicolor, Eschscholtzia californica, Godetia, dwarf kinds, mixed colours; Linaria bipartita, Nemophila, mixed colours; Sanvitalia procumbens, and Silene pendula compacta. Sow the seeds thinly in drills, and no thinning-out will be needed until they are transplanted to their flowering quarters. Pansies, Violas, Wallflowers, Forget-me-Nots, Primroses, Daisies, and all other plants that are intended for spring bedding will, if they have grown strong, be all the better for lifting and replanting; and if the stock of any be short, it may be increased by division.

Propagation.—There will now be abundance of Pelargonium cuttings, and their propagation should be completed forthwith. For this part of the country the best way of treating the cuttings is to insert them on a dry border in the open air, and as soon as well rooted, lift them, and plant in boxes for the winter. In colder districts the cuttings should be inserted in the boxes and have frame protection, fully exposing them on sunny days. Violas and Pansies will, if shaded from sunshine, strike well in the open air in all districts.

There is yet plenty of time for the propagation of other kinds of bedding plants, but slight hotbeds composed of leaves should be made up in readiness for the earliest opportunity. No time should be lost in putting in the full stock of Pinks. Piping and the layering of Carnations ought also to be completed as early as possible. I prefer to layer them on the surface of the border, surrounding the layers with mounds of good sandy loam pressed down rather hard and kept constantly moist. Put in cuttings of Roses. All kinds strike readily enough if the wood be half ripened. A sunny bank is the best position, and the cuttings should be put in firmly. Glass coverings for winter protection would be desirable, but coverings of litter or bracken in severe weather will answer.

General Work.—This now mainly consists of the maintenance of neatness by keeping bad and seeding flowers picked off the plants, and the plants in foliage beds pinched back. Tie up Dahlias, Hollyhocks, and tall subtropicals as growth progresses, otherwise the first gale may do much damage. After this time one rarely sees Lobelias, Verbenas, and Calceolarias in good condition, and the reason is that care is not taken in the removal of bad flowers. Verbenas should always be afforded plenty of water, and never allowed to seed. The flowering points of Lobelias should be occasionally sheared over, which causes them to branch out lower down, and so keep on flowering. Calceolarias should never be allowed to carry all their flowers, and as soon as any are faded they ought to be picked off. *W. Wildsmith, Heckfield, Hants.*

FRUITS UNDER GLASS.

Cucumbers should receive plenty of moisture during the very hot sunny weather, giving liberal supplies of manure-water, and copious syringings, also damping the walls, borders, &c., when shutting up the house in the afternoon. Though I am generally in favour of the old plants being pulled out, and young ones planted in their places, old plants may be reinvigorated by well thinning out the older growths, and leading on young shoots, keeping the house close and moist, and top-dressing with Mushroom-dung and loam. Stop all growths, thin out the fruit, and tie in the shoots, not too thickly to overcrowd. Cuttings can now be put in for winter of some good strain, as Telegraph, inserting them in 48-sized pots, and gradually hardening them off, to make short, sturdy growth.

Pines.—Plants which are swelling their fruit should be assisted by a moist growing atmosphere; syringe the plants at shutting-up time in the afternoon, and damp the beds between the plants, also the paths and walls on fine sunny days, closing up early in the afternoon that the thermometer may rise to 90°, allowing 70° to 75° at night. Give liberal supplies of manure-water when required. Queens for starting early next season should be kept in a quiet condition, by giving them gradually less water and allowing a little more air. Others to fruit in succession next season must still be kept growing. Fruit now ripening should have a free circulation of air, damping the paths occasionally when very hot. Do not let the plants suffer for the want of water; but, at the same time, do not keep them too wet. While stimulating younger plants to grow, they should at the same time have plenty of air to induce a sturdy growth; look over them regularly to see if water be required. Syringe gently on sunny afternoons, damp the paths, &c., and give air in the morning as soon as the sun's heat can be felt. Continue to pot suckers from old fruiting plants, plunging them in a good bottom-heat; keep close, and syringe lightly in the afternoon, and until they begin to root; give shading if very hot. Shading has been very necessary this season at mid-day when very hot sunshine has succeeded a few dull days. *W. Bennett, Rangemore Gardens, Burton-on-Trent.*

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, Aug. 13.—Royal Horticultural Society: Fruit and Floral Committees, at Westminster.

SHOWS.

TUESDAY, Aug. 13—Clay Cross.
WEDNESDAY, Aug. 14.—Devon and Exeter. York Florists. Sutton and Cheam.
THURSDAY, Aug. 15.—Taunton. Maidenhead.
FRIDAY, Aug. 16—Cheadle, Cheshire (two days).
SATURDAY, Aug. 17.—National Co-operative at the Crystal Palace.

SALES.

THURSDAY, Aug. 15.—Orchids in Flower and Bud, at Stevens' Rooms.
FRIDAY, Aug. 16.—Imported and Established Orchids, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—62°.5.

Railway Rates.

Although some time has elapsed since we last referred to this important subject, it must not be supposed that the matter has not been receiving the attention which it deserves. From the reports contained in the daily press and from information which has been from time to time supplied to us by those more immediately connected with the subject as affecting the horticultural trade, we gather that the objectors and the railway companies have had a busy time. There is little doubt but that the Board of Trade were quite unprepared for the enormous mass of objections which were lodged, and which numbered nearly 4000. With such a task before them, it is not to be wondered at that the authorities should endeavour to establish a *modus vivendi* between the objectors and the railway companies. But unfortunately this has not yet been accomplished, and there appears to be some doubt as to whether it ever will be. If the proposal which was made by the promoters of the Railway and Canal Traffic Act to the effect that the matter should be referred to a Royal Commission for the purpose of arriving at a proper classification of merchandise had been adopted, the matter would not now have been, as it really still is, at the very commencement of the controversy. It cannot be a matter of surprise (although it must be of regret) that such a heterogeneous number of objectors should not be at once prepared for conjoint action. It is hoped, however, that any difficulty of this nature has now been overcome, and that in face of a common danger all trades will unite in a common opposition to the proposed classifications and rates. To the bodies of objectors in the north of England must be given the credit of first attempting, on behalf of the objectors, the establishment of a *modus vivendi*, but in our opinion it was a mistake on the part of the Lancashire and Cheshire Conference to make a descent on London, and to attempt to rule the movement to the exclusion of all the southern bodies of objectors. Under their auspices a meeting of all the objectors was held at the Westminster Palace Hotel on June 28 last, and although the resolutions proposed were carried, there was, nevertheless, a spirit of discontent amongst many Southerners at the way in which the Conference was carried out. Notwithstanding this feeling, the Lancashire and Cheshire Conference, armed with the resolutions, met the representatives of the railway companies on two occasions, at which meeting the representative of the Board of Trade was present, but no result was arrived at. Seeing the cause of their failure when it was too late to remedy it, the Lancashire and Cheshire Conference did that which we think they would have shown more judgment in doing at the outset, namely, joined with others in inducing the Lord Mayor to convene a meeting at the Mansion House. This meeting was held on July 26 last, and we think we are quite safe in saying that never before has there been held a more representative gathering. Every trade in any way affected by the proposed classification and rates was represented, and the Egyptian Hall was filled to overflowing. A series of resolutions was proposed and spoken to by some of the leading commercial men of London, Liverpool, Manchester, Birmingham, and numerous other provincial towns, besides several members of Parliament. Such a meeting cannot fail to exercise a great influence in the settlement of the matter, and we look to the Committee which was appointed (consisting of the Lord Mayor as President, and representatives of every Chamber of Commerce, Trade Association, and County Council in the kingdom), with confidence, and fully expect them to achieve that which, individually, the various objectors would be powerless to do. If any idea prevailed on the part of either the Board of Trade or the Railway Company that the matter would be dealt with in a perfunctory manner, the Mansion House meeting will at once dispel such an idea. We are glad to see that the matter has now assumed its present shape, and we shall watch with interest its development, and have no doubt that the Nursery and Seed Trade Association will also keep diligent watch over the interests of the community they represent, and be ready to act when occasion serves.

Tea Rose Rubens.—Our illustration (see Supplement) is taken from one of the photographs of Roses which attracted so much attention at the late Rose Conference, where they were exhibited by Messrs. Byrne & Co., of Richmond. The variety is of vigorous habit, with glossy foliage, large, globular, solitary flowers, or rarely in trusses of two or three, white, shaded with rose, and with a translucent, glowing yellow centre. It was sent out by Robert, in 1859, and must not be confounded with a H.P. of the same name.

M. J. Berkeley.—It may be of interest to some of our readers to know that Berkeley's last contribution to our pages was one on the diseases of Tomatos. It will be found at p. 498 of our issue for October 18, 1884. Berkeley's self-abnegation, not only where science was concerned, but also where his fellow-labourers were interested, will probably never be fully known. Those interested in the matter should turn to our columns for 1847, p. 779, where Oidium Tuckeri is for the first time described and figured, and wherein Berkeley alludes to the microscopical studies of Mr. Tucker as an illustration of the desirability of encouraging a thorough knowledge of the principles as well as the practice of horticulture. Berkeley was so pleased with what he saw of Mr. Tucker, that he paid him the compliment of naming the fungus after him. Sulphur is pointed out in that article as the remedy, and anyone would suppose that this discovery was made by Mr. Tucker. The same remedy was employed by Mr. Kyle and by Mr. Wilmot. The last named, we believe, received a sum of money from the French Government as a reward, but, said Berkeley in a letter dated December 8, 1880, a copy of which we have before us, "Mr. Tucker, gardener to Mr. John Slater, of Margate, ought to have received it, as he was the first who successfully used sulphur for Vine mildew. Mr. Tucker received hints from myself and Mr. George Hoffmann that sulphur was an effectual remedy for Peach mildew. *The fact is, I sacrificed myself to help Mr. Tucker, who was a very intelligent cultivator.*"

Haarlem.—The General Royal Society for the cultivation of flower-roots at Haarlem has issued its schedule of prizes for its sixteenth show. This will be the fourth large exhibition held at Haarlem. Such shows are held every five years, on the same system as the large exhibitions at Ghent (Belgium). The last of the Haarlem shows was in 1885. On the present occasion no fewer than 253 prizes, consisting of gold, gilt, silver, and bronze medals, are offered in 105 classes for Hyacinths, Tulips, Narcissus, Crocus, Amaryllis, and miscellaneous bulbs and roots, as well as for bouquets, &c., consisting of flowers of the same class of plants. The show is established to develop the bulb cultivation of the Haarlem country, and from this special point it certainly cannot be surpassed. It will be of great interest to foreign horticulturists and lovers of bulbous flowers to pay a visit to Haarlem at the time of the show, March 21 to 25, 1890. Information can be had from the General Secretary, Mr. D. Bakker, Gedempte Oude Gracht, 110, Haarlem, Holland.

The Misuse of Flowers.—We are delighted to see Mr. Bruce Findlay raising his voice against the silly "battle" of flowers, donkey decorations, tasteless device-makings, and political prostitution of what were intended for the enjoyment of all folk. These things are not merely silly, but they do harm by creating a positive distaste for flowers. The ridiculous excess to which the use of flowers at funerals has been carried, has crushed out the beautiful sentiment that once existed, as the tenderness of one's sympathies, and the depths of one's grief, are now measured by the amount of the florist's bill! The subjoined extract shows what they think of such things in the North:—

"An exhibition of flowers, fruits, and plants was opened in Peel Park, Salford, yesterday afternoon by the Mayor. The exhibition is intended to encourage the cultivation of cottage and window gardening throughout the borough. Of the quality of the exhibits, which were as in former years arranged in tents, the judges were Mr. Bruce Findlay, Mr. R. Tait, Mr. W. B. Upjohn, and Mr. J. Wright. The exhibition surpassed in many classes any previous effort of the kind. Especially was the improvement noticeable amongst the cottagers' plants.

"In connection with the exhibition there was luncheon for the promoters and judges. Mr. Bruce Findlay, responding to the toast of 'The Judges,' made a spirited protest against the wanton destruction of flowers. He said that flowers were the most beautiful things in the world, and therefore served a most useful purpose. They were useful when brought together in happy congress for the inspection and admiration of the public; they served a holy purpose when scattered up and down in the sick wards of our hospitals. Flowers brightened up our homes and beautified the earth, and were things to be prized and cherished. It seemed hardly possible that such lovely objects should be abused. Nevertheless, it was so. Suppose it was announced that to-morrow morning all the flowers in that building would be cut, bunched together, and that the mayor, aldermen, and councillors of Salford would be driven through the streets and that they would pelt each other with those flowers. He assumed that all sane people would say that such an exhibition of imbecility was impossible. Such an exhibition, however, did take place not



TEA ROSE "RUBENS".

many weeks ago at Blackpool, and was called the "Battle of Flowers." One was disposed to doubt the sanity of the people who would take part in such childish folly. There was another abuse of flowers he would name, and in doing so he was not going to tread upon the forbidden ground of politics, inasmuch as they had something purer and better to talk about. They all loved their native flowers, the Primrose being a special favourite. He very much feared that if the present craze continued, in a very short time places in which this lovely flower had grown for generations would know it no more."

THE CZAR PLUM.—Mr. Ronalds, of Chichester, sends us a branch of this Plum, laden with fruit, but rather smaller in size than usual. It is an oblong ovate fruit, rounded at both ends, 1¼ inch long, and nearly as much wide; purple, with a greyish bloom, with a deep suture, and a slender stalk half its own length; stone pointed at both ends. The broad obovate leaves are hairy on the under surface. It is a valuable Plum, from its early ripening and fertility, and as it ripens assumes a very dark colour, It was raised by Mr. Rivers, and first sent out in 1874.

HAPPY THOUGHT!—A few days ago we had occasion to apply to a trusty friend to whom we have been under obligations on other occasions, to furnish us with a report of a certain flower show. In due time came the report, with a request that any remuneration we might be disposed to assign to the writer, should be handed over to the Gardeners' Orphan Fund. We cannot, for obvious reasons, undertake to publish more than a very small proportion of the reports that reach us, especially if they are long, but the fact that we may possibly be doing something to increase the funds of the Institution in question, will certainly tend in some degree to influence our decision in the future, if our correspondents will give us the chance.

A LIST OF DAFFODILS.—The beautifully illustrated catalogue just now issued by Mr. W. Baylor Hartland, of Cork, deserves something more than its mere mention in our pages. Mr. Hartland is such an enthusiastic cultivator of the Narcissus in all its forms, and so constantly appears as their champion that we are not surprised that he should spend large sums of money in getting up a list of all the kinds most worthy of cultivation in a lovely and now much appreciated group of bulbous plants. The illustrations, by Mr. Welch chiefly, are from drawings by Miss Gertrude Hartland, and faithfully reproduce the originals, as they are seen in the favourable climate of the South of Ireland. If it were only for the figures of the various species and their varieties with which each of the twenty-nine pages is embellished, the book would be of value to amateurs as affording a good idea of the appearance of the best Narcissi, as well as a ready means of identifying them. Many enthusiasts find their readiest utterances in verse, and so we find our Irish friend giving us the rather curious mixture of price lists and descriptive notes, and sonnets from Felicia Hemans, Wordsworth, and Mrs. Sigourney, &c. The descriptive letterpress which accompanies the illustrations is concise and to the point, and is printed in good bold type.

CATALOGUE OF VARIETIES OF WHEAT.—M. Henry L. de Vilmorin has just published a systematic catalogue of the varieties of Wheat with their synonyms. It is based upon a list compiled by his father, and issued in 1850; but so great has been the progress that at least half the Wheats now in cultivation are unrepresented in it. M. H. L. de Vilmorin, in adding to the original list, has taken the opportunity of revising it and of modifying the classification. Wheats are here classified into six subdivisions:—The soft Wheats, derived from Triticum sativum; the turgid Wheats, from T. turgidum; the hard Wheats, from T. durum; the Polish Wheats from T. polonicum; the Spelts, from T. spelta; the "amidonniers" (a form of spelt), from T. amylaceum; and the one-grained Wheat from T. monococcum. Minor subdivisions depend on the presence or absence of beards, the downiness or smoothness of the chaff, the colour of the grain, &c. Under these six subdivisions are ranged fifty sections, each with a large number of representatives, so that on the whole some four hundred or more varieties are enumerated. Woodcuts are given, and an alphabetical index. We do not find any reference to the results of the important experiments made by Messrs. Carter.

GARDENING AT PENZANCE.—The new Penzance public park promises to give a great impetus to acclimatization. One of its features is to be a Palm-grove, where tourists may fancy themselves in the tropics or on the Mediterranean shores. The garden will be among the leading attractions of the place. Certainly Penzance winters are very mild (thanks mainly to the Gulf Stream influence), and though in the latitude of fifty degrees, the winter cold is hardly as severe as in Lombardy or Tuscany. Thus sub-tropical or even tropical plants do not run much risk from frost; the only difficulty is that the summer sun is hardly warm enough to develop them as in their native climes.

FORKING IN THE FRONDS OF FERNS.—M. Guébhard, in a recent number of the *Comptes Rendus*, attributes the division of the fronds of Scolopendrium and other Ferns to the puncture of an insect, or the attack of a parasitic fungus, but offers no direct evidence in support of his hypothesis.

NEW FIELDS FOR EXPLORATION.—The inspection of the handsome Spiræa described on p. 126, Aug. 3, under the name Kamtschatika, suggests the desirability of some of our enterprising nurserymen sending collectors to that little-known but most lovely island. That much in the way of hardy herbaceous plants and shrubs may be expected is evident from the admirable account of the island given in Dr. Guillemard's *Cruise of the Marchesa* reviewed in our columns. The account there given should certainly send all the plant-collectors and all lovers of fine scenery to Kamtschatka. Central China is another district whence novelties and interesting plants are literally pouring in to the herbaria, and inviting the collector to try his luck.

AGRICULTURAL PRODUCTS IN THE UNITED STATES.—According to the official returns of the American Minister of Agriculture, the following was the value of the products raised in the Republic in the financial year ending June, 1887:—Potatos, 78,441,940 dols., of which were exported to the value of 258,694 dols.; Sweet Potatos (the Batatas edulis), 20,400,000 dols.; Peas and Beans, 13,800,000 dols., of which were exported 450,000 dols.; other vegetables, 68,000,000 dols., of which were exported 250,518 dols.; fruits, 175,000,000 dols., of which were exported 1,601,979 dols.; grass seeds, 15,000,000 dols., of which were exported 638,329 dols. Wine production, 10,000,000 dols.

A CHILDREN'S FLOWER SHOW AT EALING.—A somewhat novel exhibition, promoted by the Ealing, Acton, and Hanwell Horticultural Society, recently took place in the Victoria Hall, Ealing. For a few years past prizes have been offered at the summer show in July for contributions of bouquets from children attending the elementary schools, and so large a number was staged, involving so much additional labour on the show day, that the committee resolved to make a separate exhibition of it, and it took place on July 24, in the new Public Hall. Prizes were offered for the best bouquet of garden flowers, and for one of wild flowers and grasses; and also for a plate of flowers and foliage made up by the children in the Hall. In the class for a bouquet of wild flowers and grasses 188 were staged; in that for a bouquet of garden flowers, fifty; and ten plates were filled by the youthful exhibitors. The competition was very keen in the two first-named classes, and the judges, who had to award over 100 prizes, had a difficult and long task set them. Among the extra prizes were over fifty cakes, presented by sympathising confectioners. Groups of plants and collections of cut flowers from Mr. J. Roberts, of Gunnersbury Park, and others, helped to make up a very pleasant show. During the afternoon the Rev. Professor Henslow discoursed on wild flowers, and what they teach, illustrating his words by living plants and diagrams. In the evening the prizes were presented by Mr. George Deal, who has taken great interest in the exhibition. In connection with it there was a sale of the flowers in aid of the Gardeners' Orphan Fund.

FERTILISERS FOR PLANTS.—For no one manure can the same amount of infallibility be asserted, for none can so universal an application be proclaimed as for So-and-So's cosmopolitan pills. Every gardener, too, knows, what the public appears not to realise in the case of physic, that a manure which may be excellent at one time or for one plant, may be useless or even injurious at another. Gardeners, too, are often made to pay an exorbitant price for an article otherwise good. This was made apparent some years since, when we published a series of analyses of popular manures and insecticides. All of these proved good in their way, but the prices charged were in most instances extremely high. Any village chemist capable of compounding a prescription for a cow can mix a preparation suitable for plants under different circumstances, but as an aid to gardeners and others we cite the following from a recent number of the *Jardin*. They or something equivalent have often been cited before, but the proportions of the several ingredients have not always been stated in so convenient a fashion. Dr. Jeannel's prescription, containing, as it does, notable proportions of nitrogen, phosphoric acid, and potash, is of general utility, though, indeed, the amount of potash in the soil is rarely deficient:—

Nitrate of ammonia	380 parts.
Biphosphate of ammonia	300 ,,
Nitrate of potash	260 ,,
Biphosphate of lime	50 ,,
Sulphate of iron	10 ,,
	1000

For flowering plants in pots the following mixture is recommended:—

Superphosphate of lime	4 parts.
Sulphate of lime	2 ,,
Nitrate of soda	½ ,,
Sulphate of ammonia	½ ,,
Chloride of potassium	½ ,,

For foliage plants in beds:—

Superphosphate of lime	1 parts.
Nitrate of soda	3 ,,
Chloride of potassium	1 ,,
Sulphate of lime	1 ,,

300 grammes (say ½ lb.) to be used per square yard at the time of planting. By citing it in this fashion the quantity to be made may be large or small. M. le Marquis de Paris recommends for foliage plants in pots:—

Nitrate of soda	1 part.
Sulphate of ammonia	1 ,,
Superphosphate of lime	2 ,,
Sulphate of lime	,,
Chloride of potassium	½ ,,

For flowering plants in beds:—

Nitrate of soda	2 parts.
Superphosphate of lime	10 ,,
Chloride of potassium	2 ,,
Sulphate of lime	4 ,,

Of these mixtures a teaspoonful should be used in a gallon of water once a week.

WARWICK AMATEURS AND COTTAGERS' HORTICULTURAL SOCIETY.—The ninth exhibition took place in the grounds of Warwick Castle on July 31, and proved as successful as any which preceded it. Competition is confined to *bonâ fide* amateurs and cottagers, and during the nine years the Society has existed, it has done much to spread abroad a know-

ledge of and taste for gardening in Warwick and its environs. Two of the most active and hardworking of the members of the committee are Mr. R. Greenfield of the Priory Gardens, and Mr. A. D. Christie, of Warwick Castle Gardens. The leading exhibitors of plants in the amateurs' division were Mr. James Bayly, Mr. J. Boswell, and Miss Garrington, who makes a specialty of Ferns. Mr. Ivens proved highly successful in the fruit classes. Mr. S. W. Cook (Mayor) led for Cherries. In the vegetable department, in which the produce was very fine, the leading prize winners were Messrs. Ivens, Russell, Gregory, Hart, Horne, W. Clarke, Lynes, Parsons, Payton, and T. Smith. In the cottagers' department some excellent plants were shown. Honorary exhibits greatly helped the show. Then Mr. R. Greenfield and Mr. A. D. Christie sent collections of plants. Messrs. T. Hewitt & Co., Solihull, sent a collection of plants and cut flowers in variety. Messrs. E. Webb & Sons, Wordsley, Stourbridge, sent a collection of Peas. Mr. E. Perkins, Regent Street, Leamington, had bouquets.

Frome Horticultural Society.—The annual exhibition was held on Bank Holiday, and was a very good one, the competition being keen, and the exhibits generally first-rate. Cottagers' produce was of excellent quality. Fruit was shown by Mr. Pratt, gr., Longleat; Mr. Strugnell, gr., Willow Vale; and others. Needless to say, it left little to be desired. Mr. Pratt's group of stove and greenhouse plants attained chief honours in its class.

Canadian Apples.—By the courtesy of Prof. Saunders and the Secretary of the Ontario Fruit Growers' Association, we learn that the Apple crop will be considerably under average. The Baldwins are not bearing this year, and the frost of May 29 froze the Apples on the trees in a great part of the chief Apple region of this Province. The only kinds of which it is likely there will be any quantity for export are Greenings and King's.

Romsey Horticultural Society. — This exhibition was held on Bank Holiday, in Broadlands Park, and was in every way successful. Mr. Budd, gr. to F. G. Dalgetty, scored the highest honours for stove and greenhouse plants, as also for fruit. Mr. Fowler, gr. to the Hon. Evelyn Ashley, and Mr. Budd kept the ball between them pretty much as regard fruit. Vegetables were well shown, Mr. Evans securing 1st prize. Cut flowers were of moderate merit. The judges were Mr. Cox, and Mr. Warden, of Clarendon Gardens.

Stachys.—MM. Pailleux & Bois have recently published in the *Revue des Sciences Naturelles Appliquées* an account of Stachys affinis, the root-stocks of which have been introduced as a vegetable under the name of Crosnes by M. Pailleux. In the present note the history of the plant, already made known to our readers by M. Naudin, is given. The analysis given shows 78 per cent. of water, 1·50 of nitrogenous matters, 1·67 of amides, and 16·5 per cent. of "galactane"—a newly discovered carbohydrate—a substance allied to dextrine, and intermediate between sugar and starch. In the dry state the percentage of this substance is stated to be as high as 76·7, so that the nutritive value is high, particularly as the proteic matters are cited as 6·6 per cent. We refer our readers to our account at p. 16, January 7, 1888, with a figure, and to the analysis made by Professor Church, at p. 708, December 15 of the same year, which apparently has not come under the notice of the authors.

Royal Scottish Arboricultural Society.—The annual general meeting of the Royal Scottish Arboricultural Society took place on the 6th inst. in the lecture-room of the Royal Botanic Garden, Edinburgh. Mr. M'Corquodale, sen., Scone, vice-president, was called to the chair, and delivered an address, hailing as a happy sign the appointment of Dr. Somerville to the chair of Forestry in the University of Edinburgh. Dr. Schlich, Cooper's Hill College, and Professor Sargent, Cambridge, Mass., were elected honorary members. Mr. Slater, Hayston, Peebles, gave in the report of the judges on the following competitive essays:—"On Abnormal Growths on Forest Trees," commended—Robert Coupar, forester, Ashford, Galway. "On the Effect of the Railway and Canal Traffic Act, 1888, in relation to Forestry," bronze medal—Mr. A. T. Williamson, Corstorphine. "On the Creation of Leasehold Timber Farms," No. 2 silver medal, Mr. A. T. Williamson. "On the Commercial Aspect of Bark Peeling," bronze medal, Mr. Williamson. "On the Old and Remarkable Yews in Scotland," gold medal, Mr. Hutchison, Carlowrie. "On the Formation of Plantations," bronze medal, Mr. Anthony Simpson, assistant forester, Alloa Park, Alloa. "On the Best Method of Seasoning Different Timbers," No. 2 silver medal, Mr. John Annand, Bruckley Castle, Aberdeenshire. The Secretary read a letter which the Council proposed to send to Lord Lothian, urging that the recommendation of the Select Committee for the formation of a Board of Forestry might be carried into effect, and that eventually Schools of Forestry might be established, one of which might be in Edinburgh. Dr. Cleghorn said the question of the Forestry Board was advancing, and he appreciated the significance of the appointment of Dr. Somerville in Edinburgh. The meeting, on the motion of Mr. Dunn, awarded its thanks to Professor Balfour for his energy in retaining the Botanic Garden as Crown property instead of handing it over to the University, as was proposed in the University Bill.

The Wild Flowers of Scotland.—On the 2nd and 3rd inst. an exhibition was held in Aberdeen for the benefit of the Aberdeen Sick Children's Hospital. The show consisted of bouquets of wild flowers from children in Scotland, and was promoted by the proprietors of *The People's Friend*, a Scotch paper. The sum of £160 was the result of this venture, and will be handed over to the above-named Institution.

Sciadopitys verticillata.—The largest specimen which I know, says Mr. Rein in the *Industries of Japan*, and which Japan can properly show, is found in a temple court in Nikko. Lehmann, who reckoned the height 24 metres, and the circumference at 4·15 metres, was told that the tree was 250 years old, an estimate that agrees very well with the age of the park in which it was found.

New Publications.—*Fallow and Fodder Crops*, by John Wrightson, M.R.A.C., &c. (London: Chapman & Hall, Limited).—*Directory of Cromer* (London: Jarrold & Sons, 3, Paternoster Buildings).—*The Newsagent*, No. 1 (London: 21 and 24, Temple Chambers, E.C.)—*Holiday Handbooks:* No. 3, *The Moselle;* No. 5, *The Hartz Mountains;* and *Tourist's Travel Talk*. Edited by P. Lindley (London: 125, Fleet Street, E.C.).

Notices of Books.

Darwinism: an Exposition of the Theory of Natural Selection, with some of its Applications. By Alfred Russel Wallace, LL.D., &c. (Macmillan & Co.)

(*Second Notice*).

Darwinism applied to Man. The Spiritual Life.

By far the most interesting and novel chapter in the book is the last. It is the only one in which the author really, or apparently, breaks away from Darwinian principles. His former chapters have been exclusively devoted to the illustration or to the expansion of the theory of natural selection as expounded by Darwin; but in his chapter on "Darwinism as applied to Man," Dr. Wallace propounds different views. The material construction of man presents no fundamental difference from that of animals. Whether the notion is agreeable to him or not, the fact remains that man corporeally is an animal, his conformation is the same, the mode of his development and growth is so absolutely identical that up to a comparatively late stage of development it is impossible to say from mere inspection whether the embryo will develop into a dog or into a man. All this may now be looked upon as certain as anything can be. The evidence is overwhelming and conclusive. But as to the faculties that distinguish man from the beasts of the field—conscience and the mental and moral nature—Dr. Wallace strongly opposes the notion that they have any continuity or relation to the phenomena witnessed in animals. This is not the place to enter at length into a discussion of so important a matter. It must suffice briefly to indicate the nature of the arguments made use of by Dr. Wallace. In the first place he alludes to the mathematical faculty, its almost total absence in savages, its sudden outburst, and its wonderful development in quite recent times, facts hardly compatible with the usual measured course of small beginnings, progressive development and adaptation. Similar remarks are made with reference to the origin and diffusion of the artistic and musical faculties, and to the possession of the faculty of wit and humour.

"The special faculties we have been discussing," continues Dr. Wallace, "clearly point to the existence in man of something which he has not derived from his animal progenitors—something which we may best refer to as being of a spiritual essence or nature, capable of progressive development under favourable conditions. On the hypothesis of this spiritual nature, superadded to the animal nature of man, we are able to understand much that is otherwise mysterious or unintelligible in regard to him, especially the enormous influence of ideas, principles, and beliefs over his own life and actions. Thus alone we can understand the constancy of the martyr, the unselfishness of the philanthropist, the devotion of the patriot, the enthusiasm of the artist, and the resolute and persevering search of the scientific worker after Nature's secrets. Thus we may perceive that the love of truth, the delight in beauty, the passion for justice, and the thrill of exultation with which we hear of any act of courageous self-sacrifice, are the workings within us of a higher nature which has not been developed by means of the struggle for material existence."

As to the difficulty on this view in conceiving the introduction and occurrence of new causes and influences in the chain of continuity, we are reminded that there are in all living beings three stages when some new cause or power must necessarily have come into action.

"The first stage is the change from inorganic to organic, when the earliest vegetable cell, or the living protoplasm out of which it arose, first appeared. This is often imputed to a mere increase of complexity of chemical compounds; but increase of complexity, with consequent instability, even if we admit that it may have produced protoplasm as a chemical compound, could certainly not have produced living protoplasm—protoplasm which has the power of growth and of reproduction, and of that continuous process of development which has resulted in the marvellous variety and complex organisation of the whole vegetable kingdom. There is in all this something quite beyond and apart from chemical changes, however complex; and it has been well said that the first vegetable cell was a new thing in the world, possessing altogether new powers—that of extracting and fixing carbon from the carbon dioxide of the atmosphere, that of indefinite reproductions, and still more marvellous, the power of variation and of reproducing those variations till endless complications of structure and varieties of form have been the result. Here, then, we have indications of a new power at work, which we may term vitality, since it gives to certain forms of matter all those characters and properties which constitute life.

"The next stage is still more marvellous, still more completely beyond all possibility of explanation by matter, its laws and forces It is the introduction of sensation or consciousness, constituting the fundamental distinction between the animal and vegetable kingdoms. Here all idea of mere complication of structure producing the result is out of the question. We feel it to be altogether preposterous to assume that at a certain stage of complexity of atomic constitution, and as a necessary result of that complexity alone, an *ego* should start into existence—a thing that feels—that is conscious of its own existence.

Here we have the certainty that something new has arisen—a being whose nascent consciousness has gone on increasing in power and definiteness till it has culminated in the higher animals. No verbal explanation or attempt at explanation—such as the statement that life is the result of the molecular forces of the protoplasm, or that the whole existing organic universe from the amæba up to man was latent in the fire-mist from which the solar system was developed—can afford any mental satisfaction, or help us in any way to a solution of the mystery.

"The third stage is, as we have seen, the existence in man of a number of his most characteristic and noblest faculties—those which raise him furthest above the brutes, and open up possibilities of almost indefinite advancement. These faculties could not possibly have been developed by means of the same laws which have determined the progressive development of the organic world in general, and also of man's physical organism. These three distinct stages of progress from the inorganic world of matter and motion up to man, point clearly to an unseen universe—to a world of spirit—to which the world of matter is altogether subordinate. To this spiritual world we may refer the marvellously complex forces which we know as gravitation, cohesion, chemical force, radiant force, and electricity, without which the material universe could not exist for a moment in its present form, or perhaps not at all . . . and still more surely can we refer to it those progressive manifestations of life in the vegetable, the animal, and man, which we may classify as unconscious, conscious, and intellectual life . . ."

"We thus find that the Darwinian theory, even when carried out to its extreme logical conclusion, not only does not oppose, but lends a decided support to, a belief in the spiritual nature of man. It shows us how man's body may have been developed from that of a lower animal form under the law of natural selection; but it also teaches us that we possess intellectual or moral faculties which could not have been so developed, but must have had another origin; and for this origin we can only find an adequate cause in the unseen universe of Spirit."

With this extract we must close our notice of a book which appeals to the curiosity, the intelligence, the sympathy of all readers.

CLISSOLD PARK.

As time progresses, London extends itself more and more into the suburbs, and the open surroundings of to-day soon become covered with bricks and mortar, and the atmosphere becomes more smoke-laden and unhealthy. In view of this, it is gratifying to find open spaces secured to the inhabitants. The London County Council and the Public Gardens Association deserve the thanks of the dwellers in North London, and especially of Stoke Newington and Islington, for the support given to local effort in the purchase of Clissold Park, the latest addition to the public parks of London. On p. 107 of our issue for July 27, the opening of this park, which took place on July 24, was referred to. The estate comprises over 50 acres, which is being laid out with walks, &c., and a fine ornamental lake has been formed. The New River runs round and through a portion of the park, and the illustration on p. 166 shows a portion on the south border, with the public road on the outside. Several very fine Horse Chestnut trees are in this neighbourhood, and overhang the water, which averages about 30 feet in width.

In the other illustration, fig. 24, p. 167, the house is shown which was formerly the residence of the owner of the park, Mr. Crawshay. The water is again that of the New River taking its course through the grounds. On the right-hand side of the view is an Oak tree, and in the opposite corner a fine Poplar is partly shown. Other trees in the park are chiefly Cedars, Limes, Elms, and Chestnuts. Close to the house are several old Laburnum trees, the trunk of one measuring quite 2 feet in diameter, and out in the park directly across from the house is a large Thorn tree, a very conspicuous object.

No doubt when things are settled down, the park will be enlivened by flower-beds, of which there are none at present, and the house may be found of service as the home of a public library, as is the case in the recently-acquired park at Hammersmith. The work of improvement is progressing, and is under the superintendence of Mr. Kempsell, who has been on the grounds for some time past.

ORCHID NOTES AND GLEANINGS.

VANDA KIMBALLIANA.

Many plants of this beautiful and distinct species are sending up their flower-spikes in Messrs. Hugh Low & Co.'s Nursery, Clapton. The flowers are borne to the number of six or seven, on slender upright spikes of about 1 foot in height (the collector saw fifteen flowers on a spike), and they are as large as those of V. Amesiana, which approaches it the nearest in relationship, but is vastly different in structure. The sepals and petals of V. Kimballiana are white, with the prominent nervures tinged with purple. The side lobes of the labellum, which have a curious crescent-shaped continuation, are yellow, marked with rich brown; the broad serrated front lobe is of the most intense violet-crimson, imparting to the flower a showy appearance. Like the species V. Amesiana it grows freely and flowers with certainty, and doing so more vigorously in cool, shady, unheated houses in which, at this nursery, the main stock of the plant is placed; the others standing in warm houses for experiment are not nearly so vigorous. *J. O'B.*

Satyriums in Flower.

These handsome Cape terrestrial Orchids promise a fine show in the small, unheated house devoted to them in McArthur's nursery, Maida Vale, W. Already some fine yellow species have their flowers expanded, and many stout spikes of the rosy red S. carneum princeps are well advanced. The tubers were potted up much in the same way as Hyacinth bulbs would be, and apparently they are not more difficult to flower when properly grown.

Lycaste Skeeana.

This delicately-tinted, profuse, and almost perpetual blooming species has been in great beauty at the London Nursery, Maida Vale, for some time past. Its flowers are white with rose lip, and compared with Lycaste Skinneri it exhibits other differences than the protracted season of bloom.

American Cypripediums.

A tramp through the swamps and wet hillsides of Lee, Berkshire Co., Mass., U.S.A., at this season of the year (June), will disclose a great many wild flowers of great beauty; but what will most attract a stranger's attention is the great quantity of Cypripedium spectabile; in certain sections they can be counted by the thousand, and no prettier sight can be seen in the woods than a mass of this grand Lady's Slipper. This spring has been very wet, and they seem more beautiful than ever; some of them have grown from 3 to 4 feet in height, and have three flowers open on a single spike, and in fact single flowers are rare. Cypripedium spectabile is always found growing in wet ground; and often, while walking though a swamp up to one's knees in water, this plant will be found growing from a clump of decayed Fern root as from a fallen tree; they are never in the water, but often surrounded by it.

Some of the mountains in this section are very springey, and there also can be found C. spectabile. I have seen it planted in dry ground, but it does not grow so strongly, nor are the flowers so large; but they are much brighter. I think they could be made to grow in almost any garden, planted in a moist, hardy fernery, or in a bunch of shrubbery where it is moist all the year round, giving a top-dressing of leaf-soil every fall. I know it is a difficult matter to get good stout crowns to start with in England, but plant them in a suitable place and they will increase very rapidly; they want a deal of shade in summer, and in winter all the light possible. Here all through the summer they are covered with grass, Ferns and underbush, besides the shade from the trees, but in winter the leaves are off the trees, and they are fully exposed to the sun, which is very bright during the later part of the winter and early spring; they are never to be found growing under evergreen trees. Here in winter it is very cold, the glass often falling to 20° below zero, and I have known it to be below zero for over a week at a time, so they do not want much protection in England.

Cypripedium acaule and C. pubescens are also very plentiful here. C. pubescens is found in similar places to C. spectabile, sometimes growing right in water. C. acaule is found in drier locations; they seem to like an open place in the woods, where there is plenty of decayed leaves and not too much undergrowth. I have planted all three varieties among the shrubbery in the garden of D. Witt Smith, Esq., and they do well. I also force them in winter. I dig them in summer when in flower, put them in boxes, let them get a good freezing, put them in the Fern-house in December, and they are in bloom by March. *Edward Norman, Mass., U.S.A.*

HOME CORRESPONDENCE.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

THE LATE REV. M. J. BERKELEY.—It has been my privilege for the last ten or twelve years to spend many a pleasant hour in the company of this gentleman in walking and admiring plants and trees that were known to him thirty years or more previously, and he would point out the progress made in many of them, notably coniferous trees, many of which he remembered when planted, and had watched their progress till they made handsome specimens from 50 to 70 feet in height. Writing as a gardener, one could not be in his company for long before finding out that he possessed a great knowledge of fruits, flowers, and vegetables, and his vast intellect and kindly tongue were ever ready to impart useful information on those subjects. It mattered not whether it was Grapes, Melons, Peaches, Plums, Apples, Pears, Potatos, Cabbages, and other vegetables, herbaceous and alpine plants, trees, shrubs, or forest trees, he was always well versed in the latest introductions, of their merits and drawbacks, and could also speak of the long list of good old kinds of fruits, flowers and vegetables that had come under his notice during sixty years. His memory was marvellous, and when last I had the pleasure of walking round the gardens here with him a few years ago—he being then in his eighty-third year—it was astonishing how readily he would give me the names of common British plants that I wished to know. It is very few men I have seen at that age with so quick and correct a memory. Many gardeners who have seen his noble countenance at the Royal Horticultural Society will never forget him. His portrait in last week's *Gardeners' Chronicle* is a speaking likeness. *A. Harding, Orton Hall Gardens, Peterborough.*

LONDON TREES.—May I add to your suggested additions to trees suitable for London, two more? One is the Acacia (Robinia); it is largely used abroad, and in some places in England (Bath for instance), with good effect, not singly, but mixed with others. The other is a tree much used abroad, but seldom used in England, but very effective—I mean the Lime with large leaves, white underneath, and semi-double, very sweet-scented flowers (I do not know its botanical name). I think there is one objection to the Salisburia—that its leaves are so easily blown off by the slightest wind. Any one interested in the planting of London trees should go to Gray's Inn Road to show how easy it is to make mistakes. The trees there are planted so close to the houses that they cannot remain where they are; but there is no chance of their remaining—more than half are already dead; and they all

give a good lesson on the evils of over-staking. It looks as if the trees were planted for the sake of the stakes, and instead of an avenue of Plane trees there is an avenue of dead trees and stakes, with a slight scattering of leaves. While agreeing with you as to the successful planting on the Embankment, I think the time has come to prepare for judicious thinning. Eventually it will be much improved by the removal of every alternate tree, and if preparation is made at once by the gradual removal of the side branches, in three or four years the trees can be removed without leaving any perceptible gap. *Henry N. Ellacombe, Bitton Vicarage, Gloucestershire.*

THE CATERPILLAR PLAGUE.—I have been much interested in the reports of the fruit crops, and the destructive caterpillars connected therewith. I have followed the pursuit of an entomologist, as well as that of a gardener, for the last twenty years, and my observations allow me to say that the larvæ of the order Lepidoptera and Coleoptera are, as a rule, far more injurious to the Apple and Pear crop than climatological influences. First, I think, ranks the Winter Moth (Cheimatobia brumata), and next to it come Tortrix moths. Where the Mottled Umber Moth occurs in numbers, they also prove very destructive. The Winter Moth and the Mottled Umber are easily destroyed, the females of these species being wingless. The whole genus Hybernia has wingless females, which emerge from the pupæ during the autumn and winter months. I am afraid cart-grease applied direct to the trees would injure them, and I use glue-size and whitening made rather thick. A band of this is painted round the tree 4 feet from the ground, and about 9 inches wide; when cold, the cart-grease is daubed over the band. For young trees with smooth bark a piece of brown-paper smeared with cart-grease may be tied on, and this I know answers well. Last winter I kept an account of insects taken from two Apple trees: on a small Keswick Codlin, a pyramid, I tied a piece of brown paper smeared with cart-grease and caught 32 wingless females of the Winter Moth, each of which would have laid eggs at the rate of 200 to 230; so taking 200 as the average number of eggs, I thus destroyed 6,000. On the same tree I caught two females of the Mottled Umber (Hybernia defoliaria), each of which would have deposited some 300 eggs. Total destroyed on this one tree, 6,600. On a Winter Queening Apple tree orchard standard, I caught 631 females of the Winter Moth, so here I destroyed 126,200 eggs. The two Tortrix larvæ I am unable at present to cope with; they make for themselves a little house by rolling two leaves of an Apple or a Pear tree together near a cluster of flowers, and coming out at night time feed on the flowers, or rather the pistils and stamens of the flowers. Another insect very common in Apple orchards is the green pug, destroying in the larvæ state a very great number of the flowers, feeding only on the inner portion of the Apple and Pear flowers. *R. B. E., Three Cocks, Breconshire.*

—— If gardeners and fruit growers can only rid themselves or keep clear of caterpillars by such a simple remedy as a ring of cart-grease round the trunks of the trees, we shall not much longer be bothered with these destructive insects, which have proved so fatal to the Apple crop during the last few years by attacking the fruit and eating up the leaves, as the cart-grease is easy of application, and cheap in the bargain. This is not the case with most insecticides, and what we want is something low in price that will do its work in the way of killing aphis without harming foliage or fruit. The need of this is felt this year, as almost everywhere Plums and Cherries have been ruined by fly, which have crippled the young growth, and fouled both leaves and fruit to such an extent, that trees look as if they had had a shower of ink over the whole. *J. S.*



Fig. 23.—CLISSOLD PARK. (see p. 165.)

HEAVY GLADSTONE PEACHES.—On reading the *Gardeners' Chronicle* of July 13, I note Mr. T. B. Wilson, Alscot Park, gathered a fruit of the Noblesse Peach which weighed 15½ oz. I would state that I have to-day gathered a Gladstone Peach weighing 15½ oz., and others of 14 oz. from the same tree. *J. Ratliffe, Springfield, Northampton.*

THE POTATO DISEASE.—During the past week the black Peronospora spot has exhibited itself on the leaf of the plants in a very virulent form. In spite of the considerable rains which have fallen the soil is not particularly wet; indeed, here it is rather dry than otherwise, and in no way promotive of decay. The frequent small showers which serve to keep the foliage almost constantly moist, however, help to develop the fungus rapidly, so that it spreads fast. There is already some complaint as to diseased tubers, but the bulk so far have been sound. There is much greater size in the tubers than was the case when first affected with disease last year, and the general crop is correspondingly greater. Potatos are so cheap that prior to the development of the disease it was difficult to sell at from 1*s.* 6*d.* to 2*s.* per bushel. Now buyers are dubious as to keeping, and purchase only from hand to mouth, so that the sale is slow. As to the general outcome of the first earliest little anxiety is shown, as the crop is carted off to market just as fast as the tubers can be sold. The bulk of the late crop in the fields is comprised of Magnum Bonum, and that variety still keeps pretty sound amidst the worst development of the disease. That there would have been, but for this disease attack, a wonderful crop of Potatos was evident. Even as it is, there can be little doubt, so much headway have all the late breadths made, that the supply will be still plentiful and cheap. Owing to the excessive hardness and rough condition of the soil in June, very few of my Potatos this season have been earthed up. I am anxious to observe what the ultimate result may be, as previously I have found the basin in the ridges, formed of the moving stems, to be a receptacle for spore-laden rainfalls, and productive of great mischief to the young tubers. We shall presently see what results, as now there are no such basins formed over the tubers. *A. Dean.*

—— The dreaded Potato disease has made its appearance in the cottage gardens of this district, in some of which the whole crop is attacked, the sorts that showed it most being, as usual, those of American origin, most of which have thin soft leaves and stems. The weather of late seems to have been in favour of the spread of this, as every year it appears to come on after showers and storms, and when the atmosphere is close and moist, which condition evidently suits germination of the spores. As this disease has shown itself thus early, I would advise those who have crops of early sorts with skins set, or nearly so, to dig them before the fungus attacks them. Those for seed will take no harm on the ground for a few days, although I do not like mine to lay there long, as they are apt to get

too hard from over much exposure. For storing seed Potatos no place is better than a light dry loft or shed, where there is plenty of air and they are safe from frost, and there they should be spread out thinly, and not covered. *J. Sheppard, Woolverstone.*

CLOVE CARNATION, PAUL ENGLEHEART. — I send you a bunch of the bedding Clove Carnation, Paul Engleheart, which I have been distributing for the past two seasons. It is what it professes to be, a first-rate border plant, especially valuable for massing, and, as you will see, the stems are so sturdy that they are able to support the fine head of flowers without stakes. Those sent are cut from last season's layers, the plants being less than a year old, but the second season we reckon to be the best for this particular variety, when the clumps are grand, with some 200 flowers open at once on each. Autumn planting seems to be absolutely necessary to its well-being, as layers kept in pots during the winter are not to be compared with those planted out in October —a fact which should be noted in its cultivation. I may add that this border Carnation is beginning to attract attention in the United States of America, and a paragraph criticism has appeared in *Garden and Forest*, July 10. *Gilbert Davidson.* [Very vigorous in growth, with good-sized flowers of a deep red colour. Ed.]

COTULA CORONOPIFOLIA.—This is described in Asa Gray's *Flora of North America* as a South African plant, naturalised as a ballast plant in some parts of North America. Is it known to botanists that it is naturalised in the Wirral of Cheshire, probably as a ballast plant? *C. Wolley Dod.*

PEAS AND MILDEW.—Sutton's Jubilee is the best Pea to resist the mildew. We have in our garden several sorts almost touching it, all of which are badly infested, but up to the present time Jubilee has no trace of the mildew. It is, as your correspondent last week remarks, a splendid Pea. We have been gathering from early sowings, as many as ten, eleven, and twelve peas in a pod. Huntingdonian is the worst variety for mildew again this season. I am much afraid that we must discard this very prolific Pea on that account. Telephone, and Duke of Albany, and Stratagem are excellent; the former more inclined to mildew than the latter. *W. A. Cook, Compton Basset Gardens, Calne.*

THE CHISWICK VEGETABLE CONFERENCE.—It is but natural that the committee which under the presidency of Mr. Harry Veitch has been charged by the Council of the Royal Horticultural Society with the promotion of and arrangements for the proposed Vegetable Conference at Chiswick, which is fixed for the 24th and two succeeding days of September, should begin to feel somewhat anxious as to the ultimate outcome of their consultations and decisions. The schedule of the Conference, both in relation to the vegetable display and the literary portion of the proceedings, is in the hands of the Council, and should be widely distributed as early as possible. The committee feel that the success of the Conference, in each of its departments, rests chiefly with the gardeners who are the chief and almost invariably the best cultivators of vegetables, and who have at command resources which not even the trade can always find available. Were the Conference to become a purely trade gathering, it would be a misfortune, as the aims and objects of the committee for the selection and classification of all the best vegetables of the kingdom might then be somewhat defeated. The committee, although presided over by a distinguished member of the nursery trade, and including in its body some other members of that and the seed trade, has at least manifested no trade proclivities—indeed, the spirit which has dominated its proceedings so far has been absolutely outside of trade influences or associations. The object in view can be more fittingly and more effectually secured through the co-operation of the gardeners of the kingdom than in any other way, and therefore it is most urgently desired that, so far as may be in their power, gardeners generally shall come to the aid of the committee by furnishing to the Conference freely the best possible examples of their vegetable products in season. But we may go a little further, and urge that gardeners shall regard the coming Conference as peculiarly theirs. It is the earnest desire of the promoters that such feeling should be dominant. The Orchidists, the Rosarians, the Fruitists, &c., have had their various innings, and why not the vegetable growers? and when we refer to these we refer to a legion of cultivators. The Conference offers neither prizes nor honours; these the committee have no power to bestow, still less have they the means. What honours are paid will not be personal but in the form of certificates given to excellent samples in every class, honours in which the variety and the cultivator thereof may equally share. But the committee hope to make the Conference eminently an educational influence. We live in days when no means of improving our knowledge, whether of things or of methods, may be ignored, and, therefore, if the Conference does not become educational, it will largely fail of its object, whilst, through the widest support offered to it by all classes of gardeners, but especially by the leading gardeners of the kingdom, the greater must be the benefits derived. With a view to creating for gardeners in connection with the Conference some special attraction, it has been proposed, and the suggestion adopted, that a real gardeners' gathering, social and festive, shall be held on one of the Conference evenings. That suggestion, which emanated from the committee, has been favoured by the Council of the Royal Horticultural Society so far that reference to it is now embodied in the schedule to be issued to the gardeners of the kingdom; and as the object of the proposal is to bring about, for once at least, one of those social gatherings which too seldom occur in horticultural ranks, it is hoped that the suggestion will be eagerly seized upon and accepted. We confess to a hearty desire to see this social gathering made a big thing. There has been no real gardeners' gathering of the kind named since 1866, but that was hardly the sort of association looked for now. The gathering, which will now probably take the form of a dinner with thorough social surroundings, grows naturally out of the Conference. The Conference is to be a gardeners' Conference, the social gathering is to be one of gardeners, therefore to be present at this social Gardeners' Vegetable Conference and the special gardeners' social gathering should be the aim so far as possible of every gardener of the United Kingdom. It is worthy of remark that the Conference falls at a time of year when gardeners' work is a little slackened and a day or two may well be spared for such enjoyable objects as those which we have indicated. Mr. Harry J. Veitch is the chairman of



Fig. 24.—Clissold Park: the mansion. (see p. 165.)

the Conference. We cannot indicate any eminent horticulturist likely to prove more thoroughly a *persona grata* with gardeners generally than that gentleman, and in all respects he seems to be the designated chairman of the social gathering. We may well suggest that wherever held, there shall be allied to the gathering an ample reception room, into which every comer shall be announced, and shall be introduced to the chairman and other distinguished supporters of his on the occasion; so that the poorest of gardeners as well as the best known may be placed at once *en rapport* with his fellows and be made to feel that though perhaps far from home yet that he is amongst friends. The proceedings of the gathering must be very bright and gay, the toast list must be limited to half-a-dozen items, the speeches must be short and bright, and there must be absolute abnegation of all personal references; that sort of thing, fulsome with compliment, is too apt to dominate our public dinners. There must be plenty of bright music and entertainment, and opportunity for social intercourse, so that when the gathering is over everyone may be enabled to say it has been good for him to have been there; and thus cherish pleasurably for life recollections of the Vegetable Conference and great gardeners' gathering of 1889. *R.*

CALCEOLARIA AND PANSY DISEASE.—In your issue of yesterday I noticed a report from Mr. W. G. Smith on some diseased Calceolarias and Pansies you had sent him, and was surprised to see that he stated that "he had never seen anything attacking the rootlets, large or small." This may be true with regard to Calceolarias, of which I know nothing, but having formerly been one of the largest amateur growers of Pansies in this country, I do know something of them, and can state that plants suffering from what is usually called "Pansy disease" are attacked by a microscopic insect. Under a high power of the microscope the rootlets are covered with oval semitransparent sacs, sometimes of a light pink colour, sometimes white. I never was able to discover the insect itself, but whether this was due to not having a high enough magnifying power or to the insect having not yet been hatched I cannot say. The disease undoubtedly comes most frequently when the plants are in ground manured with fresh horse-manure. It very seldom comes where really old cow-manure is used, and where the plants are not allowed to get too dry. I do not believe there is any remedy; the only thing to do is to pull up the plant affected directly it shows the unmistakeable signs of the disease, filling up the hole with chimney-soot, to prevent its spreading, and carefully burning the plants and all earth adhering to them. *C. Halford Thompson.*

The Hardy Fruit Garden.

Peach and Nectarine Trees.—These should now be gone over again, and all leading shoots secured to the wall, or wires, as may be, the laterals springing from next year's fruiting shoots should be shortened back to one eye, and any growths not required for filling up space to a couple of eyes. The shoots on many lightly cropped trees are very clean, but are somewhat inclined to be strong. These, when the growth is nearly completed, it will be well to thin out, so that the remaining shoots will be clear of each other. Although much rain has recently fallen the borders should be examined, and thoroughly watered if necessary. This applies particularly to trees carrying good crops of fruit, and which are growing on light elevated borders, as they are the first to suffer from drought, and require enormous quantities of water.

Apples and Pears.—Early Pears will soon be fit to gather. Look over the trees daily, pick off the most forward fruit, and place them in a cool fruit-room for use; by this method the supply is greatly lengthened. Doyenné d'Été is the earliest with us. Of Apples, Mr. Gladstone is the first to ripen for dessert, and some Keswick Codlins and Lord Suffield may now be gathered for culinary use, taking a few from all parts of the trees where thinning is most needed.

Strawberries.—Plants layered in pots will now be ready for planting out into their permanent quarters. See that the balls are made thoroughly wet before turning them out of the pot, and ram the soil firmly about them when planting; but some judgment is required in this respect on heavy tenacious soils; 2 feet apart is a good distance for the strong-growing sorts, but less will do for the weaker ones. Runners to be planted next spring should without further delay be planted in nursery beds, correctly naming them at the same time.

Budding may now be proceeded with. *H. Markham, Mereworth Castle, Kent.*

Societies.

ROYAL HORTICULTURAL.

Scientific Committee.

July 23.—Present: Dr. M. T. Masters, in the chair; Messrs. Maclachlan, Morris, Michael, Veitch, Wilson, Professor Ward, Dr. Müller, Dr. Oliver, and Rev. G. Henslow (Hon. Sec.).

Pinus austriaca Injured.—Dr. Masters brought boughs of this tree with the young shoots dead, sent by Dr. Hogg. The tree, he reports, was planted eighteen years ago, but for the last two years it has been attacked by some malady, the affection proceeding rapidly downwards. The soil on which it grew was a strong sandy clay, but well drained. No insect could be detected upon the boughs by Mr. Maclachlan, Mr. Veitch suggesting the cold wet season, and probably an injurious subsoil, as being the causes. Professor Ward remarked that a sudden thaw chilling the roots would produce such an effect as the tree in question showed, or an east wind catching the side of a plantation would be a sufficient cause. The fungus, Hysterium Pini, which produces black spots, gives rise to a similar appearance, but the specimen showed scarcely any suspicion of this disease. Professor Ward observed that the effect of frost in April is often recognised by the bases of the leaf-shoots remaining green, in consequence of the protection afforded them by the sheathing scales.

Abies Nordmanniana.—Dr. Scott reported as follows upon the specimens exhibited at the last meeting. "It appears that the burr-like mass of branches with paler yellowish-green foliage is due to the presence of Æcidium elatinum. The mycelium of this fungus was abundant in the stunted leaves and in the abnormal portions of the stem, the development of the leaves being much affected. The diseased leaves show no differentiation of palisade and spongy parenchyma; few chlorophyll granules are developed, and there is a marked deficiency of starch. This last-mentioned fact is, no doubt, a cause of the imperfect development of the wood in the infected branches." Prof. Marshall Ward, who had also examined it, added that he discovered a few spermogonia, but no "æcidium" sporanges. It is the same uredinous fungus which causes the "Witch's brooms," and is mostly, if not invariably, confined to Abies, for Dr. Masters remarked that he had met with it, if it be the same species, in Pinus austriaca, P. Strobus, and P. sylvestris and other species. Dr. Ward added that the fungus has a very remarkable stimulating effect on the cambium, and alters the botanical characters of the part affected, rendering the leaves annual. Mr. Michael had also examined the branch above referred to for the presence of any insects, and although having nothing to do with the cause of the alteration of structure, he found a Tarsonymus, but no phytopti. It is a leaf miner, and sometimes very destructive to trees at Turin. He also found eggs at the points of the shoots, which appeared to be those of some aphis.

Fern-prothallus with Water Pores (?).—With reference to the accumulation of water upon the prothalli mentioned at a previous meeting, Professor Ward thought it was quite conceivable that water might accumulate in the tracheids beneath the soil; but, on the other hand, it might have been merely dew-drops, the evidence being insufficient to furnish a more definite conclusion.

Ivy-leaved Pelargonium Diseased.—Mr. Morris showed leaves of plants received from France and grown at Chiswick, badly diseased with a new species of Glœosporium. There was no remedy known, and complete destruction by burning was the only thing to be done.

Effects of Hail at Kew.—He also showed leaves of bedding-out plants, and mentioned a long list of others injured in various degrees by the hailstones, which had riddled and lacerated them on July 15. Aquatic plants suffered in the same way. Some of the genera most severely injured were Funkia, Nicotiana, Polygonum, Gourds, Podophyllum, Malvaceæ, Saxifraga peltata, Rheum, Borragineæ, and Solanaceæ generally, and Gunnera scabra. Fortunately there was no damage to the glass-houses.

Peas Diseased.—Mr. N. H. Pownall, Lenton Hall Gardens, Nottingham, forwarded specimens of Peas badly attacked by Fungi. He reports that for years there have been patches of it, but this season it is very bad indeed. It was referred to Dr. Oliver for examination and report.

Plum Leaves Blighted.—Mr. J. Lloyd-Bozwan, of Worcester, had forwarded specimens to Kew, which Mr. Morris exhibited to the meeting. The blight had not been previously observed at Worcester. After the attack the leaves shrink up, wither and die, as if burnt, and the ends of the spring shoots, some 7 or 8 inches in length, die also. The leaves are mostly marked with discoloured patches of a faint dusky red colour. Dr. Masters said that he had received similar specimens from various districts. No fungus could be detected by Dr. Cooke, and no insect appeared to be the cause; but Mr. Veitch and other members of the committee had little doubt but that the affection was due to the wood having been badly ripened in the previous year.

The Red Rose of Lancaster.—Mr. W. G. Barron had sent specimens to Kew, which Mr. Morris exhibited, and were supposed to be this variety. It appeared, however, that in the opinion of experts it was a Damask Rose, and not the true Rose of Lancaster, which produces red and white blossoms on the same stem.

Rubus occidentalis.—Mr. Henslow exhibited fruiting branches of a plant originally received from Mr. Viccars Collyer, which he reported had come up quite accidentally in his garden. Mr. Henslow had cultivated it for two years. It flowered last year, the blossom being undistinguishable from those of a Raspberry, but bore no fruit. In the present season it has an abundance of fruit densely clustered, quite black, each "drupel" having a tomentose base and provided with an embryo. It agrees in appearance with the Blackberry, but has ripened at the period of the Raspberry. The stem and foliage is tomentose, agreeing with the Raspberry, but the method of formation of the quinate leaves, as described by Mr. Henslow last year, is that of the Blackberry. The taste was thought by members of the committee to indicate both parents. On examination it was found to be the North American species above mentioned.

Vegetable Marrow Malformed.—Mr. Henslow exhibited a specimen to which a branch had become adherent about half the length of the fruit. Although it had been cut off three or four weeks ago, the branch had grown about twelve or fourteen inches, and was producing flower buds at the expense of the tissues of the Marrow itself. It was accepted for the museum at Kew.

Mint with Spiral Torsion.—Prof. Marshall Ward exhibited a specimen of this well-known occurrence in plants, with opposite and decussate leaves. The leaves do not become alternate by any development of internodes, but are arranged in a secund manner, by a twist through a semicircle.

Mint Flowering.—Mr. Henslow observed that the common garden Mint is coming into blossom abundantly this season, and exhibited specimens in flower from Ealing. The shoot brought by Prof. Ward was also in bud. Mr. Henslow observed that at present the flowers are all female only, with rudimentary stamens—hence, like so many other Labiates, it will probably prove to be gyno-dicœcious.

Water Culture of the Potato.—Dr. Masters remarked on some experiments made by his daughter with Potatoes grown over water that they had produced an abundance of roots, and even some flowers, but no attempt was made to develop any new tubers till after the fall of the flowers.

THE CARNATION AND PICOTEE UNION.

August 1.—The fifth exhibition was held in Mr. E. S. Dodwell's garden, the Stanley Road, Oxford, when a goodly company attended. The exhibition was extensive, the competition in all classes being keen. Mr. Robert Lord, of Todmorden, was again a most successful exhibitor, taking the 1st prize for twelve Carnations, and also for twelve Picotees; while Mr. Robert Sydenham, of Birmingham, quite a new grower, bids fair to be one of the premier cultivators of the day. In addition to the 1500 blooms staged for competition, Mr. Dodwell had on view some 3000 pots, containing two or three plants each.

Carnations.—Twelve Carnations, flakes or bizarres,

dissimilar, there being eleven competitors, 1st, Mr. Robert Lord, Hole Bottom, Todmorden, with C.B. Master Fred, S.B. Reginald Power, P.P.B. John Harrison, S.B. George, S.B. Admiral Curzon, P.P.B. Deedie, R.F. Biddy Malone, F.P.B. William Skirving, C.B. Shirley Hibberd, S.F. John Ball, P.F. Squire Trow, and S.B. Robert Houlgrave—very fine and grand in colour; 2nd, Mr. Robert Sydenham, Birmingham.

In the class for six blooms there were thirteen competitors, and some very bright flowers of high-class quality were staged. The best came from Mr. Thomson, Helliwell, Todmorden, who had C.B. Master Fred, P.F. George Melville, C.B. Squire Llewelyn, S.B. Robert Lord, R.F. Crista-galli, and S.F. Sportsman; 2nd, Mr. J. Whitham, Hebden Bridge.

Picotees.—There were twelve stands of twelve blooms of Picotees, many being very fine. Mr. Lord was 1st here also, with flowers showing that striking purity of the ground and refinement of marking peculiar to the Todmorden flowers. His blooms consisted of H. red E. J. B. Bryant, H. rose E. Lady Louisa, H. purple E. Zerlina, H. red E. Brunette, H. rose E. Seedling 250, L. red E. Thomas William, L. rose E. Nellie, H. rose E. Mrs. Sharp, H. red E. John Smith, L.P.E. Ann Lord, L.P.E. Baroness Burdett Coutts, and H.P.E. Undine; 2nd, Mr. M. Rowan, Manor Street, Clapham.

In the class for six blooms there were eighteen competitors, and here Mr. John Whitham was 1st with H. Rose E. Mrs. Sharp, H. Red E. Brunette, L.P.E. Ann Lord, H.P.E. Zerlina, H. Red E. John Smith, and L. Red E. Thomas William; 2nd, Mr. Joseph Lakin, Temple Cowley.

Selfs, Fancies, and Yellow Grounds.—Two classes were devoted to these—one for twelve, the other for six blooms, and they were very attractive. There were thirteen stands of twelve varieties, the best coming from Mr. W. Read, gr. to George Dodwell, Esq., Oxford, who had Gladys, soft pink, a grand bloom; Joe Willett, rose and crimson, very bright; Schlieban (Benary), buff-pink and pinkish-slate; Theodore (Benary), of a peculiar shade of bluish-slate, very distinct; Emma Lakin, white; and some fine seedlings.

In the class for six blooms there were nine competing collections, and here Mr. A. W. Jones was 1st with Mrs. McLaren, Terra-Cotta, Mrs. Price, pink—very fine; Sir Toby Belch, Mary, and The Bride; all very fine indeed.

Yellow-grounds Kilmurry Special Prizes.—These were offered for six blooms of the Kilmurry yellow-ground seedlings, nine collections being staged. Mr. Read was placed 1st with remarkably fine blooms of Alfred Grey, Tournament, Patience, Queen of Hearts, and a Seedling; 2nd, Mr. F. Nutt. There was a class also for six blooms, any raisers, there being seventeen competitors. Here Mr. Read was again 1st with very finely-finished blooms.

In the classes for single blooms a very large number were staged; in those for Carnations the awards were as follows:—Scarlet bizarres: 1st, Mr. T. Lord, with Robert Houlgrave; Crimson bizarres: 1st and 2nd, Mr. R. Sydenham, with Master Fred; Pink and purple bizarres: Mr. T. Lord was 1st and 2nd with John Harrison. The best purple flake was Mayor of Nottingham, from Mr. T. Lord; the best scarlet flake was Alisemond (Douglas), from Mr. R. Sydenham; the best rose flake was Thalia, Mr. A. R. Brown taking 1st. The best self Carnation was Germania, from Mr. T. B. Thomson. A large number of blooms of fancies was also staged; Mr. Read had the best, showing Dodwell's 167. Yellow grounds were very numerous also; Mr. Read was 1st with Almira.

Single blooms of Picotees were shown in large numbers also. In the heavy red-edge class Mr. J. Lakin was 1st, with Isabel, a flower of his own raising in the way of Princess of Wales. The best light red-edge was Thomas William, from Mr. T. Lord. Of heavy purple-edges the best was Mrs. A. Chancellor, from Mr. T. Lord. The best light purple-edge was Jessie, from Mr. T. E. Henwood. Mr. Lord had the best heavy rose-edge in Lady Louisa. Nellie, from Mr. Rowan, was the best light rose-edge.

The premier Carnation, S.B. Robert Houlgrave, shown by Mr. T. Lord; and he had the premier Picotee also in heavy rose-edge Lady Louisa. The premier fancy was Dodwell's 167, shown by Mr. Read, having a pale sulphur ground, flaked with pink and bluish slate. The premier self was a very fine bloom of Germania, yellow, shown by Mr. M. Rowan. The premier yellow ground being Annie Douglas, shown in fine form by Mr. J. Lakin.

SOUTHAMPTON.

August 3 and 5.—The annual exhibition of the Royal Horticultural Society of Southampton was held in the Society's grounds in Westwood Park. Unfortunately, the weather on the opening day was very unfavourable; in addition to this, the Naval Review, arranged to be held at Portsmouth, no doubt took many people away. The show was a thoroughly representative one; if not so large as others held in the same grounds, it equalled them in the quality of the exhibits.

Plants always are a strong feature at this show, the principal class being for twelve stove or greenhouse specimens, half to be foliage, and the remainder flowering. Three entered for the substantial prizes of £15, £12, and £10. Mr. J. Cypher, nurseryman, Cheltenham, scored a somewhat easy victory by the excellence of his flowering plants especially, which included Phœnocoma prolifera Barnesii, fully 7 feet in diameter, profusely flowered; Erica tricolor coronata, 3 feet across; a freely-flowered Allamanda nobilis, Ixora regina and amabilis, and Stephanotis floribunda; a finely-coloured Croton, Queen Victoria, 7 feet across; with Cycas circinalis, Latania borbonica, Dasylirion acrotrichum, and Cordyline indivisa, were the best foliage plants. Mr. G. Lock, gr. to B. Cleave, Esq., Newcombe House, Crediton, Devon, was 2nd, being weak in his flowering plants. This collection contained fine Crotons. Mr. E. Wills, gr. to Mrs. Pearce, Bassett, Southampton, was 3rd, staging creditably.

For ten plants (gardeners only) there were again three competitors, Mr. N. Blandford, gr. to Mrs. Haselfoot, Bitterne, easily procuring the premier honour with healthy, well-flowered specimens and good foliage plants. Allamanda Hendersoni was well shown, and also Ixora Williamsi, and the seldom seen Lasiandra macrantha floribunda.

In the class for six stove or greenhouse flowering plants some fine specimens were staged, notably Statice profusa, fully 6 feet in diameter, and finely flowered; in Mr. Wills' 1st prize collection, a very fresh and freely-flowered Clerodendron Balfourianum and Erica obbata purpurea were his principal plants; Mr. G. Lock was 2nd, staging, amongst others, a freely flowered healthy Eucharis amazonica.

For six foliage plants, Mr. Lock led the way with capital examples of Dasylirion acrotrichum, Alocasia Sanderiana, Kentia Belmoreana, and finely-coloured Crotons; Mr. Wills, who was a good 2nd, staged the best six stove or greenhouse Ferns, with healthy plants of Davallia Mooreana, Microlepia hirta cristata, and Cibotium spectabile.

Miscellaneous groups arranged for effect in a space of 120 square feet made a fine display, occupying one side of the tent. Mr. G. Lock was the most successful out of six competitors, having a pleasing arrangement of suitable plants, lightly and effectively disposed, highly-coloured small Crotons, Lilium auratum, Celosias, and Francoas being especially attractive, the whole edged with Isolepis gracilis and Poa trivialis variegata in alternation; Mr. Wills was 2nd with an arrangement which lacked the quality of the 1st prize groups, although the arrangement was by no means bad. Mr. Ladhams, florist, Shirley, who used effectively many hardy plants, was an excellent arrangement.

Fuchsias were well shown by Mr. Wills in the class for six plants and for a single specimen, having freely flowered plants, 7 feet high, without being too closely trained; he was followed by Mr. Busby, gr. to F. Willan, Esq., Thornhill Park, Bitterne, who also took 1st honours for six double Pelargoniums and six Gloxinias, with good plants in both classes.

Mr. Blandford had the best six zonal Pelargoniums. Mr. Cypher took first honours for single specimen Orchid with Cattleya Gaskelliana delicata in a pan with thirteen spikes. Mr. J. Evans, gr. to Lady Ashburton, Melchet Court, Romsey, followed with Saccolabium Blumei, with sixteen racemes.

Cut flowers made a fine display. For twenty-four distinct Roses, Messrs. Keynes, Williams & Co., Salisbury, took 1st honours with well formed blooms of rich colour, the best being Charles Lefebvre, Her Majesty, Beauté de l'Europe, and Marshal P. Wilder. For twelve distinct, Mr. W. Neville, gr. to F. W. Flight, Esq., Twyford, Winchester, was 1st with a creditable stand. Stove and greenhouse flowers made a bold display. For twelve bunches, Mr. J. Evans led the way with Saccolabium guttatum, Æchmea fulgens, and Pancratium fragrans; Mr. Lock was 2nd with good bunches of bloom, but arranged too low on the board to present a good appearance. Messrs. J. Cheal & Son, nurserymen, Crawley, Sussex, staged the best twelve bunches of hardy herbaceous blooms, Actea spicata, Harpalium rigidum, Statice Limonium, and Saponaria elastica fl.-pl.; Mr. Ladhams was 2nd, the arrangement being too crowded. Very fine yellow ground Carnations were shown in the class set apart for them by Mr. F. Nutt, Rose Road, Southampton; while Mr. J. Rebbeck, Bevois Valley, Southampton, had the winning stand of Picotees. Messrs. Keynes led with twelve Dahlias of the show type, with large, finely formed and richly coloured blooms.

Table decorations were of high quality. For the best dressed one, 8 by 4 feet, Mr. J. R. Chard, Stoke Newington, was deservedly placed 1st with an elegant arrangement in which Aquilegia chrysantha, Gypsophila, Orchids, and Gladiolus Colvillei, the Bride figured largely in the three epergnes used. Mr. Lock was 2nd, the base of the stands being rather too dark, while the tops also lacked the lightness of the 1st prize winner.

Magnificent bouquets, both bridal and ball, were contributed by Messrs. Perkins & Sons.

Fruit.—The most interest was centred in the class for six dishes, Pines excluded, for which five competed. Mr. H. W. Ward, gr. to the Earl of Radnor, Longford Castle, Salisbury, was easily 1st, staging Madresfield Court and Muscat of Alexandria Grapes in good condition, the latter only requiring a little more time to make them perfect. A very fine Hero of Lockinge Melon, richly coloured Elruge Nectarines, Goshawk Peaches, and Moor Park Apricots completed the collection. Mr. G. Inglefield, gr. to Sir J. W. Kelk, Bart., Tedworth, Marlborough, was 2nd, staging neat bunches, well coloured, of Black Hamburgh Grapes, good Lord Napier Nectarines, and Golden Perfection Melon.

The class for three bunches of Grapes was but poorly filled. With very finely finished Black Hamburghs of medium size Mr. Inglefield gained 1st honours, Mr. Ward following with good clusters of the same variety. The last-named secured premier award for three bunches of white, with fine Muscat of Alexandria. Mr. Inglefield followed with the same sort, a trifle greener.

Two bunches of black Grapes produced a better entry. In this Mr. J. Allen, gr. to Captain the Hon. V. Montague, Wherwell Priory, took 1st card with good Alicante. Mr. F. G. Bealing, gr. to Stewart Macnaughten, Esq., Bitterne Manor House, followed with the same variety, Mr. Allen repeated his success in the next class—that for two bunches of white Grapes, with fairly well-coloured Muscat of Alexandria. Mr. N. Molyneux, gr. to J. C. Carpenter Garnier, Esq., Rooksbury Park, Fareham, was 2nd with good Buckland Sweetwater. For one bunch, any black variety, the last-named was easily 1st, with a large cluster of Black Hamburgh well coloured; Mr. Ward 2nd, with Madresfield Court, and 1st in the class, that for one bunch of any white variety, with well-coloured Buckland Sweetwater.

The best dish of six Peaches, which were large, well-coloured fruits of Royal George, came from Mr. C. Curtis, gr. to J. S. Dixon, Esq., Hollybank, Dibden. Mr. Inglefield staged highly coloured fruits of Elruge in the Nectarine class, and took 1st.

For one scarlet Melon Mr. J. Evans took 1st honours with Read's Hybrid. Mr. Thos. Annalls, gr. to T. G. Shenton, Esq., Twyford, Winchester, was 1st in the green flesh class with a small Hero of Lockinge. The best melons were staged for the prizes given by Messrs. Sutton & Sons. Mr. Ward led with Hero of Lockinge. Mr. Allen following with the same kind.

For six dishes of outdoor fruit Mr. R. West, gr. to J. R. Wygram, Esq., Northlands, Salisbury, was 1st, with good dishes of Morello Cherries, Raspberries, and Gooseberries.

Mr. G. Windebank, Southampton, staged the best dessert Apples in three dishes, while the best dishes of kitchen ditto came from Mr. G. Busby.

Vegetables made a grand show, the competition being brisk. For twelve distinct varieties Mr. C. J. Waite, gr. to Col. the Hon. W. P. Talbot, Glenhurst, Esher, was easily 1st, with hardly a faulty dish. The most noteworthy were Puritan Potato, Perfection Tomatos, Duchess Peas, Golden Ball Onion, and Intermediate Carrots. Mr. T. Wilkins, gr. to Lady Theodore Guest, Inwood Henstridge, Blandford, took 2nd honours, staging capital produce also. For nine dishes there were eight competitors, the best being a clean lot from Mr. Allen, Perfection Tomatos, Sutton's Seedling Potatos, and White Spanish Onions being the most noteworthy. For a collection of six varieties for which Messrs. Webb & Son contributed the prizes, there were some good collections staged, Mr. Waite and Mr. Wilkins being placed in the order

named. Mr. West staged the best eight dishes of Potatos, four round and four kidney, clean, even samples of leading varieties.

Tomatos made a great show. For the best nine specimens of Sutton's Perfection Mr. C. J. Waite led the way with a splendid dish; and for the Society's prize for one dish, Mr. G. Feltham, florist, Southampton, took leading honours.

Mr. Chard took 1st rank with Cucumbers, and for spring-sown Onions Mr. J. Simpson, St. Denys, Southampton, was 1st among several competitors.

At one end of the large marquee Mr. W. H. Rogers, Red Lodge Nursery, Southampton, had arranged a very fine collection of Conifers and hardy shrubs, not for competition, which were much admired.

Messrs. Wood & Son, Wood Green, London, had on view an extensive collection of sundries.

LIVERPOOL HORTICULTURAL.

August 3 and 5.—For the past nine years the annual summer show of this Society had been held in the beautiful surroundings of Sefton Park, but last year having been wet, the attendance sparse, and the City Council having imposed conditions certainly not tending to foster horticultural displays, the committee removed the exhibition to the east side of the city, and fixed on a site used by the police as an athletic ground. It was, perhaps, the best all-round exhibition of the Society, but the attendance was very poor, neither the subscribers who have so well supported the Society, nor the general public attending.

In the class for twelve stove and greenhouse plants, Mr. James Cypher was deservedly 1st, with a fine Bougainvillea glabra covered with flower, Clerodendron Balfourianum equally well-flowered, Erica Irbyana, and fine Ixoras; and amongst the foliage plants, large and well-coloured Crotons, Latania borbonica, and a grand Cycas. Mr. Finch, gr. to J. Marriott, Esq., was a good 2nd, with Statice profusa a yard through, fresh and beautiful; Dipladenia amabilis, Lapageria rosea, Ixora Duffi, with splendid heads of bright crimson flowers; Croton mortfontainensis, and Cycas circinalis,

In the class for six stove and greenhouse plants, the local growers showed to great advantage. Mr. Cromwell, gr. to T. Sutton Temmis, Esq., putting up a fine group of Allamanda Chelsoni, Ixora coccinea, Anthurium Scherzerianum, with a really splendid Gleichenia dichotoma. Mr. Cox, gr. to W. W. Watts, Esq., with fine Ixora coccinea and Allamanda Hendersoni, Erica Eweriana, and a rare example of Calamus ciliaris, was 2nd.

For four stove and greenhouse plants, two of the exhibitors, Mr. Cromwell and Mr. Roberts, set up each four splendid plants, Ixoras, Stephanotis, Allamandas, but failed to notice that they were all stove plants, and consequently were disqualified, and the 1st prize went to Mr. Cox, who, in addition to a fine Clerodendron Balfourianum, Ixoras Pilgrimi and Dixiana, had a fine Statice.

Foliage plants, six varieties, were best from Mr. Jellicoe, with Dion edule, Pritchardia pacifica, and fine well-grown Crotons. He was followed by Mr. Cromwell, whose group contained Gleichenia dichotoma, Kentia Belmoreana, and Phœnix rupicola, with very fine Crotons Disraeli and Williamsii. Very general opinion was expressed that these positions should have been reversed. In four foliage plants the most noticeable were the Croton interruptus aureus of Colonel Wilson, C. Aigburthiensis of Mr. Cox, and Anthurium crystallinum of Mr. Brancker.

Palms were a fine exhibit, with well developed, fresh, and perfect leaves. Mr. Nicholson and Mr. Watts taking prizes in the order named.

Table plants were both numerous and varied, though wanting in elegance in some of the groups, Mr. Evans, gr. to Wellwood Maxwell, Esq., being deservedly 1st.

The class for eight exotic Ferns only brought two groups; that of Mr. Cromwell, who led, contained noteworthy plants of Microlepia hirta cristata, Nephrolepis davalloides furcans, and N. rufescens bipinnatifida.

In the class for four varieties Mr. Cox also set up a well-grown fresh group. Filmy Ferns, and a pair of Todeas from Mr. Foster, were well developed and vigorous. Tree Ferns were well shown by Messrs. Cox, Foster, and Eaton.

Though Orchid culture has received a decided impetus of late in the vicinity of Liverpool, the plants staged were small and of neither novelty nor great merit, Saccolabium Blumei majus and Oncidium Lanceanum being the best, with a good Lælia; Mr. Bowring and Mr. Gowen taking the chief positions.

Greenhouse Heaths were neat well-flowered plants of medium size, Messrs. Cox, Cypher, and Cromwell taking the awards as placed. Fuchsias, formerly well done in the neighbourhood, are advancing towards the old standard of perfection. The tall, well-balanced pyramids of Mr. Cox taking the 1st place, Mr. Cromwell being 2nd with more bushy plants.

Profusely-bloomed and well-trained zonal Pelargoniums were shown by Messrs. Gowen, Winkworth, Bustard, McKellar, and Bridge, and in the class of four Ivy-leaved varieties were fine pyramids 3 to 4 feet high, forming admirable decorative plants. Mr. Storey staging a very fine lot, closely followed by Messrs. Winkworth and Holford.

Coleus staged between the exhibits of zonal Pelargoniums were fine, well-developed, fresh plants, wanting in the lighter-coloured varieties to make them more effective. Messrs. Eaton, Shore, and Wilson, took the awards in the order given.

Caladiums were well staged by Mr. Warrington, gr. to Tyndall Bright, Esq.—large, well developed, highly-coloured foliage, and, having been coolly grown, they did not flag, as this class too often do.

Groups.—In the class for a circular group of plants, 150 feet, arranged for effect by gentlemen's gardeners, five competitors entered, and though this has been a feature of the Liverpool show in years past, those set up on this occasion were not equal to the efforts of former years; they were all cast in the same mould, and wanted life and attractiveness. Messrs. Cox, Jellicoe, Jones, and Moorhouse were the successful exhibitors.

In the open class for group of 250 square feet, Messrs. W. P. Kerr & Sons, Liverpool, were the only competitors, with a very bright arrangement of Crotons, Humeas, Lilium Harrisii and L. auratum, with groundwork of Maidenhair Fern, dotted with choice foliage and flowering plants.

Adjacent, but not for competition, the Liverpool Horticultural Company set up a group of Niphetos, The Bride, and Paquerette Roses, in 6 and 7-inch pots, another similar group of Tea Roses in great variety, and another of miscellaneous plants, Crotons, Dracænas, Lilies, &c., were also set up by the same Company, and added to the beauty of the show.

Messrs. Dickson, Limited, of Chester, had two tables of small miscellaneous nursery stuff, Palms, Crotons, Dracænas, Cyperus, Statices, &c., clean and healthy, and well-arranged.

Cut Flowers were numerous and good. In the Rose classes, Messrs. Alexander Dickson & Son, of Newtonards, took the premier prize in the 48's, with grand examples of the leading sorts, followed by Messrs. Cocker & Sons, of Aberdeen, and Messrs. Small & Sons, of Stranraer.

In the class for eighteen Tea, Hybrid, and Noisettes, Messrs. Mack, of Catterick, were a good 1st.

In the local class for twelve Roses, Mr. T. B. Hall, of Rock Ferry, was 1st; and in the class for six light and six dark Roses, Messrs. Dickson, of Newtonards, took the honours.

A class was for the best box of Roses, 4 feet long by 1½ foot broad, most tastefully arranged. Here Mr. Hall was 1st, Messrs. Green & Bulley taking the other prizes. This is a desirable and attractive class, and was much admired by the visitors. Cut herbaceous flowers were largely shown, and proved very interesting; the best were those of Mr. Eaton, gr. to W. H. Shirley.

The Fruit Classes were well filled with excellent examples of culture, noticeable being the collections staged by Mr. Edmond, gr. to the Duke of St. Albans, and Mr. Goodacre, Elvaston Castle, Borrowash; whilst the Lancashire growers well sustained their reputation as Grape growers, the black Grapes staged by Mr. Middleton, Rainford Hall, and Mr. Stevenson, The Hazels, being perfect in bunch, berry, and colour. Peaches, Nectarines, and Melons were largely shown, and the competition very keen. This remark applies also to the vegetable classes, which all through displayed large collections of the best varieties well grown.

TRENTHAM HORTICULTURAL.

Thursday, *July* 25.—The second annual exhibition of this flourishing Society was held in the splendid grounds at Trentham Hall, by permission of His Grace the Duke of Sutherland. A more lovely spot for an exhibition of this description could not be found; the arrangements were under the supervision of Mr. Blair, the Duke's gardener, and Mr. Taylor, the secretary, and gave the fullest satisfaction to every one. The weather was fine, and nearly 20,000 persons visited the show. The show, which was a good one in most departments, was opened by His Grace the Duke of Sutherland, who was accompanied by the Duchess and a distinguished company, and who, in a short speech, spoke highly of the prospects of the Society.

The principal features in the plant classes were the effective groups, especially that put up by Mr. Blair, the gardener at Trentham. This occupied the whole end of the large marquee, and was greatly admired by all for its light and graceful arrangement of Palms, Orchids, and other foliage and flowering plants. The groups in competition were fair, the first in the open class going to Mr. Stevens, gr. to W. Thompson, Esq., Stone, whose group contained many fine Orchids.

Roses and other cut flowers were shown in quantity, the principal prizes for Roses going to Ireland, Messrs. Dickson & Sons, Newtonards, being in fine form. The first for bouquets in two classes were Messrs. Perkins & Son, Coventry; while a nicely arranged epergne by Mrs. Blair secured for her an easy first prize.

Fruit was fairly good in the collection of eight dishes, Mr. Thorpe, of Newark, was first. Mr. Wilkes, of Cresswell Hall, first, both for two and for three bunches of Black Grapes; while Mr. Edmond, of Bestwood Park, Arnold, Nottingham, secured the same for White Grapes.

Vegetables were shown in great quantities, and the 1st for a collection was secured by Mr. Fitzherbert. The cottagers' and amateurs' classes were well filled, and the quality of the exhibits was good.
A Correspondent.

THAMES DITTON HORTICULTURAL.

A successful exhibition was held by this young and prosperous Society on Wednesday, July 24, groups for effect forming an effective display. There were six competitors in this class, 1st honours being accorded to Mr. Card, gr. to — Rucker, Esq., Thames Ditton.

Messrs. Puttock & Shepherd, nurserymen, Kingston, successors to the well-known firm of T. Jackson & Sons, of Erica and Azalea fame, had an attractive group, but not for competition. Examples of Alocasia Lowi were observed in this group, fresh and well grown; Aërides Lobbi, Miltonia vexillaria in variety, and Cypripedium Laurenceanum were likewise conspicuous plants. Crotons of very bright colours, Nephrolepis Duffi, and N. davallioides furcans, were well shown. Messrs. J. Laing & Sons, nurserymen, Forest Hill, sent blooms of their well-known strain of Tuberous Begonias. Mr. W. Tayler, Hampton, put some boxes of fine Roses, conspicuous being A. K. Williams, Louis Van Houtte, Duke of Wellington, and Her Majesty. Mr. Miller, gr. to Lord Foley, Esher, sent some good examples of Melon, named Lord Foley.

The Royal Horticultural offered a Banksian Medal to the exhibitor who should secure the greatest number of prizes, and this was won by Mr. W. Palmer.

SCOTTISH HORTICULTURAL ASSOCIATION.

The fifth ordinary meeting of this session was held in 5, St. Andrew Square, Edinburgh, on Tuesday, August 6, Professor Bayley Balfour, President, in the chair. There was a large attendance of Members. Mr. Mungo Temple, Carron Shore, Falkirk, read a paper on "The Properties of Fruits," wherein the relative value to be given to the different kinds was briefly stated; and a paper was read by Mr. Mackenzie, Treasurer, prepared by Mr. Charles Webster, Gordon Castle, on "Hardy Annuals," in which a select list was given, and cultural details described.

Among exhibits were a large collection of seedling Begonias from Mr. John Downie, Beech Hill Nurseries. Three double and one single yellow received First-class Certificates. Mr. M. Dunn, Dalkeith Palace Gardens, sent seedling Chrysanthemum Duchess of Buccleuch, which was before the meeting in spring, and now again in fine form, and received a First-class Certificate. Mr. Henderson was awarded a Certificate for a new seedling Dahlia, single, bright crimson, of good form and great substance, named Mrs. Henderson. Mr. H. Reynard, gr., Ardenclutha, Hamilton, sent a very fine collec-

tion of cut blooms of seedling Carnations and Picotees of his own raising. Mr. Robert Grossart, Oswald Road, exhibited a plant in flower of Cœlogyne pandurata. Messrs. Dicksons & Sons, Inverleith Nurseries, a collection of seedling Pentstemons. Mr. D. McIvor, Phantassie Gardens, a stand of seedling border Carnations.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending August 5.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (−) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 +	114	0	+ 216	+ 4	2 —	143	21.4	22	24
2	3 +	125	0	+ 80	+ 5	4 +	113	14.5	35	31
3	3 +	139	0	+ 59	+ 7	0 av.	104	13.0	40	29
4	3 +	152	0	+ 35	+ 112	1 (est) +	111	15.0	55	31
5	2 +	148	0	+ 39	+ 60	0 av.	104	17.4	46	29
6	2 +	152	0	+ 84	+ 75	0 av.	109	14.2	49	30
7	2 +	124	0	+ 105	— 23	0 av.	119	22.2	24	32
8	2 +	137	0	+ 87	— 1	5 +	109	16.7	39	32
9	0 av.	133	0	+ 7	+ 88	2 +	109	19.6	35	36
10	0 av.	119	0	+ 55	— 53	6 +	132	20.1	25	28
11	0 av.	125	0	+ 23	— 14	1 +	120	19.5	36	34
12	2 +	149	0	+ 111	— 16	2 +	116	15.5	48	40

The districts indicated by number in the first column are the following :—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 5, is furnished from the Meteorological Office :—

"*The weather* was fine and dry in nearly all parts of our islands during the early days of the period, but subsequently became very unsettled, squally, and rainy, with occasional thunder and lightning.

"*The temperature* has just equalled the mean in Ireland and the south-west of England, but in all other districts it has been 2° or 3° above. The highest of the maxima were recorded between July 30 and August 1, and varied from 73° to 75° in Ireland, from 75° to 81° in Scotland, and from 80° to 85° over England. Towards the end of the time the maxima were much lower, the thermometer in some cases not reaching 60°, and only rising to 70° at a few of our southern stations. The lowest of the minima, which were registered on somewhat irregular dates, ranged from 44° in 'Ireland, N.,' to 50° in 'England, S.,' and 56° in the 'Channel Islands.'

"*The rainfall* has been a little less than the mean in 'Scotland, N.,' and about equal to it over southern, central, and north-eastern England, as well as in the west of Scotland. Over Ireland, the western parts of England, the Channel Islands, and in 'England, E.,' however, an excess is shown.

"*Bright sunshine* shows a decrease in most parts of Scotland and in the North of Ireland, but in all other districts it has been more prevalent than it was last week. The percentage of the possible amount of duration ranged from 22 in 'Scotland, N.,' and 24 in 'Scotland, W.,' to 48 in the 'Channel Islands,' 49 in 'England, S.,' and 55 in 'England, E.'"

MARKETS.

COVENT GARDEN, August 8.

Business quiet, owing to the holidays. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Currants, Black, ½-sieve ...	4 0- 6 0	Lemons, per case ...	12 0-21 0
— Red, ½-sieve ...	3 6- 4 6	Peaches, per doz. ...	6 0-15 0
Gooseberries, ½-sieve	3 0- 3 6	Pine-apples, Eng., lb.	1 6- 3 0
Grapes, per lb. ...	0 6- 2 6	— St. Michael, each	2 0- 6 0

Vegetables.—Average Retail Prices.

	s. d. s. d.		s. d. s. d.
Beans, Fr., per lb. ...	0 6- ...	Mushrooms, punnet	2 0- ...
Beet, red, per dozen	1 0- 2 0	Mustard and Cress, punnet	0 4- ...
Carrots, per bunch...	0 6- ...	Onions, per bunch ...	0 5- ...
Cauliflowers, each ...	0 3- ...	Parsley, per bunch...	0 4- ...
Celery, per bundle ...	1 6- 2 0	Peas, per quart ...	1 3- ...
Cucumbers, each ...	0 6- 0 9	Shallots, per lb. ...	0 6- ...
Endive, per dozen ...	2 0- ...	Spinach, per bushel...	3 6- ...
Green Mint, bunch...	0 4- ...	Tomatos, per lb. ...	0 9- ...
Herbs, per bunch ...	0 4- ...	Turnips, per bunch, new	0 5- ...
Leeks, per bunch ...	0 3- ...		
Lettuce, per dozen ...	1 6- ...		

Potatos.—Trade still very quiet, only the very best samples commanding a sale. Kidneys, 3s. 6d. to 4s. 6d. per cwt.; Beauty of Hebron, 3s. to 4s.; Early Rose, 3s. to 3s. 6d. The late heavy rain is causing disease to spread in some districts. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Aralia Sieboldi, doz.	6 0-18 0	Fuchsias, dozen ...	3 0- 8 0
Asters, per dozen ...	3 0- 6 0	Hydrangea, per doz.	9 0-18 0
Balsams, doz. ...	2 0- 5 0	Lilium lancifolium, per dozen ...	12 0-24 0
Begonias, dozen ...	4 0-12 0	— auratum, doz. ...	12 0-30 0
Calceolarias, dozen	4 0- 9 0	— longifolium, doz.	12 0-24 0
Cockscombs, doz. ...	3 0- 6 0	Lobelias, dozen ...	3 0- 5 0
Cyperus, per dozen .	4 0-12 0	Marguerites, doz. ...	6 0-12 0
Dracæna terminalis, per dozen ...	30 0-60 0	Mignonette, doz. ...	3 0- 6 0
— viridis, per doz.	12 0-24 0	Musk, dozen ...	2 0- 4 0
Erica, various, doz.	12 0-30 0	Nasturtiums, doz. ...	3 0- 5 0
Euonymus, in var., per dozen ...	6 0-18 0	Palms in var., each	2 6-21 0
Evergreens, in var., per dozen ...	6 0-24 0	Pelargoniums, per dozen	6 0-15 0
Ferns, in var., doz.	4 0-18 0	— Ivy-Leafed, doz.	3 0- 4 0
Foliage plants, various, each ...	2 0-10 0	— scarlet, doz. ...	2 0- 4 0
Ficus elastica, each .	1 6- 7 0	Rhodanthe, per doz.	4 0- 6 0
		Solanums, per dozen	6 0-12 0

Cut Flowers.—Average Wholesale Prices.

	s. d. s. d.		s. d. s. d.
Abutilons, 12 bun. ...	2 0- 4 0	Maiden Hair Fern, 12 bun.	4 0- 9 0
Asters, Fr., per bun.	0 9- 1 6	Marguerites, 12 bun.	3 0- 6 0
— English, per bun.	0 4- 0 6	Mignonette, 12 bun.	1 0- 4 0
Bouvardias, per bun.	0 6- 0 9	Pansies, 12 bun. ...	1 0- 2 0
— Brenchleyensis, 12 sprays	1 0- 1 6	Pelargoniums, 12 spr.	0 6- 1 0
Carnations, 12 bun.	3 0- 6 0	— scarlet, 12 spr....	0 3- 0 6
— 12 blooms ...	1 0- 3 0	Pinks (var.), 12 bun.	2 0- 4 0
Chrysanth., 12 blms.	0 6- 3 0	Primulas, dbl., 12 sp.	0 9- 1 0
Coreopsis, 12 bun.	1 0- 3 0	Rhodanthe, 12 bun.	4 0- 6 0
Cornflowers, 12 bun.	1 0- 3 0	Roses, Tea, per doz.	0 6- 2 0
Dahlias, 12 bun. ...	3 0- 6 0	— coloured, dozen.	2 0- 4 0
Eucharis, per dozen	3 0- 6 0	— red, per dozen ...	0 4- 1 0
Gaillardias, 12 bun.	2 0- 4 0	— Safrano, dozen...	0 6- 1 0
Gardenias, 12 blooms	2 0- 4 0	Stephanotis, 12 spr.	2 0- 4 0
Gladioli, 12 bun. ...	6 0-12 0	Stock, 12 bunches ...	3 0- 6 0
— 12 sprays ...	1 0- 1 6	Sunflowers, various, per 12 bun. ...	3 0- 6 0
Heliotropes, 12 spr.	0 6- 1 0	Sweet Sultan, 12 bun.	3 0- 4 0
Lavender, 12 bun. ...	3 6- 6 0	Sweet Peas, 12 bun.	2 0- 6 0
Lilium, various, 12 blooms	1 0- 5 0	Tuberoses, 12 blms....	0 4- 1 0

Orchid bloom in variety, fairly good supply.

SEEDS.

London: *Aug.* 7.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., describe the seed market to-day as of quite a holiday character, but the autumn trade generally is now rapidly developing. Trifolium incarnatum firmly maintains the late advance. This year's crop of French Italian Ryegrass will be large and prices have therefore opened at a low level. Trefoil also will be fairly abundant. White Mustard is in brisk request at the moderate rates current. Rapeseed moves off slowly on former terms. Some good new Rye is now offering. Hemp seed is quiet: Canary seed depressed.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended August 3:—Wheat, 30*s.* 8*d.*; Barley, 19*s.* 11*d.*; Oats, 20*s.* 6*d.* For the corresponding week in 1888:—Wheat, 33*s.* 8*d.*; Barley, 19*s.* 4*d.*; Oats, 18*s.* 6*d.*

FRUITS AND VEGETABLES.

Spitalfields: *Aug.* 7.—English Apples, 5*s.* to 7*s.* per bushel; Pears, 2*s.* 3*d.* to 3*s.* per half-sieve; Gooseberries, 3*s.* 6*d.* to 4*s.* do.; Black Currants, 7*s.* do.; Red Currants, 4*s.* to 4*s.* 6*d.* do.; Raspberries, 24*s.* per cwt.; English Tomatos, 4*s.* 6*d.* to 6*s.* per 12 lb.; foreign Tomatos, 6*d.* to 1*s.* per box; Green Gages, 4*s.* 6*d.* to 5*s.* per half-sieve; Orleans Plums, 5*s.* 6*d.* to 6*s.* 6*d.* do.; Cabbages, 2*s.* to 4*s.* per tally; Vegetable Marrows, 2*s.* to 3*s.* do.; Radishes, 2*s.* to 3*s.* do.; French Beans, 2*s.* 9*d.* to 3*s.* per bushel Scarlet Beans, 2*s.* 3*d.* to 3*s.* 6*d.* do.; Broad Beans, 1*s.* do.; Peas, 1*s.* 6*d.* to 2*s.* 6*d.* do.; do., in sacks, 3*s.* to 4*s.* per sack; Turnips, 2*s.* to 3*s.* per dozen bunches; Carrots 1*s.* 9*d.* to 2*s.* do; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* to 1*s.* 6*d.* do.; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 6*d.* to 10*d.* per score; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Leeks, 1*s.* 6*d.* to 2*s.* per dozen; spring Onions, 1*s.* 9*d.* to 2*s.* per dozen bunches; frame Cucumbers, 1*s.* 6*d.* to 2*s.* per dozen; natural do., 6*d.* to 9*d.* do.; Belgian Onions, 5*s.* 6*d.* to 3*s.* per bag of 110 lb.; Dutch Onions, 2*s.* 6*d.* to 3*s.* 6*d.* do.

Stratford: *Aug.* 6.—Both trade and supply have been good during the past week. Prices:—Cabbages, 2*s.* to 3*s.* per tally; Apples, English, 3*s.* to 6*s.* per bushel; Watercress, 6*d.* per dozen; Pears, English, 4*s.* to 5*s.* 6*d.* per sieve; Tomatos, 9*d.* to 2*s.* per box; Greengages, 5*s.* per flat; Plums, 7*s.* 6*d.* per half-sieve; Cucumbers, English, 3*s.* 6*d.* to 5*s.* per dozen; do., Dutch, 9*d.* to 1*s.* 6*d.* do.,; Broad Beans, 2*s.* 6*d.* to 3*s.* per bag.

POTATOS.

Borough and Spitalfields, *Aug.* 6. — Fresh supplies not heavy, with good stocks on hand, and a slow demand. Early Rose, 50*s.* to 70*s.*; Regents, 65*s.* to 80*s.*; Myatt's, 60*s.* to 100*s.*; Hebrons, 55*s.* to 90*s.* per ton.

Spitalfields: *Aug.* 7.—Quotations:—Magnums, 50*s.* to 60*s.*; Myatt's kidneys, 60*s.* to 70*s.*; Regents, 70*s.* to 80*s.*; Hebrons, 60*s.* to 70*s.*; Early Rose, 55*s.* to 65*s.* per ton.

Stratford: *Aug.* 6.—Quotations:—Early Rose, 40*s.* to 55*s.*; Hebrons, 50*s.* to 70*s.*; Regents, 50*s.* to 70*s.*; Kidneys, 60*s.* to 70*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime old Clover, 120*s.* to 144*s.*; new, 85*s.* to 116*s.*; inferior, 45*s.* to 75*s.*; best hay, 78*s.* to 108*s.*; inferior, 20*s.* to 50*s.*; straw, 24*s.* to 40*s.* per load.

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Instruction in Practical Gardening.—Can any of our correspondents inform "Hortus" of any place in Great Britain where a lady could get instruction in practical Gardening? Age twenty-five. Knows something of vegetable growing; strong, and fond of out-of-door work. If there is no such place in England, are ladies admitted to any of the Continental schools of horticulture, or to the Michigan Agricultural College, U.S.A.?

NOTICES TO CORRESPONDENTS.

Apple Trees Damaged: *A. E. H.* Probably the work of the Leopard Moth.

Books: *J. G.* The well-known works of Bentham, of Hooker, and of Babington (latest editions), the volumes of the *Journal of Botany*. See also the list just published by Geo. Bell & Sons, which will give you in the form of an alphabetical list all the information you seem to require.

Carnation Lady Middleton: *W. Y.* A handsome flower of good size, and of the general appearance of Souvenir de la Malmaison, of which it is a sport, but of darker colour, marbled with rosy flakes and spots.

Chrysanthemums: *W. K. G.* Your plants appear to have been affected with some insect; but, in the absence of further information, we cannot say what.

Correction. — On p. 139, col. *c*, of last week's issue, it is stated that "1 foot 16 inches" should be allowed between rows of Ellam's Cabbage. This is an error, and should read "1 foot 6 inches."

CYPRIPEDIUM STONEI VAR.: *G. W. C.* A good flower, having the dorsal sepal more developed than in the ordinary form.

GARDENERS' HOLIDAYS: *J. B.* We cannot undertake to advise you where to go in your three days. You should see Kew, some of the parks, and a few of the nurseries.

NAMES OF FRUIT: *E. H.* Your specimens were again much bruised. Cotton wool should never be used for packing. It is impossible to name certain Peaches with certainty in the absence of foliage, &c. No. 1 is Noblesse; 2, Grosse Mignonne, probably; 3, Royal George, probably.

NAMES OF PLANTS: *J. K.* 1, Cannot name; 2, Rosa lucida, fl.-pl.; 3, Adiantum Mariesii.—*J. C.* 1, Euphorbia exigua; 2, Matricaria inodora; 3, Crucibulum vulgare.—*E. C. C. D.* Lysimachia vulgaris.—*T. Turner.* 1, Specimen insufficient; 2, Atriplex angustifolia; 3, Helminthia echioides; 4, Sisymbrium sophia; 5, Scandix pecten; 6, Lepidium campestre.—*E. D. L.* Calamintha patavina.—*Watkins & Simson.* Echinops ritro, and Trifolium angustifolium.—*W. S. C. P.* 1, Gnaphalium sylvaticum; 2, Crepis alpina; 3, Potentilla hirta; 4, Phyteuma canescens; 5, Samolus repens; 6, not recognised.—*Mungo Chapman.* 1, Spiræa japonica; 2, S. salicifolia; 3, Santolina pinnata; 4, S. squarrosa; 5, Veronica longifolia; 6, Geranium nodosum.—*Camjee.* Oncidium prætextum; Dendrobium densiflorum—both ordinary forms.—*W. H.* Odontoglossum vexillarium var. splendens—fine form.—*A. C.* 1, Stachys lanata; 2, Aloe verrucosa; 3, A. lingua; 4, Cotyledon species.—*W. G.* Apparently Cichorium Intybus, but it may be the garden Endive run back.—*C. W. K.* Rodriguesia planifolia.—*A. Z.* Specimen insufficient.

PEACHES, &C.: *G. S.* There is something wrong with the roots; too much wet about. We cannot say more in the absence of details.

PEA-NUTS: *R. W. L.* These are the pods of a tropical Pulse, ripened beneath the surface of the ground. The seeds contain a large quantity of oil used by soap-makers and others. The nuts are also used as cattle-food. On account of their agreeable flavour they are eaten by children under the name of Monkey-nuts, or Ground-nuts.

PEAR: *G. & S.* The fruits sent are those of Doyenné d'Eté; it may be a seedling, but is not a novelty.

POTATOS WITHIN POTATOS: *Correspondent.* Illustrations of this have frequently been given in our columns. In your case it appears as if the tubers had been cut open, as by the edge of the hoe, and the young tubers have developed from the edge of the wound, just within the rind, in the same way that new bulbs are produced by slicing or scooping the base of old Hyacinth bulbs.

TOBACCO CURING: *W. Parks.* You must refer to some manual on the subject, as it would take too much space to reply here. See *English Tobacco Culture*, by E. J. Beale (London: E. Marlborough & Co.), price 5*s*. What will the Excise officers say?

TOMATOS DISEASED: *J. F. Parker.* Your plants are attacked by the black spot fungus, Cladosporium lycopersici, described and illustrated on p. 408 of our issue for October 1, 1887.

CATALOGUES RECEIVED.

VILMORIN-ANDRIEUX & Co., 4, Quai de la Mégisserie, Paris—Bulbs and Strawberries.

JAMES DICKSON & SONS, 32, Hanover Street, Edinburgh—Dutch Flower Roots.

COOPER, TABER & Co. (Limited), 90, Southwark Street, London, S.E.—Bulbs.

J. R. PEARSON & SONS, Chilwell Nurseries, Nottingham—Dutch Bulbs.

VAN VELSEN BROS., Wagenweg No. 5, Haarlem, Holland—General Catalogue of Bulbs and Herbaceous Plants.

W. CUTBUSH & SONS, Highgate Nurseries, London, N.—Hyacinths, Tulips, &c.

HAAGE & SCHMIDT, Erfurt, Germany—Flower Roots and Bulbs.

COMMUNICATIONS RECEIVED.—W. N.—W. G. S.—D. B. L., Buffalo.—W. S.—H. E.—A. C. M.—S. H.—C. W.—H. W. W.—J. W.—R. W. K.—W. H.—F. W. B.—J. B., Chiswick.—Hardy.—T. W. G.—J. T.—A. V.—J. D.—J. A.—L. W., Ontario.—J. H., Trinidad.—G. M. W., Natal.—G. C. B.—E. J.—P. W.—Hortus.—J. W. O.—Dr. Wilson.—J. S.—R. A. R.—T. K. A. (thanks).—F. R.—A. O.—W. B. H.—W. R., Streatham Hill.

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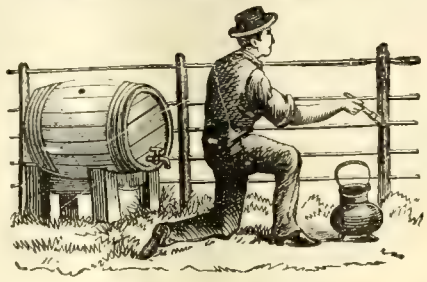
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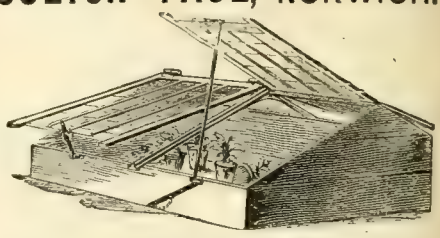
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16×12		20×16	
18×12		22×16	
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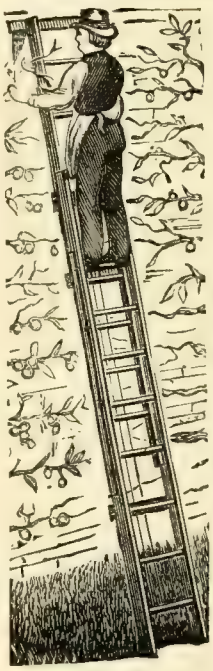


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3 " "	12 "	by 6 "		6 0 0
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5 " "	20 "	by 6 "		9 5 0
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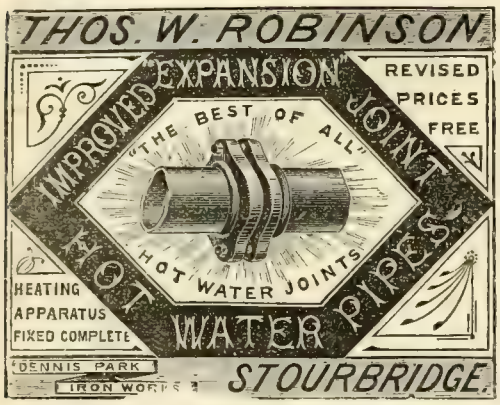
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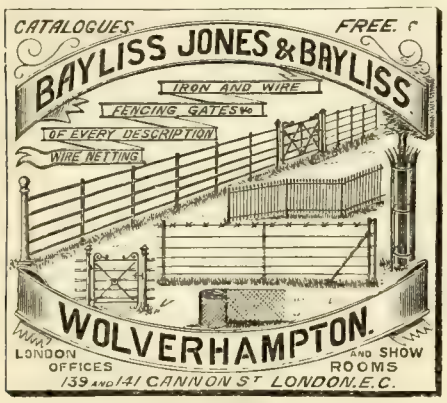
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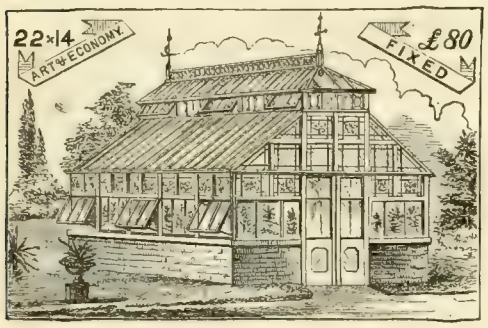
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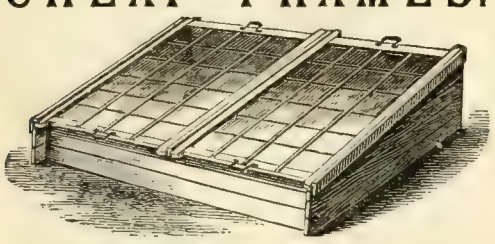


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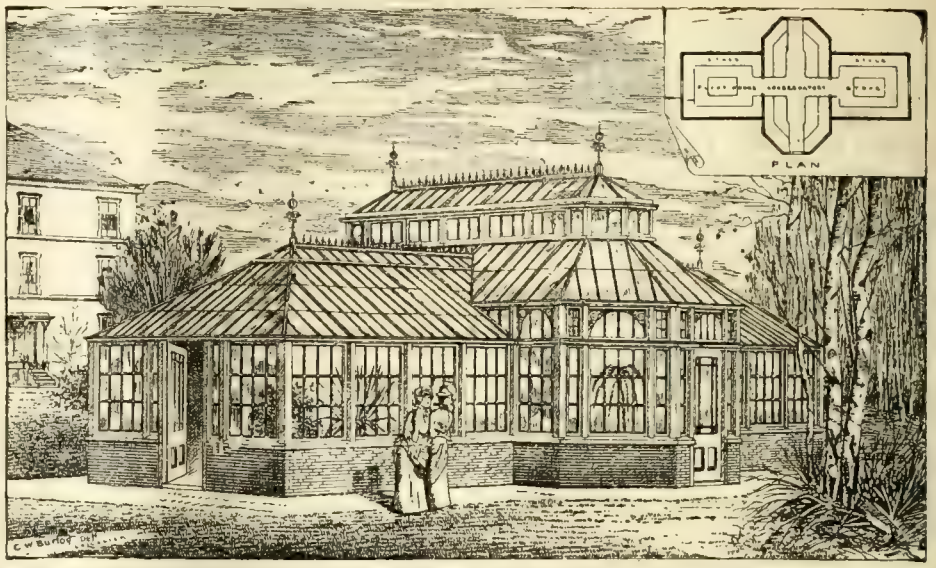
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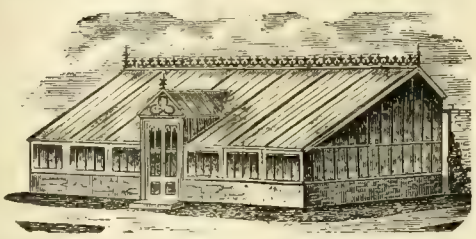
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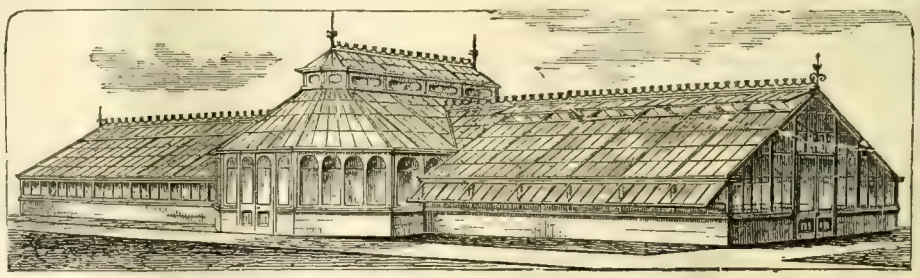


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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden in the said County.—SATURDAY, August 10, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2538.

No. 138.—Vol. VI. {Third Series.} SATURDAY, AUGUST 17, 1889. [Regt. as a Newspaper. {PRICE 3d. Post-Free, 3½d.

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Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

BARR'S CATALOGUES
Free on application.
List of Autumn-flowering Crocus and Meadow Saffron.
Daffodil Catalogue, Illustrated, contains the only complete list of these beautiful hardy spring flowers.
Bulb Catalogue of cheap, rare, beautiful hardy bulbs, &c., for all seasons.
Plant Catalogue of hardy, free-flowering, beautiful perennials for flower borders, and as cut flowers.
Seed CATALOGUE, ready 1st January, 1890.
BARR AND SON, 12, King Street, Covent Garden, W.C.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey, and Flower Market, Covent Garden, W.C.

LILIES OF THE VALLEY! English-grown!
The best for early forcing, finest large flowers, and superior in every respect to German crowns. Price per 1000, 10,000, to 100,000 on application.
T. JANNOCH, Lily of the Valley Grower by Special Appointment to H.R.H. The Prince of Wales, Dersingham, King's Lynn, Norfolk.

GENISTAS.—For Sale, a few thousands, in 3-inch pots, at 9s. per 100; fine bushy plants, in 40-pots, 5s. per dozen. Cash with order to be made payable at High Street, Leyton.
T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.

LILY OF THE VALLEY.
First-class German flowering Crowns.
Any quantity.
H. DAMMANN, Jun.,
Breslau.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. £1 per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.

LAXTON'S NEW STRAWBERRIES
Must be grown by all.
Descriptive LIST, with prices of "Latest of All" (new, 1889), "Noble," "A. F. Barron," "Commander," &c., now ready. Six First-class Certificates.
THOMAS LAXTON, Seed Grower, Bedford.

STRAWBERRIES — STRAWBERRIES. — A splendid stock of the best and choicest varieties, true to name. Inspection invited. Descriptive LIST free.
JOHN LAING AND SONS, Forest Hill Nurseries, London, S.E.

NICOTINE SOAP.—An effectual eradicator of all insect pests affecting plants, without injury to foliage. Jars, 1s. 6d., 3s., 5s. 6d.; Tins, 15s. 6d., 25s., 95s.
All Seedsmen and Florists.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

DICKSON'S IMPROVED MUSHROOM SPAWN, most superior, now reduced to 5s. per bushel of 14 cakes. Circular with Cultural Notes and List of Testimonials post-free on application.
DICKSONS (*Limited*), The Royal Seed Warehouse, CHESTER.

SALES BY AUCTION.

Wednesday and Saturday Next.
FIRST-CLASS DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, August 21 and 24, at half-past 12 o'Clock precisely each day, extensive consignments of choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, SCILLAS, and other BULBS, just arrived from well-known farms in Holland, lotted to suit the Trade and other Large Buyers.

On view morning of Sale and Catalogues had.

N.B.—After above dates the Sales will take place every MONDAY, WEDNESDAY, and SATURDAY, as usual.

Dutch Bulbs.—Special Trade Auctions.
MONDAY and THURSDAY NEXT.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on MONDAY, August 19, THURSDAY, August 22; also on MONDAY, August 26, and THURSDAY, August 29, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS from Holland, especially lotted to suit the Trade and other Large Buyers.

On view morning of Sale, and Catalogues had.

Friday Next.
SACCOLABIUM CŒLESTE.
CYPRIPEDIUM CALLOSUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, August 23, at half-past 12 o'Clock, 50 SACCOLABIUM CŒLESTE and 100 CYPRIPEDIUM CALLOSUM, fine plants.

The Sale will also include a large quantity of IMPORTED and ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Orchids in Flower.—Friday, August 30.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER, will take place as above, for which they will be glad to RECEIVE NOTICE OF ENTRIES on or before SATURDAY NEXT.

Sunningdale, near Bagshot.

GREAT CLEARANCE SALE of NURSERY STOCK, by order of Mr. C. Noble, who has unexpectedly received from St. John's College, Cambridge, peremptory notice to quit all lands held under them.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. C. Noble to SELL by AUCTION, without reserve, on the Premises, The Nurseries, Sunningdale, on MONDAY, October 14, and several following days, about 30 acres of thriving young NURSERY STOCK, which must be cleared, and the greater portion of which has been planted within two years, presenting a grand opportunity to Nurserymen and other Large Consumers to secure large quantities of useful stock at auction prices.

Further particulars will shortly appear.

American Nurseries, Bagshot, Surrey.
PRELIMINARY NOTICE.

EXTENSIVE SALE of SURPLUS NURSERY STOCK. Highly important to the Trade and gentlemen engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Waterer & Sons to SELL by AUCTION, on the Premises, the American Nurseries, Bagshot, Surrey, EARLY in NOVEMBER, an unusually large quantity of attractive NURSERY STOCK, in grand condition for removal.

Full particulars will be announced in due course.

Great Annual Trade Sales of
GREENHOUSE and other PLANTS.
Important to Nurserymen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS beg to announce that the GREAT ANNUAL TRADE SALES have been fixed as follows:—

WEDNESDAY, SEPT. 11.—At the NURSERIES, Swanley Junction, Kent, by order of Mr. P. Ladds.

THURSDAY, SEPT. 12.—At the LONGLANDS NURSERIES, Sidcup, by order of Messrs. Gregory & Evans.

MONDAY, SEPT. 16.—At the DYSON'S LANE NURSERY, Upper Edmonton, by order of Mr. H. B. May.

TUESDAY, SEPT. 17.—At the BURNT ASH LANE NURSERIES, Lee, S.E., by order of Messrs. B. Maller & Sons.

WEDNESDAY, SEPT. 18.—At the LEA BRIDGE NURSERIES, Leyton, E., by order of Mr. John Fraser.

THURSDAY, SEPT. 19.—At the BRIMSDOWN NURSERY, Enfield Highway, by order of Mr. John Maller.

FRIDAY, SEPT. 20.—SPECIAL TRADE SALE of ORCHIDS, at PROTHEROE AND MORRIS' ROOMS.

Full particulars will appear in due course.

The Glazed and Iron Erection of the large Conservatory, adjoining the Albert Hall, South Kensington.

MESSRS. HORNE, SON, AND EVERSFIELD are instructed by the Royal Commissioners of the Exhibition of 1851, to SELL by AUCTION, on TUESDAY, August 20 at 1 o'Clock, on the Premises,

The MATERIALS of the CONSERVATORY,

and which is well adapted for a Winter Garden, or for any Public Park or Pleasure Gardens, comprising the Iron Girders, Bearers, and Columns, and the capital Glazing, mostly iron-framed.

May be viewed. Catalogues had on the Premises, and of HORNE, SON, AND EVERSFIELD, 17, Great George Street, S.W., and 84, Basinghall Street, E.C.

Freehold Building and Market-garden Ground.
By order of the Mortgagee, Mitcham.

MESSRS. ROBERT W. FULLER, MOON AND FULLER, will SELL by AUCTION, at the Greyhound Hotel, Croydon, on THURSDAY, August 29, at 5 for 6 o'Clock, 7¼ acres of BUILDING, ORCHARD, and MARKET-GARDEN GROUND, situate at Upper Mitcham.—Particulars of Messrs. WEST, KING, ADAMS AND CO., Solicitors, 66, Cannon St., E.C.; and of the Auctioneers, Croydon, Reigate, and Epsom.

WANTED TO PURCHASE, a SEED BUSINESS; good going; with or without Small Nursery. Or a PARTNERSHIP in the same would be entertained. Full particulars to
A. D. I., Messrs. Hurst & Son, Seedsmen, Houndsditch, E.

Florists.

TO BE SOLD, a Bargain, the LEASE, &c., of Two Old-established FLORIST'S BUSINESSES, in the neighbourhood of Notting Hill. First-class positions. Price £350.
Full particulars at 10, The Mall, Notting Hill Gate, W.

TO BE SOLD, a bargain!!! A grand old NURSERY, in the West of England. Established upwards of a century, containing about 20 acres of rich fertile Soil, enjoying special climatic advantages, splendid young Stock, nearly 40,000 feet super of Glass, Trade Buildings, large and commodious Dwelling House. Held on lease. Incoming £3500.
Apply for particulars to Messrs. PROTHEROE AND MORRIS, Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

FOR SALE, a NURSERY, SEEDSMAN and FLORIST'S BUSINESS, situate near Crystal Palace. Established thirty years. House containing five rooms, large frontage and Shop premises. Good connection, and respectable Jobbing Trade. Lease 80 years, ground rent £10. Proprietor retiring from business. Price all at £1000.
Address E. T., 4, Gipsy Hill, Norwood, S.E.

FOR SALE, a FLORIST and NURSERY BUSINESS. About 20 Glass-houses, Forcing Frames, Vans, Horse, and all appliances; with Growing Stock. Lease about 30 years. £70 per annum, including Shop. Owner not in the business.—Apply to MANAGER, on the Premises, 262A, Clapham Road, S.E.; or to F. E. BEST, 10, Throgmorton Avenue, Throgmorton Street, London, E.C.

TO BE DISPOSED OF, a Small NURSERY, about 4½ acres, with Glasshouses, Frames, Stock, &c.; held at a low rent, in a good rising suburb, N., where a good Jobbing Trade can be done, close to three large cemeteries, 6 miles from Covent Garden, close to Railway Station. Price moderate. For particulars, apply,
C. J. T., 41, Wellington Street, Strand, W.C.

TO BE DISPOSED OF, a FLORIST, SEED, and FRUITERER'S BUSINESS, in a large Town, in the County of Hampshire. Shop well situated. Good connection. Amount required, about £1100.
Full particulars can be obtained of DAVIS AND BENNETT, 25, Portland Street, Southampton.

Extensive and desirable Nursery Business for Sale,
at Annan, Dumfriesshire.

THERE IS FOR SALE, by Private Bargain, as a going concern, the Old-established NURSERY BUSINESS, so long and successfully carried on, under the firm of Messrs. John Palmer & Son, by the late William Palmer, Nurseryman, Annan.

The Nurseries extend to 5¼ acres or thereby, 8 acres being held on lease from Mrs. Clarke of Galabanks, which expires at Candlemas, 1890, and 46 acres belonging to the trustees of the late Mr. Palmer, with whom arrangements could be made for a Lease on very moderate terms.

The Nurseries are in the highest state of cultivation, and the Stock is exceptionally healthy and good. It consists of seedling and transplanted Forest Trees; seedling and bedding Shrubs of all sorts; and a fine collection of good growing Coniferæ; with ornamental Trees, and Roses of the finest and most varied sorts. There is also a fine and varied stock of Fruit and other Trees, all in excellent growth and in great demand. In connection with the Nurseries, there are Sheds and Grounds set apart and completely fitted up, for propagating and other purposes.

The Nurseries are situated close to the Station of Annan, on the main line of the Glasgow and South-Western Railway; and also near to the Station, on the line of the Caledonian Railway Company.

This excellent situation affords a very ready and advantageous outlet to all the English and Scotch Markets, and is one of the great advantages which these Nurseries possess. There is also a convenient outlet into Cumberland and the West Coast, by the Solway Junction Railway.

This is a most favourable opportunity for any party acquiring, on most advantageous terms, such an excellent Nursery Stock and Business, which has for so long held a prominent place among the Nurseries of Scotland.

Application for any further particulars may be made to Messrs. BROWN AND LITTLE, British Linen Company Bank, Annan, who will arrange for inspection of the Nurseries.

Channel Islands.

TO LET, Highfield, St. Saviour's, Jersey, delightful RESIDENCE, with 15 Green and Hot Houses, in full bearing.
Particulars, Mrs. BRAYN, on Premises.

TO BE LET, 1 to 10 acres of GRASS LAND, suitabe for Nurserymen and others, on Lease for 7, 14, or 21 years. Rent £12 per acre, with the option of Purchase of the Freehold within the first 7 years. No tithe or land tax. Near the main road, Enfield Highway; about 9 miles from London.
Apply, I. MOORE, 59, Bishopsgate Street Within, E.C.

TO BELET, a SHOP, HOUSE, and STABLE, in High Street, Walthamstow. First-class opening for Fruiterer and Greengrocer. Two 45 feet Greenhouses. May be rented if desired.
Apply, I. GAYDON, High Street, Walthamstow, Essex.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

LANDSCAPE GARDENING. — Designs Prepared and Work Superintended in any part of the country. For terms, apply to
THOMAS H. MAWSON, Landscape Gardener, Windermere.

Landscape Gardening.

R. COWLES, Certificated Royal Botanic Gardens, Kew, having great experience in the above work, is able to Advise, Plan, and Estimate for any Lady or Gentleman about to Lay-out a New Estate, or Improve existing Grounds. Extensive knowledge of all the best Fruits, Shrubs, Trees, &c.—Address, R. COWLES, Landscape Gardener, North Finchley, N.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Make SPECIALTIES of the following:—

ORCHIDS, of which they have an immense stock, and they are constantly receiving fresh importations from various parts of the world.

ORCHID BASKETS, made of the best Teak and Copper Wire.

COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.

ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.

TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.

FERNS, a large and fine stock of the leading kinds.

GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.

ROMAN HYACINTHS, 1st size, 5 to 6½ inches circumference, 17*s.* 6*d.* p. 100; 2nd size, 15*s.* p. 100; 3rd size, 12*s.* 6*d.* p. 100.

The Company offer all the above at the lowest possible prices. New Illustrated LIST, post-free, on application to

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.

Strawberries.

CHARLES TURNER can supply all the leading varieties, extra strong, in small pots. LIST and prices on application.
The Royal Nurseries, Slough.

BEGONIAS.—Several thousands of our superb strain must be disposed of, owing to want of room. Grand doubles, in and showing bloom, fit to pot on, 7*s.* 6*d.* and 10*s.* per doz., £3 10*s.* per 100; unbloomed ditto, from 4*s.* per doz., 30*s.* per 100. Singles, from 2*s.* per doz., 15*s.* per 100.
Cash with order to the
MANAGER, George Lane Nursery, Lewisham, S.E.

SPECIAL OFFER of FERNS for CASH.—Extra strong, in thumbs, for immediate Potting, in the following varieties:—Pteris cretica, tremula cretica cristata, alba lineata, astata, serrulata cristata compacta, A. cuneatum, and an extra fine lot of Lomaria gibba and Polypodium aureum. Also a fine lot, in 48's, Pteris cretica, cretica major, cretica cristata, serrulata cristata compacta, A. cuneatum, Polypodium, Dicksonia antarctica, Grevillia robusta and cyperus.
Price for thumbs per 100 or 1000 and 48's per 100 on application.
An inspection invited by
R. PENGELLY, Dyson's Lane, Upper Edmonton.

SUNFLOWERS, *Double Perennial. Two Varieties.*—The numerous Customers throughout the British Isles, that had from Cork the "Double Quilled form" now in flower, should at once state through the Press the gross imposition that has been practised on them by me, in sending them "as new," a plant that was so *exceedingly common* in England. A note from Chester, Kew, York, Glasnevin, Langport, and Tottenham, through the Press, should certainly stamp me as an imposter, and it will have the effect of frustrating the further sale of such a worthless plant. A Box of magnificent blooms by post for six stamps, will be in further condemnation of
WM. BAYLOR HARTLAND, Seedsman, Cork.

AMAZONIAN ORCHIDS. — Collections of 1 dozen good-sized flowering plants, established generally on blocks. Cattleyas superba splendens, El Dorado (in variety), luteola, Coryanthes, Scuticaria, Galeandras, Paphinias, Epidendrum, Oncidium, Stanhopea eburnea, Rodriguezia, Schomburgkia, Brassias, Brasavolas, Catasetums, Sobralias, Gongoras.
Delivered at Liverpool at steamer for £6 per dozen. Freight and packing free. All orders must contain draft for amount on Pará Branch of English Bank of Rio de Janeiro (London Office, 2A, Moorgate Street, E.C.), to which Bank reference is made.
C. E. HERBERT AND CO., Pará, Brazil.
Caixa no correio 151.

The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5*s.*, post-free 5*s.* 6*d.*
A. F. BARRON, Royal Horticultural Society, Chiswick.

To Orchid Growers.

SPHAGNUM MOSS. — Fresh and clean. Sent at once, 5*s.* per sack.
GEORGE CARRADICE, Monument Place, Kendal.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18*s.* to 36*s.* per dozen.

Descriptive List free on application.

RICHARD SMITH & CO.,

Nurserymen and Seed Merchants,
WORCESTER.

PRIMULAS and CINERARIAS, 1*s.* 6*d.* doz. Herbaceous CALCEOLARIAS, of an extra superb strain, of our own saving, large flowers, rich and varied colours, beautiful form, 2*s.* per dozen; Seed, 1*s.* 6*d.*, 2*s.* 6*d.* per packet. Good Plants ready for potting.

BOUVARDIAS, fine plants, in 2½ pots, ready for potting on for winter flowering, in good and varied sorts, to name, 3*s.* per doz.

CYCLAMEN, of an extra fine strain, of our own saving, good plants for potting on, 3*s.* and 4*s.* per dozen. The chief merit of this strain is the vigour of growth, varied colours, and freedom.

GERANIUMS, for winter flowering, strong young plants, ready to pot now into large pots to establish for blooming in October and November, finest named kinds, 4*s.* and 6*s.* per doz., double or single.

CATALOGUE of all you want for a Garden, free for 3 stamps.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

STRAWBERRIES.—Leading kinds, in 3½-inch pots, for immediate Planting or Potting on for Forcing. Send for LIST.

FRANCIS R. KINGHORN, Sheen Nurseries, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, CYCLAMEN, BOUVARDIAS, ADIANTUM CUNEATUM, and other Ferns, GARDENIAS, STEPHANOTIS, FICUS ELASTICA, CROTONS, GREVILLEAS, TEA ROSES (in pots), BORONIA MEGASTIGMA, VINES (in pots), &c. An inspection is invited.

Trade CATALOGUES forwarded on application.

The ANNUAL SALE by AUCTION will be held on TUESDAY, September 17.

Burnt Ash Lane Nurseries, Lee, S.E.

Strawberries, from the Garden of England.

GEORGE BUNYARD AND CO. can now offer very fine Runners and Plants in small pots of all the finest kinds. LIST free.

Old Nurseries, Maidstone.

FOR SALE, a COLLECTION of ORCHIDS, about 86 healthy Established Plants, containing the following kinds: Aërides Lobbi, Calanthe Veitchi, Cymbidium aloefolium, Cypripedium insigne, C. venustum, Dendrobium densiflorum, D. fimbriatum, D. heterocarpum, D. nobile, D. Pierardi, D. Wardianum, Epidendrum vitellinum majus, Lycaste Skinneri, Masdevallia tovarensis, Oncidium flexuosum, Stanhopea tigrina; also STOVE PLANTS, consisting of Acalypha, Anthurium, Asparagus, Begonia, Croton, Curculigo, Cyperus, Dracæna, Eucharis, Hibiscus, Pancratium, Strelitzia, &c., and eighteen young PINES. Apply to

G. JUPP, Gardener, Brantridge Park, Balcombe, Sussex.

---

16 VARIETIES of STRAWBERRIES, which R. Gilbert considers the cream. They include all the modern varieties, but the good old Standards are not forgotten. In pots for forcing, and ordinary hand layers.

Send for R. G.'s STRAWBERRY LIST, where all are described and priced, with Hints upon Culture. Warranted true to name.

R. GILBERT, High Park, Stamford.

BULBS — BULBS — BULBS.—The cheapest offer of first-class Bulbs ever submitted to the Public, the finest produced in Holland (selected by us on the spot) being offered at Auction Prices. Many people last year doubted the possibility of really FIRST-RATE Bulbs, true to name, being offered at the rates we quoted, and only gave us half their orders in order to compare the blooms with those produced from bulbs supplied by other firms. Our Bulbs stood the test in every case, and we have received many Testimonials of a most flattering character. CATALOGUES now ready.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

W. GORDON, Importer of ORCHIDS.

AN IMMENSE STOCK of recently imported plants compels a SALE of the ESTABLISHED PLANTS to make room. They have not yet flowered, but are all flowering plants, and must be sold at a GREAT SACRIFICE. Very valuable varieties are certainly to be obtained, and great bargains. See Public Journals for high prices recently obtained. The SPECIAL OFFER affords a PAYING INVESTMENT to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the Public and Trade. GOOD ESTABLISHED PLANTS:—

25 in	25 species and varieties ...	...	£3	3	0
50 in	50 " " " ...	...	5	5	0
100 in	100 " " " ...	...	10	10	0

CATALOGUE of the above large stock held on application to

W. GORDON,

The Nurseries, Amyand Park Road, Twickenham, Middlesex.

STRAWBERRY PLANTS.—All best represented, true to name, and the plants unique both in variety and price. Packed *à la* Gilbert. Send for CATALOGUE.

R. GILBERT, High Park, Stamford.

ROSES IN POTS. TEAS and NOISETTES, of the finest varieties for indoor blooming, good plants, in 5-inch pots, put for preparing for winter flowers, 15*s.* per dozen, in 12 varieties if required. Stronger plants in 6½-inch pots, 24*s.*, 30*s.* per dozen.

Fine H.P. ROSES, established in pots, very fine either to pot or for forcing next spring, or for planting out in beds now, 18*s.* per dozen, worth 30*s.*

CLEMATIS, in the finest sorts, all named, 9*s.* and 15*s.* per doz.

Fine Hardy CLIMBERS, for Trellises, Arbours, Rockeries, all good plants, in pots, to plant now, 9*s.* and 12*s.* per dozen.

12 Lovely Variegated IVIES, all with beautiful foliage, 12*s.*

Send for CATALOGUE of all you want for a Garden free for 3 stamps.

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

MISS JOLLIFFE CARNATION.—I can now supply rooted Cuttings of this favourite variety at 2*s.* per dozen, or 12*s.* 6*d.* per 100.

Also this year's Spores of PTRIS TREMULA and P. SERELATA MAXIMA, 6*d.* per packet.

W. CALLINGHAM, Princes Square Nursery, Kennington, S.E.

FOR SALE, 3 handsome Specimen HEATHS. 1 Erica McNabbiana, 2 feet 6 inches by 3 feet 6 inches; 1 Erica Turnbullii, 2 feet 6 inches by 3 feet 6 inches; 1 Erica Jacksonii, 3 feet 6 inches by 2 feet. In fine condition, coming into flower.—Address, Blair Park, Coatbridge, N.B.

Dutch Bulbs Direct from the Growers.

ANT. ROOZEN AND SON, of Overveen, Haarlem, beg to state that their CATALOGUE for 1889, containing details of their immense Collections of New, Rare, and fine Bulbs and Plants (94 pages in English) is now ready, and will, as usual, be sent post-free, on application to themselves or their Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C.

SEEDS FOR PRESENT SOWING.

CABBAGE.

BARNES' NORWICH MARKET, the earliest, 1*s.* per ounce, 7*s.* 6*d.* per pound.

BARNES' GREAT EASTERN, the largest, 1*s.* per ounce, 7*s.* 6*d.* per pound.

ONION.

BARNES' GIANT ROCCA, the mildest, 9*d.* per ounce, 6*s.* per pound.

BARNES' WHITE MAMMOTH, the best white, 6*d.* per packet, 1*s.* 6*d.* per ounce, 12*s.* per pound.

The best quality only. Post-free. Price LISTS Gratis to all applicants.

J. E. BARNES (16 years Managing Assistant with DANIELS BROS.),

THE "GREAT EASTERN" SEED STORES,

9, EXCHANGE STREET, NORWICH.

STRAWBERRY PLANTS. VIGOROUS, Hand-laid Runners and Plants in pots. New and best varieties.

Catalogue on application.

DICKSONS, THE NURSERIES, **CHESTER.**

(LIMITED).

TRADE OFFER OF PALMS, ETC.

ARECA LUTES.	...	...	...	6*s.*	0*d.*	to	24*s.*	0*d.* p. doz.
" BAUERII	...	...	...	30	0	"	60	0 "
" SANDERII	...	...	...	24	0	"	60	0 "
CORYPHA AUS.	...	...	...	18	0	"	30	0 "
CHAMÆROPS E.	...	...	...	24	0	"	15	0 each.
EUTERPE EDULIS	...	...	...	6	0	"	24	0 "
GEONOMA GRAC.	...	...	...	9	0	"	60	0 "
KENTIA BEL.	...	...	...	9	0	"	60	0 "
" FOST.	...	...	...	9	0	"	60	0 "
LATANIA BORB.	...	...	...	6	0	"	60	0 "
PHŒNIX REC.	...	...	...	6	0	"	60	0 "
" RUPICOLA	...	...	...	12	0	"	60	0 "

DRACÆNAS, OPHIOPOGON, FICUS, PANDANUS VEITCHII.

Prices for larger Plants on application. Inspection invited.

WILLIAM ICETON, Putney Park Lane, Putney, S.W.; and Flower Market, Covent Garden.

LILY OF THE VALLEY

(CONVALLARIA MAJALIS).

Selected Crowns or Pips for Winter Forcing.

Per 1000, 30*s.*, free on board, Hamburg or Bremen.

Terms: Payment, one-third of the amount by order, two-thirds on bill of lading.

LAUX BROTHERS, HAAN (Germany).

STRAWBERRIES.

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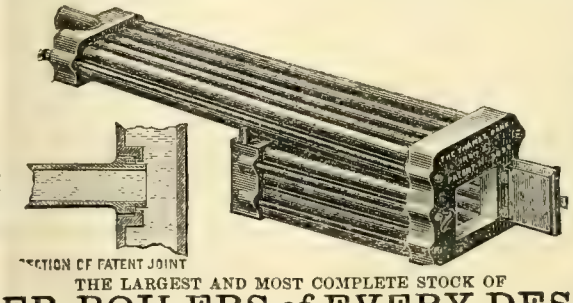
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TO THE

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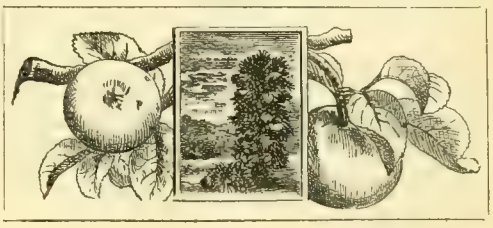
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 17, 1889.

THE DUKERIES.

THE members of the Royal Scottish Arboricultural Society selected the interesting region of Sherwood Forest for their annual excursion this year. The contingent numbering thirty-six from Scotland, started from Edinburgh at 10.40 P.M. on the 6th inst., for Worksop, where on the following morning they were met by some forty members from various parts of England and Wales.

Before breakfast the party viewed the quaint pretty town of Worksop, finding much that was interesting in the older buildings, especially the Priory or parish church, and the remains of the ancient priory beside it. Among other features that excited the interest of many, was a remarkably luxuriant plant of Clematis vitalba, which covered with its rich green drapery the whole front of a large three-storied house and shop; and also an umbrella-like projection in wire, which overhung the doorway of the shop, window-boxes and pots in the windows of the second storey, supported Clematis Jackmannii, scarlet Pelargoniums, and Tropæolums of the Lobbianum type, which being in flower, lent a charming effect to the rich green festoons of the Traveller's Joy, with which they were freely intermingled. The most notable point in connection with the latter, however, was the age of the plant. It was six years old, but had been planted in its present position only three years. Owing to the foundations and drains of the building, it could not be planted nearer the wall than a point several feet away, and under the flag-stones of the footway. This necessitated the growing of the plant in a pot for several seasons, in order to develop a woody stem of sufficient length and substance, to extend from the point at which it was practicable to plant the roots under the footway and up the wall of the house some distance. Several abortive attempts had been made by the proprietor with younger plants, prior to hitting on the scheme of growing on a plant for some time in preparation for the peculiar and only position in which he could

possibly establish the desired ornament for the front of his premises. The walls of the workshops and stores behind the shop and dwelling-house, and a trellis-covered iron staircase, are festooned with the growth of another plant of the same species of Clematis intermingled with Ampelopsis. This was perhaps hardly less remarkable than the other, as a triumph over exceptional difficulties in planting. A narrow path or passage, bounded on each side by walls about 20 feet high, making a dark, sunless, draughty position; yet the plant covered about 80 feet by 20 feet of the wall on one side, and had sent out sprays of 10 or 12 feet in length this season.

Immediately after breakfast the party, seated in six large brakes, drove to

Clumber,

the seat of the Duke of Newcastle, under the guidance of Mr. Tomlinson, the forester on the estate. The drive from Worksop to the nearest point of Clumber Park gave to the majority of the excursionists their first view of the splendour and the vast extent of the sylvan beauties of the Dukeries.

Leaving Worksop Manor and Welbeck on the right, the party entered Clumber by Trueman's Lodge, and found themselves immediately engaged in viewing plantations, young and old trees, interspersed among which were not a few hoary giant Oaks, remains of the ancient Sherwood Forest, which in former times extending from Nottingham to Sheffield, included the famous district of the Dukeries.

Clumber Park comprises about 4000 acres, with a circumference of about 11 miles, and was, till about 200 years ago, open forest land. Now it is a richly wooded demesne, abounding in magnificent woods of Oak, Beech, Spanish Chestnut, Larch, Scotch Pine, Spruce, and other hardy trees, intermixed or separately in the respective plantations. The Park is intersected with roads, spacious drives, and avenues, which open up, as they are traversed, many beautiful woodland scenes and vistas, commanding interesting views in the Park and more distant landscape.

The route followed brought the party through some of the oldest plantations to the house. On the way some measurements were taken of the more remarkable trees. The largest Beech measured was 10 feet 2 inches girth at 5 feet from the ground; the largest Larch met with, which was near the mansion, was 12 feet girth and 96 feet high. Of large Oaks, there were many in all parts of the park visited, but I shall have more to say of them in my notes on Thoresby and Welbeck. The terrace flower garden, in the Italian style, in front of the house, with its statuary and splendid marble fountain—the lower basin of which is 12 feet 6 inches in diameter, the block from which it was made stated to have been 50 tons weight—were much admired by the visitors.

One of the finest features of this part of Clumber is the lake—about 90 acres in extent—which sweeps past the terrace-front of the house in majestic breadth, and is lost to view in the deepening shadows of the woodland, in which it lies embosomed on either hand. The pleasure-grounds around the house contain a few fine specimens of Cedar of Lebanon, estimated to be about 300 years old, the largest of which girthed 20 feet 8 inches at the ground, and swelled out to 27 feet 3 feet higher up, by 62 feet in height. Taxodium distichum and Liriodendron tulipifera were represented in the pleasure-grounds by respectable specimens, though neither of them could be said to be remarkable; the first-named was 55 feet in height, with a proportionate girth. A glance at the kitchen garden, and fruit and plant houses, and the handsome new chapel, not yet finished, which is situated in close proximity to the house, brought the visitors to such an advanced hour in the day that they had to hurry on.

A short drive brought them to a fine three-arched bridge thrown across the lake, where a brief halt was made to view the beautiful scenery spread out on either hand. On the right, about half-a-mile distant, lay the noble mansion and terrace mirrored on the bosom of the lake, and on the left a handsome island clad with graceful Willows and other characteristic trees and shrubs to the water edge, the whole forming a charming scene which was much admired. Near the bridge was a tall black Italian Poplar, rearing its rather dense head above the surrounding Willows, Birches, &c., which was rendered the more dense, as well as more interesting, by the presence of masses of Mistleto which had found congenial quarters on its branches. Taking carriage again, the party was conducted through broad masses of woodland and open pastures, interrupted here and there by wide reaches of Bracken and Heather to the

Lime Tree Avenue,

two miles in length, and one of the most perfect and extensive of the kind in England. The trees are in double lines on each side of the fine roadway. They were planted about sixty years ago at a regular distance of about 35 feet apart, and are now from 50 to 60 feet in height, and perfect specimens of their kind. Another feature in avenues in this extensive park is the Elm Tree Avenue, which is 3 miles in length. In passing through the park, towards Thoresby, it was noted that the Heather was dying out in wide reaches. Mr. Tomlinson could assign no cause for it, and said that burning, which often arrested the progress of death, had in this case failed to do so, but that when the surface was pared off with the spade, healthy seedlings of Ling sprung up, and renewed the clothing of the ground effectually. After partaking of the hospitality of Mr. Tomlinson, the party were led, in a northerly direction, direct to

Thoresby,

where, at a point on the south-eastern boundary of the park, they were met by Mr. Jamieson, the veteran forester, who for over forty years has managed the famous woods on this estate. A short drive through plantations of thriving Oaks, Spanish Chestnuts of from 80 to 100 years old, thinly interspersed with noble Scotch Pine and Larch, and miscellaneous hardwoods, brought us to an open space of large extent in the park, which is being afforested in a gradual way annually, by sowing, instead of planting. A number of acres are taken in yearly and inclosed, the fencing being rabbit-proof wire. The ground is marked off in slips of from 15 to 20 feet wide; each alternate slip is trenched 18 inches deep, and Acorns or Chestnuts—both being reared in the same way—are sown in lines about 5 feet apart. The surface is kept clean in the usual way till the plants are capable of mastering the weeds. Thick sowing is the rule, and the plants are thinned out gradually, the thinnings being planted elsewhere. The lines of some two-year-old Oaks were not unlike seed lines of the same age in a nursery. The untrenched slips are planted with Spruce, Scotch Pine, and Larch as nurses. This practice was adopted by the late Duke of Portland about 40 years ago, and the merits claimed for it are that it is economical in regard to the first outlay, and that earlier and better returns are obtained. It has only recently been tried at Thoresby, and results are not so well illustrated by varied example there as at Welbeck, where the party afterwards saw many portions of woods of various ages which they were able to compare with others that had been planted in the usual way.

A drive through the woodlands revealed features of abounding interest to the visitors. Avenues of Wellingtonia, and others of Douglas Fir in the most perfect health, backed up on either side by magnificent masses of Oak, Spanish Chestnut, Beech, Birch, and, but more rarely, also splendid groups of Larch and Scotch Pine, of such age and grand proportions as to suggest a regret to the mind that their characteristic styles of growth and habit were not more frequently blended with those of the all-prevailing Oak and Chestnut.

The progress of the party had hitherto been made through broad reaches of woodland, intersected by spacious drives and vistas, the trees averaging from 10 to 150 years, with here and there the hoary gigantic remains of ancient Sherwood standing out singly or in sparse groups in vivid pleasing contrast with the younger generations of thriving trees around them. There was no time to spare for taking measurements in the portions of the park traversed from the time of entering it, till the party reached the residence of Mr. Jamieson, where they were hospitably entertained, and much interested in a very orderly, well-kept nursery, stocked with miscellaneous trees and shrubs for estate purposes.

Remounting, the party drove through the Deer Park, which is beautifully undulated, and of great extent, abounding in red and fallow deer, and tastefully diversified with well-placed groups or single specimens of Limes, Beeches, and other handsome park trees. Many of the first-named, both here and at Clumber—and, as we found afterwards, also at Welbeck—exhibited a dense, strictly conical habit, which the members of the party generally considered peculiar to the district. No apparent local conditions appeared to account for the peculiarity, nor was any probable reason elicited to help solve the question.

Arriving at Thoresby House, the party were entertained at luncheon by the kindness of Earl Manvers.

A rapid glance at the flower and kitchen gardens, with their extensive and well-appointed ranges of fruit and plant houses under Mr. Henderson's guidance, was all that could be spared for this department of a princely place.

The day being far spent, it was seen that the programme of the morning could not be carried out in its entirety, it being found impossible to reach Birklands and Budby South Forest, and return to Worksop. It was, therefore, determined to visit Budby North Forest, *en route* through the Park to head-quarters. In doing so, the party was conducted through a long reach of ancient forest land, amid thousands of gigantic Oaks, averaging from twenty to forty to the acre. They were, in the majority, well preserved and in fine health and form, averaging about 50 feet in height, their tops covering an area twice that number of feet in diameter. The largest girth taken was 17 feet 10 inches; but while not a few that were passed in review loomed larger to the sight, many were obviously smaller, and the average would probably be about 13 or 14 feet. The drive through this section of the Park was of great interest to all present, the imagination of each realising something of the sylvan grandeur in which this beautiful country was clothed hundreds of years ago. Here the work of woodland inspection closed for the day, and the party returned to Worksop to dine and rest after a fatiguing but delightful day.

An early breakfast, the following morning, enabled the company to start at half-past eight for

Worksop Manor,

under the guidance of Mr. Oates, forester on that estate. Little time could be spared here, but the party saw much to admire in the splendid timber trees in which the Manor Park abounds. Oak, Beech, Scotch Pine, Larch, Silver Fir were much appreciated for their clean, massive growth, and great proportions. The largest Oak measured gave a girth of 10 feet 3 inches, with a straight, clean trunk of 46 feet in length; and the largest Larch girthed 7 feet 8 inches, with a very slightly tapered stem of 79 feet. Hurrying on to

Welbeck,

the company was met by Mr. W. H. Jamieson, forester, at a point nearest Worksop Manor. The first object of interest to which attention was directed, was a large wood of Spanish Chestnut, about forty years old, one of the earliest that had been laid down by sowing on the ground in the manner already described. It was admitted by all to be the finest mass of the kind and age that any of the members

had ever seen. The trees averaged 60 to 70 feet in height, with boles from 12 to 18 inches girth, clean and straight as gun-barrels. Everywhere throughout the park the same classes of timber trees as have already been noted at Clumber and Thoresby were to be seen in equal luxuriance and beauty. Oak wood of various ages reared from seed in the same way just alluded to were met with at many points, but not a few of the company failed to see any advantage in the practice over the ordinary manner of planting, examples of plantations being met with in such conditions as rendered comparison fair.

Planting is actively carried on here annually. Last year we learned from Mr. Jamieson that he had planted out no fewer than 200,000 Conifers and hardwood trees from the home nursery alone, which leaves out of count the many thousands bought in.

Spruce, which it was noted grew but indifferently at the foregoing places, were here found rapidly going to decay at the age of forty years. Splendid growth they had made up to a few years ago, but health had suddenly failed, and wide plantations were dying on their feet. The soil, which throughout the district is of a very light sandy nature, was, in the opinion of many, the cause of the decay of the moisture-loving Spruce, and probably the opening up of the woods in the necessary course of thinning may have combined with the natural dryness of the soil to precipitate decay since the last thinning took place.

In the White Deer Park, a wide range of the demesne, the visitors found some rare objects of interest. The Porter Oaks, so called because they stand on either side of a former gateway into the Abbey, are huge relics of the remote past. One girths, at 5 feet up, 26 feet, at the base 36 feet, and is 31 feet in height; the other, at 5 feet, girths 24 feet, and at the base 33 feet, with a height of 52 feet.

In the same neighbourhood is the Ruysdael Oak, so named by the late Duke because of its resemblance to trees painted by the Dutch artist of that name in some of his landscapes. And close by is the Seven Sisters Oak, a portion of which was living and erect last autumn, but since then blown down, and lies a huge dead trunk on the earth, with other portions which had shared the same fate years ago. In a picture of a former Duke, seen in the picture gallery of the Abbey later on by the party, the tree is shown in its perfect form before accidents brought about its mutilation. It is represented with seven perfectly upright stems springing from one short trunk of enormous girth. Not far off, in a hollow, stands the Greendale Oak, to which attaches the following legend:—In 1724 the then Duke of Portland laid a bet that he had a tree on his place through which he could drive a coach-and-six. In order to gain his wager, he had an archway cut through the trunk large enough to enable him to drive six horses, two abreast, with a carriage after them. The tree, though a wreck of former grandeur, still lives, but its limbs are shored up and carefully braced, to keep them together.

The party then made a flying visit to the gardens and tunnels, for which Welbeck is famous.

After lunch, the party spent some time in inspecting the magnificent stables and riding-school, the dairy establishment, the famous stud of blood horses, and the timber-yard and saw-mills, and joiners workshops—the latter a veritable nest of industry, not, perhaps, so large, but as complete in every appointment and detail as may be found in the largest centres where timber manufacture is carried on.

Space will only permit our taking a rapid glance at the remainder of the proceedings of the day. From the Abbey the party made its way southward to Birklands, on the Thoresby estate, where some of the most celebrated Oaks in the district stand. The first that was reached is the Shambles Oak, on which legend hath it that Robin Hood hung his venison to ripen. The trunk is a mere shell, though the top still unfolds a fair canopy of leaves. Further south still the Major Oak is reached—a tree of magnificent proportions, which might well have been reserved by our courteous conductors as the last incitement to our powers of admiration during two days of ceaseless strain on those powers. But the "Major" is not the last, though he is the greatest of his tribe that we have seen in perfect health. At 5 feet from the ground, the trunk girths 29 feet 6 inches, and is about 70 feet high, with about 100 feet diameter of the spread of the branches, displaying a dense cloud of deep green foliage suggestive of the most vigorous health; yet the huge giant had a hollow in his heart large enough to easily stow away thirteen of the company, a rent about 18 inches wide and 7 feet long on one side the trunk, making a not too roomy entrance for most of them. Onward a little further, and we stand under the Simon Foster Oak, still struggling to defy the "tooth of Time," but unquestionably decrepid, yet huge and grand in his decay; but after the gay green Major, it is hardly necessary to say that the members of the party had little inclination to test his dimensions, but turned towards Worksop, bearing with them warm feelings of gratitude to all who had ministered to their pleasure during what they will remember as one of the most successful excursions undertaken by the Royal Scottish Arboricultural Society. They arrived in Worksop a little before 9 P.M., dined together at the Royal Hotel, and then broke up; the majority of the Scotch contingent leaving Worksop at a quarter past eleven o'clock *en route* for the North.

New or Noteworthy Plants.

GLADIOLUS TURICENSIS ×.

This beautiful hybrid (alluded to in my note on p. 154 of your last issue) has opened somewhat sooner than I expected, and is now in full flower in my garden. Although by no means so evenly expanded or perfectly formed a flower as G. nanceianus×, it is undoubtedly a very fine thing, which shows its Saundersi parentage in a much more marked and unmistakable manner than Lemoine's hybrid does. Having now G. Saundersi also in flower, I have been able to compare it with the new hybrid, and find that the flowers of the latter are nearly twice as large, and of much lighter shade of red than those of its parent, and are beautifully marked with pure white on the lower petals. In this hybrid also the bad habit of the parent of bending-in its flowers towards the stem is almost entirely absent, though in this regard also it is slightly inferior to G. nanceianus. Herr Froebel informs me that it is an exceedingly vigorous grower and free bloomer, and well adapted for planting in beds where masses of one colour are required. *W. E. Gumbleton.*

Luddemannia Pescatorei, *Linden and Rchb. f.*

A fine raceme, sent to Kew by Mr. F. W. Moore, of Glasnevin, for determination, proves to belong to this rare and beautiful species, and serves to recall the plant of the closely allied L. Lehmanni, exhibited by Sir Trevor Lawrence at the Orchid Conference at South Kensington, which proved such an object of interest. The raceme now sent is a little under a yard long, the greater portion being crowded with orange and brown flowers, like that of an Aërides, which in habit it much resembles. The species was introduced in 1848 by M. Linden, and flowered in the collection of M. Pescatore, at Paris. It was from a few detached flowers from this plant that Lindley described it as Cycnoches Pescatorei, remarking that the raceme was a yard long and bore ninety-six flowers. The figure in Linden's *Pescatorea*, i., t. 22, shows the raceme far too lax, for the flowers on the Glasnevin raceme are somewhat fewer in number, and yet the raceme is much denser than the figure in question.

It is a native of Ocana, and was discovered by Schlim, at an elevation of 9000 feet above sea-level. But what is this remarkable plant? Is it a good genus, or a sexual form of Cycnoches, Acineta, or Peristeria, or of something else? Bentham refers it to Cycnoches, but as both sexes of this genus are known I do not think it can possibly belong here, to say nothing of the different habit. The conclusions arrived at by Reichenbach point in the direction of Acineta, for he says that one year Messrs. Veitch sent what appeared to be a fresh Luddemannia, and next year it showed the abominable inflorescence of Acineta erythroxantha, from which plant he had also obtained good seed. Those who would read this interesting paper in the original should consult the seventh volume of the *Journal of the Royal Horticultural Society*, p. 20. He concludes, however, by saying that Luddemannias "may be sexes of Acineta, perhaps also of Peristeria." It is certain that plants believed to be Luddemannias have proved to be Acinetas on flowering, but it seems strange that no one has seen an Acineta sporting in the reverse direction; also that the pollen of that genus should be apparently perfect. It is much to be hoped that Mr. Moore will succeed in keeping it healthy and flower it again and again, letting us know the result. *R. A. Rolfe, Herbarium, Kew.*

THE JARDIN DES PLANTES.

On the occasion of a recent trip to Paris, I visited these gardens, and was most attracted by the following:—

Solanum glaucophyllum.—This is one of the most striking herbaceous plants in the Jardin. It is very ornamental as a foliage plant, and not to be despised for its flowers. The stems are numerous, 3 feet high, each one springing direct from the ground, and is unbranched until it breaks into flowering leafy heads. The leaves, which are very glaucous, with a blue shade, are 7 inches long, lanceolate with a cartilaginous entire margin. The flowers are deep purple, with a white centre, nearly an inch across It is a native of Paraguay.

Cucurbita perennis.—We have long known this species in England as one that would live out-of-doors but not reach a full development, and I was somewhat surprised to see how well it was growing here. It was of very ornamental appearance, producing long shoots, and forming a fine mass of its large silvery leaves. One particular specimen grows in a bed on grass, and radiates its stems on the green turf all around, forming a sort of star, with large leaves in the centre, diminishing towards the circumference. It flowers freely, and is worth trying in a specially warm position. This specimen is, perhaps, 25 feet across. Native of Texas, California, &c.

Nelumbiums, Out-of-doors.—It has long been a matter of interest that N. luteum, with only a glass protection in winter, grows and flowers out-of-doors in these gardens, but that N. speciosum has succeeded under the same conditions will be news to many. Both, however, are now grown in company, and they flowered together last year. This year they are alike weak, and do not look at all promising, a condition due in some measure, probably, to the dull weather of last year, and partly perhaps to the position, which is too much shaded by trees.

Ehretia serrata.—This tree, Japanese according to the label, is now flowering for the second time only. It is perfectly hardy, and bears some resemblance to a Lilac, though from an ornamental point of view it is not so good. This specimen is about 18 feet high; it has ovate or oblong lanceolate, sometimes obovate, dark green leaves about 8 inches long, with the margins sharply serrated. The flowers are borne in terminal panicles, 3 or 4 inches long, with flexuose branches; they are small, rotate, and of a white colour. It is an interesting tree to be sought for all collections, but not for general planting.

Asparagus verticillatus.—Of all the hardy species this is perhaps the most ornamental, and a fine specimen is in these gardens. It is about 15 feet high, clothed with light green leaves—more properly

cladodes—triangular in section, and about 1 inch long, and is covered with fruit which, when ripe, being reddish and much like those of the common Asparagus, must be exceedingly ornamental. This would be a splendid subject for a single lawn specimen. The other species to be noted in this garden, all in some degree ornamental, are A. dahuricus, A. trichophyllus, A. caspius, A. tenuifolius, A. amarus, and A. prostratus. The last has a somewhat peculiar prostrate habit, but otherwise resembles the common A. officinalis. A. verticillatus is a native of Persia, the Caucasus, Siberia, &c.

Azolla in Fruit.—This is now fruiting freely. It is of some interest, since in England we have never known it to bear fruit, though at Bonn we have heard that it does so. We have received the plant from Bonn under the name of A. filiculoides, but so far as we have yet seen, it appears to be the same as that known in England as A. caroliniana. The Paris plant is evidently the same as our own. It is fruiting in the Jardin des Plantes in a small basin out-of-doors, and we were informed that it will not fruit until it forms a tight mass. It grows on water so shallow that the roots are able to penetrate the soil. This seems an important point for the flowering or fruiting of several floating aquatics. The so-called fruits, more properly sporocarps, are ovoid, and though small are numerous. They are borne on the underside of the frond, and are directed downwards. *I. R. L.*

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

These gardens, as most of us are aware, have lately reached their fiftieth anniversary, celebrating the occasion by what is termed a Floral Parade and Feast of Roses, a tasteless and silly exhibition which was very popular, but which it is to be hoped rather than expected, will not be repeated.

Fifty years to a Society should not have much effect upon its vigour and strength, unless it tend to strengthen both. It may be that during its past fifty years of existence it has verged slightly from the paths that one would lay down for such a Society as the above; but what Society or individual can exist a space of fifty years without contracting some error, or errors, during that period? Man is but mortal, and doubtless Societies are made of much the same material.

Let it profit by its past experiences. No one will question that the Society has done good work in the past, both botanically and horticulturally, and we wish it a successful future. Botanic gardens have been, and still are, most useful institutions to the country, and in no small way to gardeners and those who are interested in horticulture, though they are not honoured by all gardeners so much as they ought to be. How much can be learnt by paying an occasional visit during a year to such a garden as that of Kew! What plants are there, both inside and out, meriting a place in every well-organised garden. We know full well that botanic gardens do contain many plants which are hardly worth being represented in a private collection; but, on the other hand, there are many—yes, numerous plants—most beautiful, that one only here and there finds outside their boundaries. Proprietors of gardens should make suitable arrangements for their gardeners to visit some of the best establishments in the country during the season. The beneficial influence this would have would soon make itself apparent, and would over and over again repay the slight expense that might be incurred by so doing.

In a garden like that of the Regent's Park Society, one is sure to find something worthy of notice; some plant that perhaps was once popular, but for some reason or other has gone out of favour, but perhaps which deserves attention and bringing before the horticultural-loving generation of the present day. We visited these gardens on July 8, and noted at the time a few interesting and useful plants. In the large conservatory is Ruscus androgynus, or, as it is sometimes called, Semele androgyna; in large conservatories, or winter gardens, when trained round a pillar, it makes a bold and effective specimen, but for small houses it is altogether unsuitable, on account of the length to which it rambles; it is an evergreen climbing shrub from the Canary Islands. We noticed another form of this species, which has a more graceful habit; it bears cladode upon cladode, giving it a more light and pleasing appearance. The flowers are borne on the sides of the cladodes, and this specimen fruits annually. Erythrina cristagalli; there were a couple of these plants in pots, producing some good branches of flowers, deserving note. Jasminum revolutum is a yellow scented flowering species, and one which extends its floriferousness over a long period; it is rather a strong grower. Dyckia rariflora bears conspicuous spikes of orange-coloured flowers.

Proceeding to the Tropical Conservatory, we notice Petræa volubilis purpurea. This is a fine stove-plant, suitable for a trellis; the flowers are borne in terminal drooping racemes some 6 inches in length. Where possible it should have accommodation; it belongs to the Verbenaceæ family, and is from Vera Cruz, &c. Quisqualis indica, the Rangoon creeper—and a beautiful creeper it is, a member of the Combretaceæ, and like Combretum itself wants good heat before much can be done with it. The flowers are borne on the young wood, and it should be well pruned back; the flowers are sweetly scented, and red-coloured. Plumbago zeylanica is a white flowering species; the flowers are arranged in loose spikes, being in point of size rather larger than P. capensis alba, with foliage almost as large as P. rosea. Hibiscus rubra plena, and H. rosa sinensis, were bearing charming flowers of short duration, but when grown as pot plants are always of a straggling growth. Zineria æthiopica is a very pretty little stove-plant, with dark maroon scented flowers. Plumiera acuminata=acutifolia; the outer portion of the flower of this plant is of a pink or bluish tint, the flowers being collected into cymes, and are scented. Polypodium (Goniophlebium) subpetiolatum; the fronds of this are from 3 to 4 feet long, very free in growth. Its habitat is Guatemala, &c.

Along one side of the corridor—wherein the spring shows are held—Camellias have been planted out, which when established will do much to relieve the bareness of the building.

In the Tropical Orchid-house we noticed a pretty little Clerodendron, with double sweet-scented flowers.

The Victoria Regia was in a thriving condition. This is grown in a raised slate tank, in a wide span-roof house. It has bloomed this year earlier than it has done for many years. Just inside the door we noticed Wrightea zeylanica, a stove shrub with somewhat slender growth. The plant requires a good strong heat for its well-being; the flowers are white, not large, and slightly scented, and blooms nine months out of twelve.

In the houses devoted to the growing of medicinal, economic, and other botanically interesting plants, we noticed flowering Jambosa vulgaris, which is now included under the name of Eugenia Jambosa. The flowers are large and pretty, and might be compared to a very large Myrtle blossom. The Corinthian Grape, that very important and highly esteemed fruit, the dried Currant of the shops, was in good condition, fruiting freely; this Mr. Higgins, the foreman of the department, considers due to allowing the rods plenty of room to run lengthways.

In the herbaceous ground was the pretty little Erodium Reichardi, a plant which attains some 2 or 3 inches in height; it grows into small dense tufts, bearing miniature heart-shaped leaves and white flowers. For the rock it is a neat plant. It should have a little protection during the winter, such as a small piece of glass, or some other convenient material, placed above it.

The Thalictrum genus reminds me what useful plants are here. Many of them have foliage more or less resembling that of the Maidenhair Fern, and are very useful for mixing and arranging with cut flowers. I append the names of a half-dozen which will be found most useful for that purpose: T. exaltatum, T. calabricum, T. cornutum, T. sibericum, T. minus, T. adiantifolia; also Isopyrum thalictroides, and Thalictrum aquilegifolium, are both useful for cutting flowers and foliage from. *X.*

FINSBURY PARK.

This, the northermost of the London parks, is situated on the site of the once famous Hornsey Wood and Wood House, and is easily approached by the Great Northern Railway. It was formally opened to the public twenty years ago, on August 8, 1869, and was laid out by Mr. Cochrane, the present Superintendent, under the direction of Mr. A. McKenzie, at that time landscape gardener to the Metropolitan Board of Works. The special features of the Park, setting aside the recreation grounds, pastures, &c., are to be seen in the flower garden and the ornamental lake adjoining, and of which a representation is given in fig. 25, looking south. The entire extent of the Park is 115 acres, which is variously divided, the lake, including the central island, occupying 4 acres; and since the control of the Park has been transferred to the London County Council, pleasure-boats have been introduced on to it.

The two prominent trees on that portion of the island shown in the illustration are yellow-barked Willows, with Lombardy, Poplar, and Birch trees in the background, while the bank itself is clothed with Brambles. On the bank of the lake shown on the left-hand side of the picture, are Black Italian Poplars and Willows, with, in the distance, a rockwork covered with various low-growing shrubs and Ivy, the bank in the immediate foreground being composed of mixed Furze and Broom, which was sown fifteen years ago, and has since been cut down on three occasions as required when dead branches show, which treatment appears to allow a good development of new growth, keeping the clump vigorous and clean. The island is a very pretty piece of work, and contains Thorns, Sycamores, Spiræas, Lilacs, Hollies, and other plants, besides those before named.

The flower garden is of considerable extent, and contains some sixty well-furnished beds, in which some 50,000 plants are annually used. Coleus Verschaffelti (dark red), with a variety of zonal and tricolor Pelargoniums, as Mont Blanc, Lady Cullum, Cleopatra, John Gibbons, and H. Jacoby, and the Finsbury Park blue Lobelia, are extensively employed. The situation of the Park on one of the "Northern Heights of London" prohibits much subtropical gardening, but Dracænas, Cannas, and a few of the most hardy Palms are employed in sheltered positions.

In a portion known as the Rosery, a varied herbaceous border is maintained, with beds of Roses at intervals; Calceolarias, Liliums, Abutilons, Alströmerias, &c., are to be seen about here. Some half-dozen acres are devoted to Rhododendrons in masses, which make a bold display in their proper season, and near this portion of the Park flows the water of the New River.

There are over 9000 square feet of glass in houses and frames, where propagation of plants is carried on for the purpose of furnishing the beds about the Park, and some of the stock is used for planting in other gardens under the control of the County Council; indeed, about one-half of the quantity grown is transferred in this manner.

In the Chrysanthemum season, in a temporary structure specially erected for the purpose, a first-class display of Chrysanthemums is made, and is greatly appreciated by the public, but we shall be glad to learn when a more suitable house has been erected.

Naturally, on the site of an old wood, ancient trees are sought for, but there are few specimens now remaining; these comprise about a score of Oaks,

with some Elms, Maples, Hornbeams, and Limes, but these are fast dying out.

The Park is well kept, and the more decorative portions are in good order, reflecting credit on the management, and on Mr. Maudlin, who ably directs the work in the gardens and houses.

INSECT PESTS.

The article upon caterpillars in relation to fruit growing which appeared in your issue of July 27, has attracted considerable attention, and as I have been a close observer of nature for many years, I beg leave to join in a discussion which Mr. George Bunyard invites on p. 93. I do not hesitate to assert that orchards and fruit trees were better cared for 40 or 50 years ago than they have been in more recent times. Home-grown fruit was then much prized, probably because the choice of foreign productions in the markets and shops was very limited. A succession of unfavourable seasons, foreign and colonial competition, and insecurity of leasehold tenure have combined to discourage farmers and others from taking much interest in fruit culture. Prior to the Apple congress held at Chiswick in October, 1883, comparatively few young trees had been planted, and the old ones through neglect had become the nursery of all kinds of insect pests. Our feathered friends, the natural check to these, have been diminished not so much by intentional destruction as by changes in the condition of the country. Hedgerows have been levelled, small fields have been thrown together, waste lands reclaimed, arable land laid down to grass, and many of the old nesting places broken up. Martins and swallows formerly abounded in the suburbs of London and other towns, but modern styles of building and the use of Portland cement, the covering of reservoirs of water, filling in of ponds, the presence of "mic-mac" deodorised with carbolic acid on the main thoroughfares in lieu of the old-fashioned gritty mud with which they built their nests, and other causes, have lessened their numbers, and driven them to the river and lake districts. The other day at Taplow, I watched with delight a colony of swifts rejoicing in the shelter of a cottage with open eaves by the river-side. They were so much at home that the parent birds might have been caught with a butterfly-net as they issued from or entered their nests. Willow-wrens, whitethroats, flycatchers, reed-warblers, and other insectivorous birds abounded, and I observed that the Apple trees were full—not of caterpillars but of fruit.

Here in the suburbs of London I have to mourn over the wholesale trapping of robins by itinerant bird-catchers in the winter, and the destruction of summer warblers by the half-wild cats which abound, especially during the early autumn holidays. Some of the means adopted for the destruction of insect pests even are injurious, if not fatal to the birds; such are hellebore powder, Paris green, &c. Birds have good memories of what disagrees with them, and they avoid experiments and dangerous localities. During the last two winters I have observed a great diminution of tits, which I attribute partly to the clinging snow and heavy rime-frost which sometimes for days together coated the branches of many trees, and prevented the birds from finding their natural food. Snow is a great protector of insect life, and frost is not so effectual in checking it as wet weather. I have found greenfly under curled Holly leaves in winter and early spring after severe frost uninjured, and ready for mischief.

Every means should be taken to attract and protect insectivorous birds. In winter a bit of beef-suet or a bone from the dinner-table should be hung among the trees, and in summer water, which is a great attraction, should be provided for them to drink and bathe in. I welcome even the sparrows, which, although very destructive in some districts, I know, destroy vast quantities of insects during

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Fig. 25.—Finsbury Park, London: view across the lake. (see p. 184.)

nesting time, and at all seasons of the year catch and eat moths whenever they can. A hen and chickens will eat almost anything that flies or crawls, but the hen should be cooped, otherwise her scratching will injure the roots, especially of bush and pyramid trees. Mr. Bunyard wisely recommends ducks. Clean culture, and the removal of everything that shelters eggs and chrysalids are to be recommended. Many of the former may be destroyed by soot and lime distributed in the autumn and winter by means of the "Strawsonizer," and the latter are not likely to survive a coat of quick or gas-lime applied to the surface of the ground after the fruit is gathered. The winter moth will have an uneasy time of it with gas-lime below and cart-grease above. *A propos* to this, the sticky band should be placed near the base of the tree, so as to afford as little courting ground as possible, for although the females cannot fly, the males can, and some of them carry their mates to the upper branches, though not "in their claws." With other varieties the female often carries the male. I rather dread the application of some insecticides in a wholesale manner over fruit trees in spring and summer. The leaves and fruit will suffer, whilst some varieties of caterpillars will escape, being so cunning as to defy even hand-picking. The leaf-roller will dodge even a bird, and the larvæ of the Codlin moth, the worst enemy of all, fastens a leaf to an Apple, and securely eats its way into it. In the fruit-room it will leave one Apple to travel to another. The greatest success will be with the larvæ of the lackey moth, a great plague, but one possible to contend with, as their web lets every one know where they are, and they can be killed in batches. Much intelligence is needed by the fruit-grower and his *employés*. Different soils and situations render it necessary to alter and vary methods of treatment. Mr. Bunyard's correspondents differ in their reports. For instance, one grower states that surface-digging facilitates the entrance of grubs into the soil and leads to their preservation through the winter, and another is equally certain that it does not. Much depends upon the soil. I know a garden-orchard of standard trees which never suffers from insect pests to any serious extent. It is free this year, and the trees are laden with fine fruit. It is dug every autumn, and no doubt some caterpillars bury themselves and turn to chrysalids; but the soil is clay, and the frosts and rains level the surface, so that the moths cannot emerge from the stiff soil. I think the plague is worst where Currant and Gooseberry bushes are planted between the standard trees. The shelter in winter is more complete. Too much importance cannot be attached to clean culture, and the destruction by fire of all rubbish. I would also urge my brother fruit growers to study the habits of insect pests, and to learn enough of the different species and varieties to describe them accurately. Do what we may there will always be a good deal of mystery attending the spread of insect as of other plagues. Climatic conditions are the chief factors in determining the abundance or paucity of insect life. One year we have wasps everywhere and without any apparent reason, scarcely any the next, and so it is with other insects. There is no doubt, however, that the number and variety of our insect foes in recent years is in great measure the result of past neglect on the part of the much tried fruit-grower. As in the case of weeds the seeds of which are wafted from neglected ground to the fields of the careful and industrious, so it is with various moths, weevils, and other winged pests, against the immigration of which the good cultivator has no security. This is an unavoidable evil in the suburbs of large towns, or wherever holdings are small and numerous. To those who, apart from fruit growing, take an interest in entomology, it is matter for remark how rapidly various species and varieties of inconspicuous insects increase and take the place of others which are not protected by harmony of colour and configuration with surrounding objects. The lackey moth finds safety from birds by falling to the ground because it resembles their droppings, and movement alone betrays it. Others resemble or harmonise with dead leaves, and escape in proportion to the fidelity of the likeness. As a rule the most conspicuous caterpillars are protected from sparrows and other birds by offensive hairs, which to them probably appear as large as porcupines' quills to us. In other cases an offensive odour or flavour renders them unpalatable even to chickens. But in their perfect form, when they are protected by the power of flight, they are eagerly devoured whenever they can be caught. To the close observer also it is apparent that certain species of caterpillars are gradually acquiring the power of subsisting upon food which forty or fifty years ago they left untouched. The common white butterfly may frequently be seen to deposit its eggs upon the leaves of the scarlet Pelargonium, and the larvæ when hatched sadly disfigure the plants. It has recently been proved that the Plum aphis migrates to the Hop plant and preys upon it at certain seasons, and there is a potentiality of mischief in the aphides which disposes me to think that in the future they will establish themselves upon the Tomato plant and Grape Vine. They are already attacked by them when in a weak and drawn condition. These little creatures have wonderful powers of adapting themselves to changed circumstances, and they are much altered in appearance when transferred from a plant of one species to another.

It is probable that by the destruction of the more sensitive individuals of the race, time after time, by tobacco smoke, the surviving aphides have become the progenitors of less delicate offspring, and the process has gone on, through a series of years, until the Rose aphis of to-day takes a much stronger dose to kill it than did its ancestors. It has besides acquired the trick of throwing itself off, or dropping from the Rose-bush when in the least disturbed, and climbing up again when danger is past. The tender little ones which remain on the shoot are alone killed by the various applications which are used. Repeated fumigations fail to kill them all, and the disfigured foliage tells a tale of the strength of the tobacco-paper or other insecticide which has been used. I prefer to use Tobacco, pure and simple, but, for the future, I think we shall have to look in the direction of the new vapour cones for the complete destruction of insect pests in our Rose, Orchid, and orchard-houses. *W. R., Streatham Hill.*

Orchid Notes and Gleanings.

Lælia crispa var. delicatissima

Is now flowering in the Orchid-house at Kew, having been presented by the late Mr. Day. The habit is precisely that of the type, and it requires the same treatment. The plant under notice has only one flowering spike at present, but as it becomes more established this will doubtless improve. The flowers are superior in every respect to the type, the petals and sepals being of a snowy-white and gracefully curved; the lip is of fine form, larger and more beautifully fringed than in the type. The markings on the lip are of a rosy-purple, the rostellum being slightly tinged with the same colour. It is a charming variety. *P. W.*

Mormodes luxatum, *Lindl.*

A fine raceme of this splendid Mormodes has been sent to Kew by Mr. F. W. Moore, of Glasnevin, for determination, which differs a little from the forms hitherto described, in having the segments, including the lip, with a large number of minute light purple dots, especially near the base. In other respects it is about intermediate between the original type (*Bot. Reg.*, xxix., t. 33), and the var. eburnea (*Gard. Chron.*, 1882, pt. ii., p. 1145, fig. 27), and very near to the one figured in the *Revue Horticole*, 1889, p. 132, with plate. Perhaps these dots are not really absent in other forms, though they do not appear to have been described. It is certainly a magnificent species, its flowers over 3 inches across, and sweetly scented. The dislocated appearance of each flower is very curious, and perhaps looks like a deformity, though such is not really the case. Both lip and column are twisted out of their normal position (opposite to each other), until they meet, and the lip appears to be perched on the summit of the column in the quaintest manner possible, and, what is equally remarkable, on the left side of the raceme they are always turned to the left, but on the opposite always to the right. How all this peculiarity of structure is subservient to the cross-fertilisation of the flowers, was pointed out by Darwin in the case of Mormodes ignea, though, as he himself states, it was not until he had carefully examined twelve flowers, trying various experiments, and carefully recording the results, that he could make out the meaning and action of the parts. It appears that the minute hinge by which the anther-case is attached to the column is alone sensitive, but that when this is touched by an insect, or when the weight of the insect causes the labellum to press the tip of the anther-case, and thus act on the hinge, the pollen is violently thrown upwards about a couple of inches, during which it curls up like a hoop, and then falls just where the insect would be, attaching itself by the gland. The anther-case comes away with the pollen, and thus serves to prevent it becoming attached to the gland when rolled up. On drying it gradually unrolls and becomes nearly straight, when the anther-case falls away, having served its purpose. On visiting another flower the pollen would now come in contact with the stigma. Several of these points I have myself observed in the case of another species of the genus. *R. A. Rolfe.*

Sobralia leucoxantha.

The plant now flowering at Kew has been grown in the cool-house, which place seems to suit its constitution very well, for whereas last year we only had one or two flowers at a time, this year we have reached the grand total of six, which when expanded at one time make a capital display. No difficulty is experienced in rearing these plants, they require good care and attention, always keeping them clean. The flowers are very handsome, the petals and sepals being white, the points of the latter slightly recurved; the petals are somewhat broader than the sepals. The outer part of the lip is white, the inner part is of a rich golden colour tinted with orange, becoming paler towards the edge. The stems on which the flowers are produced are about 2 feet high. *P. W., Kew.*

Spathoglottis Vieillardii.

Although so recently brought under the notice of horticulturists, this Orchid appears to have been known in a dried state for many years. It was collected in the New Caledonian group of islands as far back as 1853, and again in the same group by Vieillard in 1877, at which time it was named by Reichenbach in honour of the collector. Finally, in 1886, it was found in the Sunda Islands, and through the agency of Linden living plants were brought to Europe, when it was sold as S. Augustorum. The flowers are chiefly of a pale lilac, the side lobes of the lip being brownish-red, and the disc yellow. Considering the size of each flower, the number produced is remarkable. A plant now in bloom at Kew opened its first flowers in the beginning of May, and has borne on one spike alone more than fifty flowers, each of these being 2 inches in diameter, and as yet, at the end of three months, shows no sign of ceasing. The flower bears a strong resemblance to that of Phalænopsis Lowii, and about half-a-dozen are open at one time.

As far as can be ascertained from two years' cultivation, this Orchid is easy to grow. It requires to be potted in open loamy soil, and is happiest in the warmest house when in growth. *W. B.*

Roscœa purpurea.—It will be a matter of surprise to most people, we imagine, to learn that this beautiful plant, generally grown as a stove plant, proves, according to Mr. Nicholson, perfectly hardy at Kew, the tubers not being injured by being left in the ground.

COLOUR IN PLANTS.

(Continued from p. 160).

Colours associated with Chlorophyll.

These reflections bring us to consider colours as residing in the vegetative organs themselves. Taking chlorophyll as the starting point, Professor Stokes discovered in 1864 that it was a complex substance, containing at least two green and two yellow substances. Mr. Sorby corroborated this, and called the greens blue chlorophyll and yellow chlorophyll. But the two yellows of Stokes he resolved into four, which he calls orange-xanthine, xanthine, yellow xanthine, and lichnoxanthine. Others, as Sachsse, have increased the number to nine, five greens and four yellows. Now these greens and yellows appear to be essential, but the colouring matters of the erythrophyll or red and purple group vary with accidental circumstances; the reds and purples of healthy leaves, such as Coleus, Cineraria, &c., are apparently most nearly allied to similar colours in flowers. In some Pelargonia, as well as in coloured bracts, the red colouring matter in the leaves is identically the same as in the petals. In both cases they are generally made bluer by alkalis, and redder by acids. Mr. Sorby found that there was a number of quite distinct species of erythrophyll, some being found only in particular groups of plants.

In treating of the red or erythrophyll group, Mr. Sorby found that certain substances exist naturally in such a state that they are merely decolourised by further oxidisation, so that the general colour changes from orange-red to pink. Analogous changes in flowers, Mr. Sorby would tentatively attribute to varying degrees of vital energy at different times of the year, thereby modifying chemical affinities, just as some Orchids, as soon as they are fertilised, soon show marked deterioration in colour; hence, a lowering of vitality in cloudy and cold weather may be the primary cause of a deterioration in the tints of petaline colours.

This oxidisation under light may account for the fading of certain colours to which Mr. Burbidge alluded (*Gard. Chron.*, 1889). It is not uncommon as a flower advances in age. Thus, the hybrid Rhododendron, Maiden's Blush, has pink limbs with a yellowish tube, and the pink gradually fades with age. Mr. Sorby remarks upon the fact that not only is light required for the formation of certain substances, but may be the actual cause of their subsequent destruction. This is true of chlorophyll itself; and adds—"the red substances formed from chlorophyll by the action of light are themselves afterwards decomposed by light." This shows that for the various processes concerned in plant colourisation there is always an *optimum* point, and too little or too much light are equally injurious.

Although green chlorophyll, artificially treated, may, indeed, be resolved into reds, yet Mr. Sorby found that such products differ from the erythrophyll in leaves. Nevertheless, he adds—"It appears to me extremely probable that those often found in leaves are products formed by the action of light on chlorophyll under conditions which have not been reproduced artificially." This seems to be especially the case if the foliage be in a state of low vitality—*e.g.*, in red patches around spots attacked by fungi or insects, in red leaves of Mahonia in cold weather, &c. But this will hardly apply to the coloured foliage of Coleus, and the purple under-surface of the leaves of Cineraria cruenta, which are partially protected from light.

It would seem by observers on Primula sinensis, and by Naudin on Daturas, that some at least of the colours in the flowers are correlated with those in the healthy stem. Thus, Naudin found D. ferox has its stem of a deep purplish-violet from the root to the cotyledons; and he concluded that it was this species which thus, when pure, contains the colouring principle in a rudimentary condition, which had imparted it in an exaggerated form to the hybrid raised between it and D. lævis. These cases, however, do not appear to have anything to do with low vitality, such as when Mahonia turns red. Nevertheless, Mr. Sorby found that the coloured substances in petals are, in many cases, exactly the same as those in the foliage from which chlorophyll has disappeared; so that the petals are often exactly like leaves which have turned yellow or red in autumn, or the very yellow or red leaves of early spring, but in other cases special coloured substances are developed which do not occur in leaves.

From the correspondence in the *Gardeners' Chronicle* (February 9 and 23, 1889), Mr. Pope's experience would seem clearly to establish the fact of greater vigour being associated with red colouring of the red-stemmed Primroses, and this is confirmed by Mr. Burbidge. The latter correspondent adds that if there be an excess of red, then the constitution is not improved. This is natural on *à priori* grounds, for it would probably mean a deficiency of chlorophyll. Now we know that the intensity of the absorption bands of chlorophyll is correlated with the execution of vegetative functions such as transpiration and assimilation; and that the former is always increased under red and violet rays. I find that the spectrum when seen through a solution of the purple colour of Alternanthera, shows only a red band intersected by the chlorophyll absorption band No. I. This is very broad. Solutions of Coleus and Copper Beech show the same absorption bands as chlorophyll, but intensified, especially at the violet end; all this means that much more light is thus absorbed, which represents so much more energy at the disposal of the plant. Hence one infers that the natural erythrophylls in healthy leaves are not signs of low vitality, but rather the reverse. *G. Henslow.*

(To be continued.)

NURSERY NOTES.

MESSRS. H. CANNELL & SONS.

Begonias.—When visiting the Swanley Nurseries, Begonias naturally claim the first consideration, and the large mass of some 9000 plants which were in full flower in the open on the occasion of a recent visit, fully sustained the reputation of the strain for dwarf and compact habit combined with good sized and variously coloured flowers. The plot in question was a sheet of colour from plants produced from seed sown in the early part of this year.

Looking at the plants under glass, we see them, in all stages of growth, and all appear to be in equally fine health. One house, 100 feet long, which, by-the bye, is the length of all the houses in the nursery, was a wonderful sight, the large and bright flowers being so numerous as to almost hide the foliage; this was a house of single varieties only, and the majority of them were unnamed seedlings. We noticed one or two fine whites and several shades of old gold, others old gold flushed with red-brown—a very pleasing combination; and among scarlets and crimsons were several worthy forms, one of which was specially rich and bright. In the house devoted to doubles, there were some first-class novelties with bold flowers, well supported on stout stems, among which the following may be selected:—Mrs. F. Jenkins, pale sulphur-yellow, very large and free; Rosebud, which was certificated at the recent Temple Show of the Royal Horticultural Society, with fine formed Rose-like flowers; Her Majesty, pale creamy-white with a delicate rosy suffusion, very elegant; A. F. Barron, rich rose, full flower; Mr. W. B. Miller, brownish-cream with a rose tint, very fine; Lady Emily Dyke, rich yellow, and large size; Charles Turner, salmon-red, very full, and of tall habit; Mrs. Cornwallis West, yellow, with pink reverse to the petals, globular in form, very fine; Mistress French, very pale yellow, with a greenish centre; G. Brison, salmony-rose, very distinct and bright, and free-flowering; Duchess of Fife, a most attractive novelty of tall growth, bearing, almost erect, numerous large flowers of very pale rosy-pink, with the petals not so crowded as in most others, but of large size, and elegantly twisted, giving a gracefulness to the bloom which was very taking. Another of particular merit was Dazzler, which could hardly be named otherwise, it being of an intense bright scarlet, and of good form, not too high in the centre. Others were as yet unnamed, and among them were some rich colours and effective combinations, one like a yellow-ground Picotee, with a red edge, being quite novel; and another is a very pure white, dwarf, and compact, with small dark-coloured leaves.

Pelargoniums.—Other two houses are full of zonal Pelargoniums, bearing trusses of great size, and offering a good opportunity for comparing the various varieties of both double and single forms. It is neither possible nor advisable to enumerate all the good and worthy varieties, and we only name those which caught our attention in looking through the collection. Among the doubles, Swanley Double White stands out well for pure colour and dwarf habit, and, moreover, the truss of useful, moderate dimensions, making this variety suitable for cutting purposes. Distinct, too, is Chamæleon, rose-carmine, with scarlet flakes in varying degree in different flowers. Golden Crown is a rich orange-coloured flower, much resembling Spade-guinea, but more nearly approaching a true orange, and has large-sized pips. A large-trussed variety, of fine quality, with petals of bright carmine-scarlet, is to be seen in Le Nancéien. L. Contable is a floriferous rose-coloured variety, one of the best of its class, and rejoices in a dwarf habit. La Belle Nancéienne is one of those pleasing forms with salmon centre and white margin, the pips are large, and even in outline; and, to finish the selection of doubles, Député Laflaze, an elegant-growing plant, with deep crimson flowers, may be named. Let us look now at the singles; and here, again is a difficult task in selecting those for special note. The very deeply-coloured Richard Dean is, perhaps, one of the best, and bears a well-formed large truss; Red Shirt is a large-sized scarlet, very bright; and H. Cannell, jun., is one of the best recent additions to this class of colour; others are Lynette, magenta, with white eye, large size; C. H. Swinstead, bright scarlet, free flowering; Queen of Whites, improved form, very pure in colour, and large pips, with a good truss, recommended for pot culture; Lady Rosebery, salmon-red, with a distinct white eye—very striking; Mr. Keiller, improved form, is a fine delicate rose-coloured variety; and Lady Chesterfield, a rich dark salmon, which is very showy. Notice must also be made of Mrs. Joynson, which has a good salmon tint on white—very rich, and quite distinct; and of Mrs. David Saunders, shaded purple-pink flowers, of good dimensions, which are borne well above the foliage, the whole habit being somewhat dwarf.

Coleus, &c.—Other subjects under glass worthy of note were a collection of Coleus, and a group of very well-grown Cockscombs, of very rich deep colour and large size. Among the Coleuses, which are largely grown, were several fine forms worthy of cultivation for decorative purposes, of which a selection is here given:—Beckwith, green, with a crimson shaded centre and yellow edge; Arthur Witley, one of the most distinct and most richly coloured in the collection, is carmine-crimson, mottled and marbled with varying shades of the same colour—the leaf is long, and the general effect very pleasing; La Tête d'Or, with ovate bullate leaves, much toothed on the edge, colored somewhat like those of the Copper Beech, with a shaded yellow colour towards the margin, and the entire leaf very much curled, is also distinct; Vesuvius is bright carmine, with slight darker mottlings, and a yellow edge—large leaf; and Lord Rosebery, green, with crimson centre splashed with yellow. These are but a few, but they must suffice for this occasion.

Violas, &c.—Out in the open there is a great variety of subjects to select from, such as Violas and Pansies. The elegant Countess of Kintore, with its compeer the Duchess of Sutherland, making a fine display of shaded lilac-mauve. A sheet of purple is Flower of Spring, and Eynesford Yellow shows up brightly against it. The Countess of Hopetown must also be noted as a first-class white, with a very small yellow eye;

near by, too, are several Phloxes, among which the Queen stands out as an excellent pure white, which combines the further attraction of dwarfness in growth; Charlemagne is a rich magenta, also dwarf. Joan d'Arc (new) is another white, now mentioned on account of its very dwarf habit; and Princess Ghykze has fine crimson flowers—it is an old variety, but stands well still.

In one quarter of the nursery were one or two good examples of that giant Verbascum, V. olympicum, which have been in fine flower this season, and clumps of Chrysanthemum maximum and C. lacustre, with double Sunflowers, &c., were to be seen in a wealth of bloom; while close at hand was a breadth of the quaint Statice Sowarowi, with its curiously-twisted spikes of rosy-lilac flowers.

Lobelias in variety, and a number of other useful bedders, Chrysanthemums, Carnations, &c., and a quantity of well-grown Lantanas, were also noticed.

In the recently-acquired land in the neighbouring parish of Eynesford, the ground is rapidly being cleared and laid down to seed-growing, and the cultivation of the Rose is being very extensively entered upon, Mr. Cannell proposing to supply seedling Briers in quantity.

The Nursery of M. Bleu, Paris.

This nursery is in the Avenue d'Italie, not far from the Jardin des Plantes. It is small, but contains various novelties, especially in Caladiums and Bertolonias. One of the most interesting is a new Lycopodium from Brazil, quite distinct from anything we have seen, and called L. mandiocanum. It is extremely pretty, on account of the apparently red stems, but it is in reality the bases of the leaves that are thus coloured. It is of small growth, and branches freely, forming a shrubby tuft, and is said to be of easy culture. Bertolonias are a specialty, and some of the new seedlings are perfectly charming. One in particular is almost entirely pink, and another is green with white spots. Among those that have names B. souvenir de Louis Van Houtte (1888), Madame Alfred Bleu, and Comte de Kerchove, are particularly worthy of note. This is a well-known establishment for Caladiums, and they continue to come in fresh variety, as if some kind of kaleidoscope were used to produce them. Among the best of the new ones are Madame Alf. Chaber, pale yellow, very pale red in centre; Comtesse Ferdinand de Lesseps, red, with crimson ribs and green veins; M. Léon Say, red, with pale spots; Reine de Danemark, pale pink, with red veins and green edges; Raymond Lemoinier, red, with pale yellow edges; Madame Léon Say, and Marguerite Challenier. Some of these Caladiums and Bertolonias are so free from green that one wonders about the functions of growth. A new Begonia from Brazil, just coming into flower, is remarkable on account of its ribbed stems, which in section would be something like a wheel with about six prominent cogs. A number of hybrid Orchids were pointed out, particularly the cross between Odontoglossum vexillarium and O. Roezli, already figured in the *Orchid Album* and elsewhere; and the new Cypripedium Elliotianum was just coming into flower. *I. R. L.*

CYCNOCHES PENTADACTYLON, *Lindl.*

The Swan's-neck Orchids are well-known to belong to that curious group which proved such an inexplicable puzzle to Dr. Lindley, on account of the occasional production of more than one kind of flower on the same individual, and to which the term "sport" was applied. This is now known to be simply a case of sexuality, or the production of both male and female flowers on the same plant, instead of on separate ones, which seems to be the normal habit of the genus. A very interesting case occurred a few years ago, when a plant of C. Warscewiczii, Rchb. f., produced a raceme of each kind of flower, in Mr. W. Bull's collection, at Chelsea, and which was figured at the time in these columns (*Gard. Chron*, 1879, part 2, p. 493, fig. 78); also in the *Floral Magazine*, n.s., t. 381.

I have now another very interesting case to record. It is that of a plant of C. pentadactylon, Lindl., producing a raceme of each kind, in the collection of E. Gotto, Esq., The Logs, Hampstead Heath, a single flower of each having been sent to Kew, through Messrs. F. Sander & Co., for determination. These two flowers are here represented (fig. 26, A and B), from the pencil of Mr. Weathers, and will convey a better idea of the differences between them than the longest of descriptions. As in all the species, the lip is markedly different in the two sexes, also the column, and the shape and marking of the sepals and petals. The



Fig. 26.—Cycnoches pentadactylon: A, male; B, female. (See text.)

ovary in the female is stout, strongly channelled, and in fact, quite normally developed; but in the male it is atrophied and reduced to a slender pedicel. Unfortunately it is not represented in the drawing, but it bears the same proportion to that of the female as does the column of the two sexes to each other. The pollen, too, is absent, having fallen off before it reached its destination. The female flower has hitherto remained unknown, and Mr. Gotto and his gardener are to be congratulated on their success. The male was described in 1843 (*Bot. Reg.*, xxix., *Misc.*, p. 18).

In March, 1842, a raceme was sent to Dr. Lindley by Messrs. Veitch, of Exeter, and shortly afterwards a plant came direct from Brazil, through Messrs. Loddiges. Lindley (comparing it with C. maculatum) remarked, "It has a short raceme of much larger greenish-yellow flowers, with broad chocolate-brown blotches, and its lip is quite remarkable, having five finger-like lobes, and no more, instead of the lateral comb-like fringes of C. maculatum." In the volume of the *Botanical Register* cited above, it is figured, at t. 22, as the "Five-fingered Swan's-neck Orchid." The female is very similar in colour, of a pleasing greenish-yellow shade, but the markings are far less numerous, and largely concentrated near the base of the segments, as the drawing will show.

Apart from the great interest attached to it from a botanical point of view, I should call it a decidedly handsome garden plant, and it is very satisfactory to find that this curious genus is coming into favour once more. Perhaps in time we may find out the sexual forms of each species, for at present the genus is in about as much confusion as Catasetum, which I have tried to clear up in a paper read before the Linnean Society.

The first evidence of so-called sporting in the genus was puzzling in the extreme. When Mr. Skinner was travelling in Guatemala, he discovered what was thought to be a new species of Cycnoches, which was called by Lindley C. Egertonianum. A batch of plants was sent home, but on flowering all proved to be the old C. ventricosum, Lindl. The circumstance was pointed out to Mr. Skinner; I do not know how strong language was used, but in any case a second lot was sent, and these were warranted genuine. On flowering, however, they proved as before, C. ventricosum. The case now seemed inexplicable, and as Mr. Skinner was coming home, he determined to take some plants under his own care, and so prevent all possibility of mistake. On the journey home a raceme began to push, and when the flowers expanded, there appeared once more the old C. ventricosum. A second raceme had been observed on the opposite side of the same pseudobulb, the flowers of which expanded before the others had quite withered, when, lo! they proved to be the genuine C. Egertonianum. No explanation, however, of the curious circumstance was forthcoming. It was simply regarded as an inexplicable fact. Lindley, in 1846 (*Bot. Reg.*, t. 46), figured what he called a form of C. Egertonianum, with flowers green instead of purple, adding that "Egertonianum is only a sport of ventricosum. But what, again, is C. ventricosum? Who knows that it is not another sport of C. Loddigesii, which has indeed been caught in the very act of showing a false countenance, something wonderfully suspicious, all things considered, and justifying the idea that it is itself a mere Janus, whose face is green and short on one side, and spotted and long on the other." Then if such apparently honest species as C. Egertonianum, ventricosum, and Loddigesii, are but counterfeits, what warrant have we for regarding the other so-called species as not being further examples of plants in masquerade? For ourselves we cannot answer the question; nor should we be astonished at finding some day a Cycnoches no longer a Cycnoches, but something else; perhaps a Catasetum.

If one could accept the doctrine of the author of the *Vestiges*, it might be said that in this place we have found plants actually undergoing the changes which he assumes to be in progress throughout Nature, and that they are thus subject to the most startling conditions because these new forms have not yet acquired stability. In another place he remarks:—"If we were informed that the camelopard in the Zoological Gardens had shortened the vertebra of its neck till it was no longer than a cow's, or that a kangaroo had exchanged its tail for the switch of a Shetland pony, a more surprising thing would not be announced than those changes with which we are now familiar in this group of Orchidaceæ." At the present day, when the cause of these differences is better known, these speculations are somewhat amusing.

Returning for a moment to C. pentadactylon, we find a note by Lindley (Paxt. *Fl. Gard.*, iii., p. 6), that "in the garden of Mr. Kenrick, of West Bromwich, this produced two flowers of Egertonia-

num, among the usual flowers peculiar to itself." One cannot help suspecting some error of observation here, especially as both sexual forms are now known. *R. A. Rolfe.*

Trees and Shrubs.

RUBUS ODORATUS.

This North American, fragrant, purple-flowered Raspberry has been extra fine this year. It began flowering towards the end of May, and is still in condition. The flat red fruits of the first-opened flowers now contrast finely with the large purplish-rose petals of later flowers. In general appearance R. odoratus much resembles the common Raspberry, R. Idæus, but has a more massive habit; the canes themselves are not so stout, perhaps, as in some forms of the Raspberry, nor are they prickly, but are thickly set with short reddish gland-tipped hairs, as also are the petioles of the large generally five-lobed leaves. At a short distance this gives the plant the appearance of having reddish stems. The flowers, however, are very different from R. Idæus. Instead of the small inconspicuous greenish-white flowered branchlets produced along the stems of the Raspberry, R. odoratus concentrates its flowering more towards the ends of the stems, producing many-flowered cymes, the individual flowers of which are of a nicely rounded form, and usually, if the plant is in fair vigour, about 2 inches across. Like other Raspberries, this plant likes a well-drained, somewhat moist, rich soil, and is seen to best advantage when grown in little colonies towards the margin of shrubberies; and where there is a semi-wild garden this is an excellent subject to plant, its straggling habit being rather against it for mixing amongst trim-kept shrubs; but we have seen it used with good effect planted where there were rounded promontories in the outline of the shrubbery. This is a subject that might with advantage be more frequently used to brighten up the dark masses of shrubbery which prevail in many of our public parks. It increases rapidly by suckers in the usual way, and in favourable seasons it fruits, and may be easily increased from seeds. Although the plant has been known for a long period of time, it is surprising how seldom one meets with a good colony of it. *F. R.*

LEYCESTERIA FORMOSA.

The other day I noticed in the gardens of W. Gardiner, Esq., Rockshaw, Merstham, a good plant of this fine shrub. It was planted at the end of a foot-bridge which spans a little ravine, where it had evidently found a congenial home. It had thrown up a number of its sucker-like shoots, which were flowering very freely, and which hung in a charmingly graceful manner over the edge of the ravine. The soil in which it was growing is not of a very inviting character, being stiff adhesive clay, which curiously enough rests on a white sandstone — that which is dug and used by housewives for whitening the hearthstones. However, it was particularly happy, and was thickly covered with its curious racemes of flowers, which terminate the shoots and branchlets. The large purplish leaf-bracts which surround the whorls of flowers are perhaps quite as showy as the small whitish-purple flowers; but I think the plant looks best when the flowers have given way to the small berried fruits, and while the bracts are still fresh; indeed, the fruits of many of the Caprifoliaceæ, to which order this monotypic genus belongs, are often the showiest part of the plant, or at all events give additional interest after the flowers are gone. Although introduced to gardens many years ago, it is not often met with. It is easily propagated by seeds or cuttings, in the same way as most deciduous hardy shrubs. *F. R.*

Plants and Their Culture.

Greenhouse Bulbs.—The stock of bulbs for early flowering should have been got in, and some Roman Hyacinths and paper-white Narcissus may be potted up at once. Place them in ashes with a slight covering of cocoa-fibre, and they will not require any forcing, but can be removed to the frames and house as wanted. A few of the earliest varieties of the Van Thol section of Tulips should be potted now for use during the early winter months, and Freesias, which deserve to be grown more than they are at present, may be seen to. Put them into a frame with a temperature of about 55°, having eight bulbs in a 48-pot, using a mixture of good turfy loam, leaf-mould, and well-decomposed manure, with a liberal addition of coarse sand, and covering the whole with fibre. Pot them up at three or four different times through the autumn, to form a succession. I find it a good plan to leave the previous year's bulbs in the pots without disturbing them; they are then plunged into ashes in the open after having been ripened off, and they flower profusely when started into growth the following season. Get in a few pots of the early African Tuberose and others at intervals for succession, potting firmly in a compost of good yellow fibrous loam, and withholding water till after the foliage appears. The temperature of a moist stove or intermediate house will suit them during the winter months; but bulbs for summer flowering will do well in an ordinary greenhouse. The early bulbs grow more freely if the pots are plunged in a temperature of 55° to 60°, and as the growth of the foliage increases give weak liquid manure. Schizostylis coccinea will also be found useful if potted up shortly, and a few pots of Galanthus should also be prepared. The stock of Lachenalias should be examined, and the early started bulbs, which will be in growth, shaken out of the old compost, repotted in a mixture of good loam, peat, and decomposed manure with an addition of a little coarse silver sand, placed in a cold frame, and watered sparingly till they are in active growth. Another lot of bulbs should be potted on in a month's time, and the last lot a little later still. Other bulbs which have been at rest will soon commence to grow, and those which it is intended to shift should be attended to before the new roots make any progress. Those which have got into a sour state from bad drainage should be placed in smaller-sized pots. Watsonias, Antholyzas, and other large growing bulbs require a larger pot space than the smaller bulbs, such as Ixias and Sparaxis; these latter will soon commence to grow, and should be shaken out of the old compost, repotted in the compost advised for other Cape bulbs, and placed in a cold frame to protect them from heavy rains; and as growth increases, the plants should be placed in a light airy position in the greenhouse near the glass to prevent the foliage from getting drawn. The application of a good fertiliser as the plants make their growth will be beneficial. When repotting these bulbs, they should be sorted out into sizes, and the large and small potted up separately. *G. Wythes, Syon House, Brentford.*

The Hardy Fruit Garden.

Although the proper time for planting fruit trees generally will not arrive for at least eight or ten weeks from now, it is none too early, where planting is to be extensively carried out, to commence the preparations of the soil, so as to have all in readiness. In the formation of new plantations the most important consideration is in the selection of a suitable site. This should be on a gentle rise towards the north, and well-sheltered from the north-east and north-west winds. To ensure anything like reasonable success, the ground should be well drained if required, thoroughly tilled, cleaned of couch-weeds, &c., and broken up to the depth of 2 feet. When ground is naturally good, very little is required in the way of preparation. Where heavy soils have to be dealt with, too much cannot be said in favour of road-scrapings, &c. This, if liberally applied, is of immense benefit to newly planted trees. When breaking up the soil, it is not necessary to bring the bottom to the top. Work into poor soils a plentiful supply of well rotted manure.

Wasps.—I do not remember ever having been so plagued by these. Plums, Cherries, and Gooseberries have been attacked before they were half ripe in such numbers as to almost completely strip the trees and bushes in a comparatively short space of time. The old system of hanging about the trees bottles three-parts filled with sweet liquids has, so far, had but trifling effect, and I almost believe serves to attract rather than trap them. The best trap is that made of handlights placed one on the top of the other. The bottom being rested on bricks a few inches from the ground, in the top of this a couple of holes are made for the wasps to pass through into the upper light. Pieces of Pears or Apples should be placed under the bottom one as a bait. But while attending to these traps, do not neglect to destroy the nest if it be found. *H. Markham, Mereworth Castle.*

The Kitchen Garden.

Endive.—A large breadth of this may now be planted out on warm sheltered borders from successional sowings, thinning the curled varieties to a distance of 12 to 15 inches from plant to plant; in the case of the most curled, 9 inches will be sufficient. The plants left in the seed-rows will be ready for use before those which have been transplanted. Plants put out now will form the bulk of the winter supply, and should be so arranged that protectors or frames may be placed over them. More advanced crops of Endive will now be ready for blanching, which can be done by placing slates on the top of the plants, or by gathering all the leaves in and tying them up at the point. Tie up other lots at weekly intervals, so as to secure a succession, always seeing that the plants, are perfectly dry. Seed should now be sown for the late spring supply, and this may either be done in the open on a sheltered spot or in a cold frame, the plants being thinned-out to allow free circulation of air. Broad-leaved Batavian, Frazer's Improved, and Digswell's Prize are the best varieties for this purpose, as they are not so susceptible of injury from cold as are the curled varieties.

Lettuce.—A large quantity of Cabbage and Cos varieties should be planted on sheltered borders, to meet the winter's demand; more seed should also be sown, and the young plants thinned out, to allow of free play of air; and the thinnings may be pricked out along the foot of the wall. Hardy Hammersmith Brown or Bath Cos is an excellent sweet, tender kind in spring; Brown Dutch is a good old hardy variety; those, with All the Year Round and Hick's Hardy, will meet requirements.

Tomatos on the open walls will require frequent attention, removing all lateral growths, leaves which shade the fruit, and all flower-spikes. When the fruit shows signs of colouring, it may be cut with the stalk attached, and hung up in a dry room to mature.

Potatos.—All the early crops should now be taken from the ground. The second earlies should be lifted and stored as the tops decay, the sets for next year spread out thinly on shelves in a dry airy shed, where they can get thoroughly matured, after which they may be stored in a frost-proof place, or put in the clamps till required. *W. M. Baillie, Luton Hoo Gardens, Luton.*

Coreopsis Lanceolata. — The annual Coreopsis are well known and greatly admired for their large and very showy flowers; but C. lanceolata is more desirable than they, as it is a perennial, and lasts much longer in bloom. I first made its acquaintance at Mr. Thomson's, of Ipswich, who has introduced so many good things, and who had this in his grounds, where it was flowering with much freedom. As the season is favourable no doubt it will seed freely, and if so plants may soon be raised and distributed, and if not, like most other herbaceous things, it admits of ready increase by division, and a stock may soon be worked up in that way. *J. Sheppard.*

Italian Vines.—These seem, from our correspondence, to be in a bad way indeed. Some are affected with the American mildew (Peronospora viticola), others with Oidium, others again with a moth allied to the Ermine moth, which spins webs amongst the berries, and ruins their appearance; to say nothing of Phylloxera, which has now extended itself over the greater part of Italy, in spite of the Phylloxera regulations, whose futility we urged upon the Italian Government several years ago. The Vine production of Elba, where a wine like port wine was yielded, has been almost entirely annihilated.

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY, AUG. 20—Basingstoke. Calne (Wilts).

WEDNESDAY, AUG. 21—Shrewsbury (two days).

THURSDAY, AUG. 22—Royal Horticultural of Ireland. Royal Horticultural of Aberdeen (three days).

SALES.

MONDAY, AUG. 19—Dutch Bulbs, at Protheroe & Morris' Rooms (Trade).

WEDNESDAY, AUG. 21—Dutch Bulbs, at Stevens' Rooms.

THURSDAY, AUG. 22—Dutch Bulbs, at Protheroe & Morris' Rooms (Trade).

FRIDAY, AUG. 23—Imported and Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, AUG. 24—Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—61°.5.

The Chiswick Vegetable Conference.

ALTHOUGH information relating to the coming Vegetable Conference to be held at Chiswick has been for some time before the community, through the ordinary annual programme of the Royal Horticultural Society, yet there seems to have been largely existent considerable doubt as to its real purport and objects, as well as some ignorance as to the Conference altogether. We can now refer our readers, and especially gardeners and others particularly interested in vegetable culture, to an advertisement which appears in another column, and still further to the revised schedule of the Conference, which the Council has at length, though much too tardily, issued. However, better late than never, and we trust in this case not only will the schedule not be too late, but that it will also serve in a very wide degree to arouse interest in the Conference, and lead many to determine not only to attend it, but also to take, through exhibiting, or in some other way, a practical part in the proceedings. Happily, the Conference falls at a time when there is a lull in exhibitions of the ordinary competitive type. Those of the autumn will be over, those of the early winter will still be remote. Happily, further, the end of September will find many gardeners less busy than usual, and therefore these things should work in favour of a large attendance at the Conference.

But so far as products are concerned, whilst there can be no doubt that generally the season has been very favourable to the production of excellent vegetables, there is yet further the fact—and it is one in this case of especial interest—that the time of the year admits of representatives of all the leading winter and main crop vegetables being exhibited. Earlier in the year we could have hoped to have represented only those more fleeting summer vegetables which are so acceptable in their season, but which do not become store or permanent crops in the same way that Potatos, Onions, Brassicas, Turnips, Celery, &c., do, therefore there is exceptional reason to be grateful that the Conference has been fixed at the end of September, as it satisfies so many requirements. A perusal of the revised schedule will reveal the fact that all the invited products are classified under proper heads, such as green vegetables, fruits and pulse, tubers and bulbs, taproots, saladings, &c. In this way there will be found room for method, so that products of a very diverse nature may be not mixed up in the higgledy-piggledy fashion too often seen at vegetable exhibitions.

One of the special objects of the Conference is to enable selections of the best character and types to be made, and that can only be accomplished by the committees of selection, adopting some convenient form of classification. The committees, it is understood, are each to consist of three experts, and are so arranged that, whilst one may be a member of the seed trade, two at least are to be private or market gardeners. It need hardly be said that nothing is so little desired by the Council of the Royal Horticultural Society, or the committee entrusted with the arrangements of the Conference, as that any undue trade objects should be served, or any that all the trade may not equally participate in. To deal with the exhibits in selecting types and characters, and in awarding certificates of merit to subjects of special cultural merit, it is really desired that all purely trade considerations may be kept out of sight.

Assuming, as we most heartily do, that now that such wide publicity to the Conference has been given, a large body of gardeners and others will send vegetables to Chiswick, we would point out that whilst the committees of selection must of necessity be limited in number, yet every intending exhibitor may become an expert for himself, by selecting at home not only his very best products, but in setting up a high standard of excellence in relation to them. We want to see nothing simply big, because mere size never was an evidence of quality, although it may happen that sometimes, though rarely, size and quality may be found conjointly. No type is best evidenced in size, rather the most suitable character is found in medium dimensions, including good form, cleanness, and freshness. Better that the exhibits be found thin in quantity than crowded through inordinate size and coarseness. We hope that the Conference will demonstrate to the public, which will it is hoped flock in numbers to Chiswick, that vegetables have elements of quality and of beauty, little understood by the people, and that in pretention, kitchen garden and field products may make up a display, such as may warrant the adjectives of surprising and beautiful. It will be well to call attention to the necessity for very legible and correct naming of all exhibits, and it would also materially help the committees were each exhibitor to append all names under which each variety has been known to him, assuming that it has come to him through several sources. A proviso, it will be seen, has been inserted in the schedule to the effect that "in determining names, priority of origin or introduction will be followed as far as practicable." That is evidence of good faith on the part of the committee, and exhibitors may of themselves materially assist in the elucidation of what may sometimes prove to be a chronological difficulty by adding dates to their nomenclature. The case illustrates how necessary it is that we should have a recognised register of dates and names in relation to new or assumed new products, which might thus become an authority admitting of no question. Perhaps if it went so far as to refuse recognition of name to all non-registered novelties or products, it would hardly be going too far in the interests of vegetable cultivators and of the seed trade.

Novelties will, we hope, be duly represented, for it is much to be regretted that our choice in the matter of vegetables is so limited, when there is so vast a mass of untried plants suitable for experiment and trial. The commercial element is also one that will, we trust, not be left out of sight, for there can be no doubt that at least a partial remedy for the depression in agriculture may be found in the extension and development of vegetable culture, particularly as regards forced products and the growth of really superior samples coming into use at a propitious moment.

We note with satisfaction that full recognition of the fact that the Conference must depend for its success upon the support of the gardeners of the United Kingdom, has been afforded by the Council of the Royal Horticultural Society and the Conference Committee. As evidence of that, we point to the cordial acceptance given to the proposal to hold in London during the Conference—the evening of the first day being, in fact, selected—a gardeners social gathering, over which the popular chairman of the Conference, Mr. H. J. VEITCH, will very fitly preside. It has been already determined that the Cannon Street Hotel shall be the place of meeting; that a dinner, the inevitable festival of Englishmen, will form the chief element in the gathering; and that, in conjunction with it, every effort will be made to offer to gardeners from all parts of the kingdom a hearty personal as well as collective welcome. As the room area is necessarily limited, it is hoped that preference will be shown to applications for tickets from gardeners; but, as seems to be probable, the desire to attend what will prove to be an unique gathering, requests for tickets should be made at the earliest possible date, to save from disappointment. Not only is it purposed to make the gathering bright and pleasant, but Mr. VEITCH, with some other well known horticultural leaders, will personally welcome everyone attending at a reception, so that to partake in that pleasing preliminary, each person should make it a point of attending half-an-hour before the dinner begins. With very considerable confidence do we look to the gardeners to help make the coming Conference a great success.

TOMATOS UNDER GLASS.—As the cultivation of Tomatos under glass is now receiving a large share of attention, the accompanying illustration (fig. 27, on p. 191) will doubtless prove of interest to our readers. The crop is a heavy one, and at the time the photograph was taken "some of the plants were bearing as many as seventy-five fully developed fruits, weighing from a quarter to three-quarters of a pound each," says Mr. JAMES WRIGHT, of Granby Street, Leicester, in whose nursery the house is to be seen. Mr. WRIGHT continues:—"The house shown is a new one, erected last autumn, and measures 40×12 feet, and about 5 feet to the ridge above the ground-level. It is heated by flow-and-return 4-inch pipes running round it, and the walk is sunk 2 feet. The Tomato shown is Wright's Selected Red, and the plants were potted early into 8-inch pots, and stood close to the pipes on the natural earth, which is of a light sandy

nature, and they have no doubt rooted through into it. No special cultivation, beyond the application of a little liquid manure, has been practised. The fruit is very fine, handsome, and smooth, of a rich colour the flavour."

Orchid Nomenclature.—In pursuance of the resolutions passed at a recent meeting, the Council of the Royal Horticultural Society at their meeting on Tuesday last, decided to request the following gentlemen to form a committee, for the purpose of drawing up rules which they consider should be followed in the naming of Orchids [for garden purposes understood]:—Sir Trevor Lawrence, Bart., M.P., President of the Royal Horticultural Society; Messrs. H. J. Veitch, F. Sander, H. Williams, J. O'Brien, N. Cookson, W. J. Thompson, and F. W. Burbidge. The Director of the Royal Gardens, Kew, and the Keeper of the Botanical Department of the British Museum, are to be requested to nominate each one member to act on the Committee. The Council is of opinion that, considering the circumstances under which this matter has arisen, it would be better, in the first instance, to confine the consideration to the nomenclature of Orchids, although in all probability any rules that may be laid down as applicable to Orchids will be found to apply to all other plants. Dr. Masters was requested to act as Hon. Secretary to the Committee. In compliance with this official edict, we may say that the Committee will be summoned after the long vacation, when probably a rough scheme will be presented as a basis for discussion. In the meantime, the Hon. Secretary to the Committee would be thankful to receive suggestions on the subject from Orchid growers and others, to be addressed to him at the Royal Horticultural Society, 117, Victoria Street.



Fig. 27.—A tomato house. (see p. 190.)

Gardeners' Orphan Fund.—Mr. W. H. Divers, of Ketton Hall Gardens, Stamford, informs us that £2 12*s.* 1*d.* will accrue to the fund as the profits from the opening of those gardens, by Mrs. Hopwood's permission, on Bank Holiday, August 5, which is very satisfactory, when it is remembered that the day was a wet one. We have before us a notice that the Hon. Emma L. Shaw-Lefevre will kindly allow the gardens of Heckfield Place, Winchfield, to be opened on the 24th and 26th inst., when a charge for admission will be made on behalf of the fund.

A special meeting of the committee took place at the Caledonian Hotel on the 12th inst., Mr. George Deal in the chair. The Hon. Secretary brought up the Dinner accounts, which were of a highly satisfactory character, and announced that the sum of £111 8*s.* 6*d.* had been subscribed in response to Mr. Veitch's challenge, thrown out at the annual dinner, and a letter was read from Messrs. J. Veitch & Sons, enclosing a cheque for £100. It was unanimously resolved that, in consequence of the sum having been raised, R. J. Todd and Olive Chapelow, the two highest on the poll of the unsuccessful candidates of the recent election, be placed at once upon the Fund. Mr. Assbee brought up the names of the forty standholders who have been selected from among that body as life voters under section *b* of rule xii., and the same were ordered to be added to the list.

The Vegetable Conference at Chiswick.—At a meeting of the committee, held on Tuesday last in the Council-room of the Royal Horticultural

Society, Mr. H. J. VEITCH in the chair, the revised schedule was presented, and will be forthwith distributed. The only alteration from the schedule issued in January is in classification, the vegetables to be represented being the same as originally announced. Mr. SHIRLEY HIBBERD was appointed Deputy Chairman of the committee, in view of Mr. VEITCH'S absence during the next few weeks, and a Sub-committee was nominated, consisting of Messrs. A. DEAN, H. HERBST, J. HUDSON, J. WRIGHT, G. WYTHES, with the Deputy-Chairman and Secretary, Mr. A. F. BARRON, to make the necessary arrangements for adjudication and other matters; also for the dinner of gardeners, nurserymen, and friends, to be held at the Cannon Street Hotel on the first evening of the Conference, Tuesday, September 24. As the price is to be 5*s.*, a large gathering may be expected, and it is thought the date may be convenient for several country gardeners and provincial seedsmen making arrangements for visiting London on the occasion. With the cordial co-operation of growers of vegetables, a large, diversified, and enjoyable gathering may be expected. The Conference will then be what its promoters hope—a great success.

"BOTANICAL MAGAZINE."—The plants figured in the August number are—

Stapelia gigantea, t. 7068, the huge Stapelia figured in these columns in 1888, p. 728, f. 101.

Catasetum Garnettianum, t. 7069; a species resembling Myanthus barbatus, with linear green segments with broad red bars. See *Gard. Chron.*, 1888, vol. ii., p. 622.

Grevillea asplenifoliæ, t. 7070; a well-known greenhouse species, with linear coarsely toothed leaves, and one-sided spikes of pink flowers.

Berberis angulosa, t. 7071; a handsome Himalayan species, with tufts of simple obovate leaves, trifid, spiny, and axillary yellow flowers, succeeded by oblong red berries.

Anoiganthus breviflorus, t. 7072; the yellow-flowered Amaryllid recently figured at p. 557, May 4, 1889.

CATS!—A beautifully illustrated and pleasantly written work on cats, and their several varieties and peculiarities, will shortly be issued. We have been favoured by the artist-author, Mr. HARRISON WEIR, with a sight of an early proof copy, which enables us to say that the work is sure to find favour, not only with cat-lovers, but with admirers of art and literature.

"KEW BULLETIN."—The August number is entirely taken up with an account of the fluted scale insect (Icerya Purchasi), which is a most destructive pest in South Africa, New Zealand, California, and elsewhere, attacking Orange trees, Apples, and, indeed, "all sorts of plants." "This insect has made profitable orange-growing on the Pacific coast more difficult, and more of a science; but by making it impossible at the same time for the shiftless to succeed in their business, it will come to be looked on as a not unmixed evil."

THE JARDIN DES PLANTES.—Professor CORNU, the Director, has issued a list of plants cultivated in that garden, and available for exchange. It is rich in interesting species. Applications should be made to 27, Rue Cuvier, Paris, before September 1.

"JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY."—A new part has just been issued, good in itself and notable as holding out the hope that the publication of the *Journal* will be more regular in future than it has been in the past. A large body of the Fellows, resident in the country, cannot avail themselves of the meetings, the Chiswick Garden, the library, and other privileges open to metropolitan members. To such persons the regular publication of the *Journal* would be a boon, and serve to keep them informed as to what is being done at head-quarters. Guinea Fellows, moreover, seem not fully to realise what privileges are open to them at Chiswick, or their numbers would be largely increased. The present part contains matter of very high average merit and importance, comprising, as it does, Mr. BAKER'S paper on "Saxifrages," followed by that of Mr. GEORGE PAUL and Mr. REUTHE on their culture. Hyacinths are treated of by Messrs. BAARNART, KERSTEN, and DOUGLAS; Narcissi, by Messrs. BURBIDGE, ENGLEHEART, and TAIT; the Auricula, by Rev. F. D. HORNER; and last, not least, is the very suggestive and interesting paper of Mr. VEITCH on "Orchids, Past and Present."

NEW RACE OF GLADIOLI.—The specimens exhibited on Tuesday last by Messrs. VEITCH of the new Gladioli raised by M. LEMOINE, of Nancy, and of which Mr. GUMBLETON has expressed his opinion at p. 154, attracted much attention. They form one more illustration of the excellent results to be obtained from judicious experimenting and breaking new ground, rather than perpetually harping on one string. We shall have other opportunities of alluding to these novelties.

BOLTON AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY.—The members of this Association held their second annual outing on Wednesday, the 7th inst., visiting the nurseries of Messrs. DICKSONS, Limited, and the residence and gardens of His Grace the Duke of WESTMINSTER, at Eaton Hall, spending a most enjoyable day.

ROYAL BOTANIC SOCIETY.—The fiftieth anniversary of this Society was held in the gardens on Saturday, August 10, Mr. JOHN BIRKETT in the chair. The reports of the Council and Committee of Auditors for the year were read. From these it appears that though the competition of the present is more severe than at any previous time in its history, the year has been a very successful one. The accounts submitted show a gratifying increase in every branch of revenue over the last and for several previous years. The number of Fellows elected—viz., 109—is above the average, and the receipts from the various exhibitions amount to £4,022 6*s.*, making, with subscriptions, &c., a sum total of £7,378 13*s.* 7*d.*, or an excess over last year of above £2,000. In the more scientific work of the Society the same improvement is seen: 744 students have received free admissions of from one to three months each, and 42,000 specimens of plants and flowers cut for study and examinations by the various colleges, hospitals, and medical schools in London. The collections of medicinal, economic, and interesting plants have been largely increased, and their usefulness added to by more favourable disposition and greater space being granted them. His Highness the Duke of TECK, and Mr. H. L. ANTROBUS, were re-elected president and treasurer, and the meeting closed with unanimous thanks to the President, Council, Secretary, and executive officers.

MANCHESTER FLOWER SHOW.—Under the auspices of the National Carnation and Picotee Society (N.S.), the annual exhibition was held at the Royal Botanical Gardens, Old Trafford, on Saturday, the 10th inst., when, although the weather was unfavourable, the attendance was good. The exhibitors were numerous, and represented a wide area, and the show was excellent, especially in Picotees. There was also a display of Gooseberries, for which the Carnation Society offered prizes. Some of the berries were of enormous size, one weighing 24 pennyweights 14 grains. The principal prize-winners were Mr. J. HARVEY, of Stone, and Mr. J. THRELFALL. Not the least attractive part of the exhibition was a beautiful collection of Begonias, including some fine double varieties, from the nurseries of RYDER & SON, Sale, to whom the Council of the Botanical Society awarded a gold medal.

CHEVALIER DU MERITE AGRICOLE.—An amusing mischance has occurred with reference to this distinction, which is conferred by the French Government upon agriculturalists and horticulturists of eminence. Amongst others, the distinction was lately accorded to M. X., "an artisan practising horticulture with success." It appears that the "industriel" in question is a clerk in the employ of the drapery firm known as "la belle Jardinière." This gentleman disclaims all knowledge of horticulture, and has returned the insignia and diploma to the Minister of Agriculture.

STOCK-TAKING: JULY.—Those who base their estimates of prosperity on the "imports of chemicals, &c.," will be contented at learning that those for the past month are in excess of July, 1888, by £131,264. But there is a large decrease for the month under §II. (B.), as will be seen in the annexed "summary" of the imports from foreign countries and British possessions. Under the seven months' summary there is, however, an increase of £432,527 as against the corresponding term last year. Here are our usual excerpts:—

	1888.	1889.	Difference.
	£.	£.	£.
Total value of imports	30,706,412	35,873,247	+5,166,835
§II.—(A.) Articles of food and drink—duty free	11,270,117	12,306,213	+1,036,096
(B.) — do., dutiable	2,400,647	2,028,721	—371,926
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	3,734,640	5,073,477	+1,338,837
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,731,094	5,009,843	+1,278,749
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	965,976	1,064,472	+98,496

The following extracts from the general returns will be found of interest to all:—

	1888.	1889.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	43,786	12,968	—30,818
Unenumerated, raw ... ,,	375,923	345,697	—30,226
Onions ... ... ,,	221,210	200,161	—21,049
Potatos ... ... cwt.	959,579	551,090	—408,489
Vegetables, raw, unenumerated ... ... Value	£58,209	£87,224	+£29,015

ATHERSTONE HORTICULTURAL SOCIETY.—This Society held its tenth annual exhibition on Monday, the 5th inst., Mrs. Dugdale again kindly lending the beautiful grounds of Merevale Park for the purpose. The exhibits throughout were very superior, and occupied seven tents, two of them were 120 feet long. One of the large tents was filled with specimen plants and groups 18 feet by 11 feet, crescent shaped, and made a grand display. The groups, four in number, were exhibited by Mr. Parker, Victoria Nurseries, Rugby; Mr. Allum, nurseries, Tamworth; Hanson Sale, Esq., Atherstone (gr., Mr. Mason); and Mrs. Dugdale, Merevale Hall (gr., Mr. Brown), and prizes were awarded in the order of the names. Specimens plants were very good. From Appleby Hall (gr., Mr. Holder), the best small group came. The cottagers made a grand show, and the competition was keen. Cut flowers, vegetables, and fruit from professional gardeners made a fine display, and amateurs were also well represented.

GENTIANA GERMANICA.—In Mr. A. de ROTHSCHILD'S woods at Halton, near Tring, this beautiful species, if species it be, is growing intermixed with G. Amarella. The flowers are much larger and paler blue than in the last named species, and the leaves are also larger, paler in colour, and not so reflexed at the margin. There is a good figure of G. germanica in an early volume of SEEMANN'S *Journal of Botany*, but the specimen figured is small in comparison with those now to be seen at Halton. We were indebted to the late Rev. H. HARPUR-CREWE for our first knowledge of this plant. As seen in the woods at Halton, it looks abundantly distinct from Amarella,

with which it grows in company, but no doubt careful search would serve to disclose intermediate forms.

St. Neot's Horticultural Society.—The twenty-fifth annual exhibition of this Society took place in the extensive and well-timbered grounds of Priory Park on August 5. The principal exhibitors of plants were Mr. Redman, gardener to J. H. Goodgames, Esq., Eynesbury; Mr. Thomas, gardener to Lord Esme Gordon, Paxton Park; Mr. Smith, gardener to Miss Chere, Papworth Hall, St. Ives; and R. L. Towgood, Esq., who had some very fine specimens of flowering Begonias. Cut Roses were admirably shown by E. B. Lindsell, Esq., Hitchin; Mr. Redman being also to the fore in several leading classes in the cut-flower division. Fruit was good for the district, and vegetables very fine indeed. Mr. Myers, gardener to the Earl of Sandwich, Hinchingbrook, was 1st, with six dishes of Potatos—a very good lot indeed. Mr. Myers had the best basket of ten varieties of vegetables—very fine throughout. Messrs. Wood and Ingram sent a collection of Dahlias; also of Carnations and Picotees.

NOTES FROM THE PARIS EXHIBITION.

The attempt to grow the Victoria Regia in the open air in artificially-heated water in a pond in the grounds near the Brazilian Pavilion at the Paris Exhibition, has been so far successful. Three plants are pushing their leaves vigorously, and have at present a diameter of about 2 feet.

A product shown, which seems peculiar to Bolivia, is dried frozen small Potatos, white and black, under the name of Chunos; they are said to keep long, and are very useful as a food product. Being gradually frozen they lose their moisture, vegetation is arrested, and no subsequent fermentation takes place. Before they are used, they are soaked for twenty-four hours in water, when they swell and are roasted between two layers of straw.

Dried slices of Bananas and Plantains are shown in the Chili section. Another product of local importance is the leaves of Erythroxylon Coca, of which numerous samples are exhibited, as well as Elixir of Coca, and other preparations of the kind which have obtained some repute in Europe. Peru also show the leaves, and sends Legumes, &c., in bottles.

One remarkable feature in the exhibits from the Spanish colonies is the large display and great variety of Pulses shown, under the name of Prijokes, Garbanzas, Feves, Haricots, &c., evidencing how extensively Beans and Peas are used as articles of food. A collection made of these would be curious, as showing the singular variety of shape and colour of the seeds.

Another noticeable feature is a black-seeded Maize shown in Bolivia and Mexico, which is of a rather unusual colour—although the grain cobs of this cereal are met with in all varieties of colour. In Bolivia, this grain is used for making chica, the popular fermented beverage of the country, as, indeed, of most of the South American [republics. The colours of Maize depend on that of the epidermis; numerous varieties are grown in most of the South American States, as there are in the great North America Republic, where the annual crop of Maize now ranges from 1700 to 2000 million bushels annually.

Of medicinal plants there are many large collections shown. The Minister of Agriculture of Mexico sends several hundred bottles, but as yet they have not been named, although there are evidently papers in the bottles giving names and particulars.

In the pavilion of Bolivia, there is a good collection of pharmaceutical products, in bottles shown by Quino Brothers, but they are not botanically named, although a few can be identified, such as Guarana in rolls and fragments; Algarobilla pods, for cholera; Contrajerva, for snake bites; Agi, or dried Capsicums, &c., and a good collection of Cinchona barks.

In the Uruguay section there is a good assortment of medicinal and other plants in bottles from Maldonado.

In the United States Agricultural Section there are sixty-four framed specimens of foliage and seeds of trees, and 102 specimens of seeds of forest trees in bottles, and small maps framed, showing the locality and diffusion of each kind. *Our Special Correspondent.*

Cock's-combs at the Paris Exhibition.

In the grounds of the Trocadero are two magnificent beds of these plants, which from a bedding-out point of view are extremely novel and effective. One plant which we were allowed to measure was 2 feet 4 inches across the crown, and 10 inches over the top, the height of the plant being 18 inches. All are not so large, but a great number seemed almost of equal size. They form an exhibit by Mons. Lecaron (late Paul Zollard), 20, Quai de la Mégisserie, Paris, whose representative gives the following points of culture:—The seeds are sown in March on a warm bed, and the seedlings are pricked out also on a similar bed. Pot-culture is avoided. When frost is no longer to be feared, the plants are planted out in well-manured soil, and in a warm position, and are freely watered during hot weather. They last in good condition about four months. The plants here referred to are in baskets, which probably amounts to planting out, as the roots would, no doubt, go through. Thirteen colours are offered, though all, judging from those we saw, are variations of red and yellow, approaching to white from both. Such beds as these would be very striking about London, but whether the climate is good enough for them is another matter. It might be, because it is evident that in Paris the fine development is due chiefly to their early culture. *R. I. L.*

BOOK NOTICE.

Timber and some of its Diseases. By H. Marshall Ward, Professor of Botany at the Royal Engineering College, Cooper's Hill. (Macmillan & Co.)

This is a book whose appearance we hail with great satisfaction. Forestry in general—apart from mechanical routine—is so wofully behindhand in this country, and any useful knowledge of plant diseases limited to so very few, being well nigh ignored by those whom it most concerns, that any work which will alter this condition of affairs is to be accepted with acclamation.

Professor Ward has won for himself a high reputation as an accurate observer, a skilled microscopist and draughtsman, and a thoughtful physiologist. This book shows that lucidity of exposition and appreciation of practical requirements may be added to his qualifications. The earlier chapters of his volume are occupied with an excellent account of timber and its structure, illustrated by good woodcuts, which offer a welcome relief to the old stagers used in most British text-books. Then follows a long chapter on the ascent of water in tall trees—a chapter which physiologists will be thankful to get as an able summary of the existing state of knowledge, and we must add controversy, on this subject, but which we cannot help thinking would have been more appropriate in another place. The discussions on the merits and demerits of rival theories and hypotheses are hardly likely to inspire practical readers with much confidence. Professor Ward's opinion, it may be stated, are in harmony with those of Godlewski and Hartig. According to these root-pressure, osmotic force, transpiration from the surface, and capillarily, all of them mechanical forces, it may be noted, must be supplemented by the work carried on in the living cells of the wood and the medullary rays. These cells are the seat of chemical action; they breathe, and as a result they act alternately as suction and as force-pumps, absorbing at one end by osmosis, and expelling the fluid at the other by virtue of their contractible protoplasm, such contraction being a result of the respiratory changes in the protoplasm.

The latter half of Prof. Ward's volume is devoted to the consideration of the mode of growth and the effects on living or dead timber of various fungi which may be taken as typical of others. In detailing these effects Mr. Ward has had the advantage of studying the collections of Prof. Hartig, of Munich, and of availing himself of some of the illustrations from that writer's *Lehrbuch der Baumkrankheiten*. In turning over the pages devoted to dry rot, "canker," and similar subjects it is refreshing to get away from the guesses and unsupported assertions of those who have not the means of making the requisite investigations, but whose confidence in the enunciation of their opinion is by no means lessened by that circumstance. The latter chapters deal with fungi affecting the leaves, and with the condition known as "damping off" of seedlings—a condition due to a fungus which is own brother to the Potato murrain. How great is the interest attaching to the book is surely obvious from what we have said. It is, however, confined only to a few points, but we trust Prof. Ward may speedily give us a general text-book on the subject of plant diseases, and the rational methods of dealing with them. In the meantime we are grateful for the present instalment, and heartily recommend its perusal to those concerned.

CULTIVATION OF POTATOS.

In a report of some recent investigations on the cultivation of the Potato, by Prof. A. Girard,* it was shown, by a large number of experiments, that although small Potato tubers may have great reproductive power, yet the weight of the total yield, when ripe, is comparatively small. Medium-sized tubers when used for seed, gave practically the same final result per acre as the largest tubers, and are therefore stated to be the most economical for seeding purposes.

The importance is enforced of selecting seed tubers from vigorous-growing plants, since even large tubers obtained from small and meagre plants usually give inferior crops.

It was also found in these experiments that the most luxuriant plants were associated with the most vigorous aërial vegetation.

This law of propagation, that there is a constant relation between the weight of the seed Potato and the vigour of plant developed, and the great difference in the propagating value of the different eyes of the tuber, was strikingly illustrated twelve years ago by some experiments on the Potato, by Franz, which were conducted by him in a garden soil. The description of the experiments is given in the following table, which also shows the yield of Potatos under the different systems adopted in tons per acre.

Method adopted with the Seed.	Yield per acre.
	Tons.
Tubers divided in their length	5
Whole tubers planted	7½
Crown-half of tubers planted	9¾
Whole tubers, eyes other than crown removed ...	11½

These results show that the increase of crop more than repays the increased weight of seed employed. The reason of this superiority of large seed is easy of explanation. During the period of early growth the plant derives its nourishment entirely from the seed Potato, and its vigour will depend on the amount of nutritive matter placed at its disposal. If the early growth is vigorous, a hold is sooner obtained on the soil, and a larger and better matured crop is the result.

It is further shown that the crown-eyes yield by

* *Comptes Rendus*, 108, pp. 525—527.

far the most prolific plants. Franz demonstrates, therefore, that the very best results are obtained when large Potato seed is used, all eyes excepting those of the crown cut out, and the whole remaining Potato tuber planted. If Potatos are cut for seed, it is recommended that they should not be cut in their length, as is the more usual custom, by which the crown is divided, and eyes of all kinds introduced into the seed, but they should be cut across, the half containing the crown-eyes planted, and the other half consumed as food.

The degeneration of varieties of Potato is believed by some German experimenters to be largely due to repeated propagation from small Potato-seed and feeble buds. *J. J. Willis.*

The Bulb Garden.

No season of the year is more crowded with necessary operations than the present time, for it is now that we have to determine what shall be lifted, and what shall remain in the ground. Many bulbous plants deteriorate to a very great extent if allowed to remain for more than one season in the ground, particularly if the soil be at all badly drained or heavy, a condition not likely to suit many bulbous or tuberous-rooted plants at all. On the other hand, many bulbs are of inferior quality the first season after planting, and gain strength considerably in the second season. Of no plant is this more noticeable than in the Emperor Daffodil, whose foliage and flower-stalks rarely attain more than 18 inches for the former, and 10 inches or a foot for the latter, the first season after planting; while in the second season, if left undisturbed, the flower-stems will reach fully 18 inches high, and its fine foliage to twice that length. There are other things, however, which do seriously deteriorate if not lifted annually, and probably none more so than Tulips, and for this reason: the outer coat or skin of the Tulip is exceptionally hard and tough, and does not readily decay, as do others with softer skins; and, further, their mode of increase is so rapid—for a fair-sized flowering bulb will produce in some varieties three and four "chickens" in one season, though all are not equally prolific—that the offsets, being encumbered by these hard skins, have not the chances of putting forth their roots into the soil, and are thereby crippled, the bulb does not make half its growth, and a general weakness is the result; thus it is that we see clumps of Tulips which have remained undisturbed in cottage gardens for several years, producing, it may be, one or two sickly flowers where dozens might have been, had the proper treatment been adopted. Not only is this so in English gardens, for I learn from one of our largest growers of Tulips in Holland that it is equally true there; indeed, I ascertained in conversation that some clumps of the best Tulips had been planted in his private garden, and their behaviour, under the circumstances, was identical to that which I have just described. To attain perfection in Tulip culture, a generous treatment must be given them, and annual lifting is indispensable. Though much later than is usually recommended for lifting these, I would, in the case of breeders particularly, prefer to lift them even now, than weaken the offsets by allowing them to remain for another season, cleaning and replanting them as quickly as possible.

Next to the Tulips, the English and Spanish Irises are, perhaps, the most liable to deteriorate when left undisturbed in the ground for a year or two. The coats of skin upon the bulbs are very thick, and to keep the bulbs in good health for any length of time they should be annually lifted, cleaned, and replanted with as little delay as possible. It is not merely one or two weakly growers that deteriorate, but all, even the most robust, and for those who notice the general behaviour of such things under any given treatment the lines of procedure will be obvious enough.

Many growers and admirers of bulbous Iris know how well these do generally in the first year, and if let alone how unsatisfactorily they come up afterwards, a fact which has not unnaturally led many to suppose that they are really unsuitable to our soil or climate, but this not the case. Bulbous Irises may annually adorn our gardens to a much larger extent than now, the only difference being, that instead of spending money on their purchase, a very small proportion of it has to be expended in their annual lifting, cleaning, and replanting; and seeing how quickly they increase by means of offsets, anyone may soon be possessors of large quantities.

These offsets may stand a second season without disturbance, as the danger of deterioration does not arrive till the bulbs attain to flowering size, when producing offsets themselves; therefore by making two sizes of the bulbs, the number to be lifted annually would be considerably reduced. An important item in their culture is to keep them very dry when out of the soil, and to return them to their places as quickly as possible.

Another plant which, to a great extent, is unsatisfactory when left alone is Gladiolus Colvillei The Bride; not but what it is fairly hardy in most soils, and its requirements simple enough; it is, however, so closely akin to evergreen, that it springs into growth in early autumn when left in the soil, and thereby suffers during frost and snow, the new corm suffering in a corresponding degree. The simplest and safest plan is to lift it annually in August, and replant at intervals, if a succession be required, from the first week in March till the middle of May for the open ground; but if needed for forcing, pot early in October, and at intervals to meet requirements, keeping the young shoots secure from frost. It is simply surprising to what extent this plant may be kept dry with impunity, and if judiciously worked, its useful spikes of flowers may thus be had for a greater part of the year.

Anemones of the Hortense and allied sections as well as the Ranunculus require annual lifting, as a good drying appears to be to their benefit, in fact, with Anemone fulgens it is the only way to keep it in health; for some weeks past I have had abundance of flowers of the Poppy Anemone, also Persian Ranunculus from February planted stock, and a later batch of the scarlet wind flower. A. fulgens is just opening its first flowers.

Erythroniums are benefited by lifting every second or third year, as by this time they become crowded and require separation. Liliums may, if in good health be left for an indefinite period; but where replanting is deemed necessary, it should be done as soon as flowering is complete, it is just at this time that the new basal roots are emitted, and to preserve these intact should be the aim of all cultivators. *J.*

Fruit Register.

RASPBERRY SUPERLATIVE.

This, when it becomes better known and more plentiful, will be largely cultivated, as it is a fine thing, and a decided improvement on the good old Fastolf, as not only is it larger in size, but it is superior in flavour, and remarkable for its free cropping qualities. The plant produces stout canes, which send out branching shoots nearly their whole length, and which show and ripen well in long succession. *J. S.*

Alexandre Lambré Pear.

I surprised one of my market garden neighbours the other day by showing him a few trees on the Pear stock of this excellent variety—fruiting freely. I have found for several years that trees growing with moderate robustness, and as half-standards, fruit well almost every season, and it is with me by far the best cropper and most reliable of all Pears. Throughout market gardens one sees ten trees of the Hessle to any other variety, and the Hessle is, on the whole, the hardiest and most prolific of standard-grown Pears. It ripens fairly early, but has indifferent quality of flesh, and is poor in flavour. Alexandre Lambré, on the other hand, is not only very free, but the fruits are larger, keep till November, indeed till December in a cool store, and have soft, juicy flesh and excellent flavour. The trees send up from their upper branches strong growths, which set with fruit buds the second year, and becoming heavily laden with fruit the following year, are pulled down, so that the branches remain more or less pendent afterwards, and not a little for that reason, perhaps, are so fruitful. This drooping habit of growth prevents the trees from attaining great height. Were I going to plant market Pears, I should certainly put down many trees of Alexandre Lambré. I should also plant freely of Souvenir du Congrès, for that kind does superbly as half-standards also, and a further capital hardy Pear on the free stock is Nouveau Poit. There has been a little too much talk concerning quality in Pears, but the production of kinds which will be almost invariably productive as standard or half-standard trees has not been sufficiently regarded. *A. D.*

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

Early Pears.—In this district we have a very good crop of early Pears of such sorts as Citron des Carmes from which we have been gathering for the past ten days. This variety was a week earlier than Doyenné d'Été, both being on an east wall. Citron des Carmes is cracking rather badly, which, I believe, is owing to much moisture at the ripening period (and I shall be glad to know if other growers have experienced this); but it usually cracks on this soil. Williams's Bon Chrétien, Jargonelle, Louise Bonne of Jersey, and Marie Louise are all good. *W. A. Cook, Calne.*

Brambles.—There is abundant promise of a heavy crop of Blackberries this year, and now that the roots of the plants are thoroughly moistened, the berries should not only ripen well but be very fine. Thus we may find some of the shortcomings of our garden fruit crop made up for by the abundance of the Blackberries. On August 1, I gathered good ripe fruits of the Dewberry, Rubus cæsius, which is fully three weeks earlier than common Blackberries will be ready at the same place. It would thus seem that we have indigenous forms which are as early as the American varieties, and possibly were they but as carefully cultivated would turn out as fine fruit. The Dewberry so called invariably gives the more luscious form of Blackberry, but then it is the most uncommon; one may traverse miles of hedgerows without meeting with it. Not only are the fruits earlier, but the flowers are white, the foliage larger, whilst the habit of growth is more drooping. I have wondered whether the Dewberry may not after all be the product of some sort of a natural cross between the Raspberry and the Blackberry. [?] If it be not so, then it is a diverse species to the Blackberry, Rubus fruticosus, although so similar in habit and appearance. [Certainly. Ed.] It seems rather odd that whilst crosses between Raspberries and Blackberries seem only to have resulted in obtaining black Raspberries, the real gain would be found in securing a red Brambleberry. We all like good, ripe, clean Blackberries, but the staining of the mouth which results from eating them, is a material drawback to one's satisfaction. Who therefore will produce a red Brambleberry? Such a desideratum is worth working for. Hitherto, perhaps, the Bramble has been made the pollen parent; suppose the other form of hybridisation be tried, as the pollen parent often proves to be the most powerful element in crossing. *A. D.*

Buxton's Daffodil.—With reference to the article in last week's issue, I should like to state that A. juncifolio-muticus (Baker) was found by E. N. Buxton, Esq., Knighton, Buckhurst Hill, 1884. The date April must be a mistake, as Mr. Buxton

spends the Whitsuntide on the Pyrenees hunting the izzard, so that it would be June when he found this hybrid Narcissus between Gavarnie and Gedre. It was, I believe, in 1886 when he sent me a flower. This I forwarded to Mr. Baker, who named the Narcissus, and described it in the *Gardeners' Chronicle*. The same year, Mr. Buxton found N. moschatus in the valley where he spends his holiday. H. E. Buxton, Fritton Decoy, Yarmouth, sent to me from the Pyrenees in 1882 the fine form of Bernardi now known by his name. I trust the foregoing will meet Mr. F. W. Burbidge's inquiry of August 10. *P. Barr.*

NEW AGERATUM.—When walking through the London Zoo recently, I was very much pleased with the general effect of the bedding-out, and my attention was called to a new Ageratum in the flower garden raised by Mr. Young, from Cupid, one of the old standard sorts, but his novelty is of a dwarfer habit than the parent, not exceeding 9 inches in height, the trusses much larger and produced at the point of nearly every shoot. The colour is a violet-blue. It is quite distinct from anything we have at the present time, and I hope Mr. Young will send it out, and give the gardening public the opportunity of possessing themselves of a plant of merit. I believe it is designated The Zoo. *Wm. M. Baillie.*

REMARKS ON THE FRUIT CROPS.—The omission of the word *not* in my second sentence, top of first column, p. 128, entirely changes the sense. The sentence should read:—"Another (that is, disappointment) was the failure of the bloom to set, a failure *not* caused by frost." For the first time for many years the frosts of May were nil, or so slight as not to injure or blight the Apple or fruit blossom; and yet, in spite of this frostless and favourable May, we have little or no fruit. This is at once the deepest mystery, and the severest trial of this year, 1889. Again, Peaches and Nectarines are fairly plentiful. Apricots nil, a total and complete failure, and this over and over again, in the same gardens and on the same walls. Truly the mysteries of fruit growing and failing seem all but inscrutable and past finding out. There is yet another: when recording our total failure of Apples, I had not then noticed that about a dozen of spiral cordons close to the ground had escaped; most of these have a full crop, and, apart from them, I do not suppose we have a bushel of Apples in the garden and orchard combined. The general crop is in fact nil. Pears are but little better, and the quality of the fruit seems but a few degrees better than wood. Here, again, there are one or two exceptions, one of the most striking being Citron des Carmes. In the near neighbourhood, there are also some good Pears, one garden being wholly taken and another left. The crop is far more erratic of Pears than in the case of Apples, though here and there trees and gardens are left full of these also. But the Apple crop on the whole is the worst I have known in an experience of forty years in the Eastern Counties. *D. T. Fish.*

DOUBLE LILACS.—I must point you out an error of the press which was committed in *Garden and Forest*, where it is said, in the last paragraph, "and we have now obtained a variety with large pure blue flowers," instead of "we have obtained a variety with large pure white flowers." It is this double white variety which was so much admired at the Paris Exposition on May 20, where it was awarded a 1st prize by the jury. *V. Lemoine, Nancy.*

INSTRUCTION IN PRACTICAL GARDENING.—I notice an inquiry concerning "Instruction in Practical Gardening," and think your correspondent "Hortus" may care to know of this College, where lady students are received. I shall be happy to send a copy of the prospectus to any of your readers, and supply any further particulars which may be desired. *A. W. Bond, The Horticultural College, Swanley, Kent.*

FUCHSIAS OUTDOORS.—It is very doubtful whether there are many gardens of great pretensions which can show such a remarkable exhibit of outdoor-grown Fuchsias as may be seen in a front garden in the High Street, Egham, attached to the residence of Mr. Paice. This gentleman is possibly an enthusiast over Fuchsias. Certainly for many years he has beautified his front garden with many noble plants, blooming profusely for a long season, and evidencing cultivation which many who profess to grow Fuchsias for exhibitions might well envy. From the street gate to the front door of the house there are some iron arches, and on the other side of the uprights are plunged some noble Fuchsias. These, tied securely to the arches, have their tops brought over to nearly meet, and thus a perfect bower of Fuchsia flowers is formed. All about the garden, thickly stood, are fine plants in pots of divers kinds, alternating with tall standard Petunias, Tropæolums, and other plants, but Fuchsias dominate. The plants have ample pot-room, are liberally watered, kept securely tied, and have the decayed blooms frequently removed. Bush plants, also flowering profusely, are bedded out, so that the garden is emphatically one of Fuchsias, and the result is so beautiful a one that it is surprising many others have not followed Mr. Paice's example. Amidst the flower-garden fancies of the day, it is worthy of note that one of our finest and most beautiful of flowering plants still is permitted to display its beauties as an ordinary garden denizen. *A. D.*

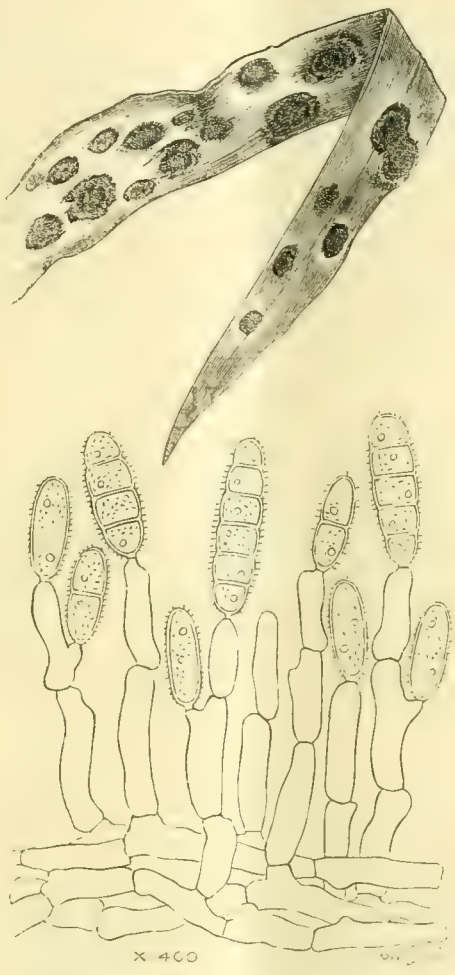


Fig. 28.—The carnation fungus. (see p. 199.)

NERINE ANGUSTIFOLIA.—Mr. Baker makes this a variety of N. flexuosa, but it is so widely different from that species as represented in gardens that we may be justified in separating it from N. flexuosa, for horticultural purposes at any rate. It appears to have first flowered in the gardens of the late Mr. Wilson Saunders, and was figured in the *Refugium Botanicum*, t. 329. So far as I know, it has not got into gardens generally, and I never saw it alive until it flowered recently at Kew. It came to Kew by means of a German resident in Zululand, who sent a collection of seeds collected principally on the Spitzkop, at about 11,000 feet, and the Drakensburg at 8000 feet. The Nerine was described as a "beautiful pink Lily, 3 feet high, grows in rich soil." The Kew plants were raised from these seeds, which were sown in May, 1887. It is remarkable that the plants have gone on growing steadily since that time, and they have been kept moist from the sowing of the seeds till now. This is exceptional in Nerine, the other species requiring a long dry rest yearly before they will flower. Flowering in July, too, when the other species are dried up and leafless, is another character, which, from a cultivator's standpoint, separates this plant from all the forms of N. flexuosa, and, indeed, from all other Nerines. The bulb of N. angustifolia is of the shape and size of a pigeon's egg; the leaves are 18 to 24 inches long, less than ¼ inch broad, deeply channelled, succulent, and shining green. The flower-scape accompanies the leaves, and is twisted, terete, ⅜ inch in diameter, from 2½ to 3 feet high, shining green, bearing an umbel of about twenty flowers springing from lance-shaped spathe-valves 1½ inch long; pedicels 3 inches long, covered with short soft hairs; flowers 2 inches across; segments 1⅜ inch long, declinate, rose-pink, paler towards the tips, where there is a green keel; stamens and style declinate. This is a handsome Nerine, and if crossed with such as N. curvifolia, they should yield a progeny of good robust summer-flowering kinds. *W. W.*

THE POTATO DISEASE.—Although appearing later and with less virulence than usual, the old enemy is creeping over our Potatos in garden and field. Few or no tubers have yet been seen badly affected. But the haulms have caught the disease, and the odour is evident. The enormous length and immature condition of the tops renders the high earthing-up of the tubers practically impossible or difficult. [Oh, no! Ed.] When tops are short and drills are wide apart this method is well worth a trial. By thus putting the Potatos in drills instead of in pits, they may indeed ripen in safety, as the additional soil may shut out the disease spores. I have long practised early lifting as a ready means of baulking the disease. Unfortunately in seasons like this, when Potato tops are gross and long—and seem not to know when to stop growing—early lifting is unfavourable to high quality. And high moulding—without arresting the progress or completion of maturity—may interpose an effectual barrier to the penetration of the spores from above. *D. T. F.*

PYROLA ROTUNDIFOLIA AND MONOTROPA HYPOPITYS. — The sandhills on the Lancashire coast between Southport and Ainsdale are interesting to botanists, from the occurrence there of several uncommon plants, but especially two, which are usually said to inhabit woods—viz., Pyrola rotundifolia and Monotropa hypopitys. The first of these two is found sparingly in several parts of the sandhills, but in great abundance, covering several acres, about half-way between Birkdale and Ainsdale. It is a beautiful little plant, and was in full flower this year the last week in July, when I made a pilgrimage from Edge to see it. The good people of Southport prize it highly, and gather bunches of the flowers to decorate their rooms. The variety found near Southport is said by botanists to be peculiar to these sandhills, and to differ from the type, being called var. arenaria. I have tried for many years with indifferent success to cultivate the plant. It requires masses of wiry root to grow amongst, which are supplied abundantly on these sandhills by Salix repens. I searched in vain for Pyrola in spots where this Willow did not grow. The Monotropa seems equally dependent upon the roots of the Willow for its welfare. It grows abundantly in all parts of the same sandhills, but, like the Pyrola, confining itself mostly to the lower and level parts which represent the old floor of the coast. In several spots I noticed a circular arrangement of growth of Monotropa, like that of a fairy ring, perhaps due to the same cause. The Erythræa on these sandhills varies greatly in form of leaf and some other characters, but the varieties seem to pass by slight gradations into one another. *C. Wolley Dod.*

DWARFER DAHLIAS.—All growers of the large flowered or show section of Dahlias, know that a great reform in the matter of height has been produced during recent years, and that many fine varieties can now be found in height not exceeding 3 feet, some even dwarfer. That is great gain compared with the tall leggy growth usually found on the older forms. Many of the large show flowers may now be produced in plants of the height of the bedding race, and dwarfer than are the pompon Dahlias. The Cactus forms err especially on the side of excessive height, and sadly need reducing. Great height in plants never is a desirable feature, especially so far as concerns tender flowering plants, which need stout sticks to support them. One of the very tallest of all the singles is the beautiful Paragon still in flower, one of the very best, but its height is abnormal. A good range of height would be from 2 to 4 feet, for very dwarf or miniature forms are not of much worth, as most of them lack stiff flower-stems. I have been breeding, with some fairly good

results, for a moderately dwarf strain, which will stand without sticks—one especially, a brilliant scarlet self, the flowers perfect in form, and boldly displayed, is but 30 inches in height, and stands sturdily erect without any support. Such a strain as that presents, if more colour can be produced—and there are such—certainly does offer encouragement to the wider growth of single Dahlias, as their height and legginess has materially checked wide culture. Plants of the height named, of several very decided colours, would make fine masses, especially white, scarlet, crimson, purple, and mauve lines. The variously marked flowers, such as the pretty striped or edged Queen Victoria, although so attractive, would hardly prove to be so effective as are richly defined self colours. Clearly there is a wide field open for the improvement of single Dahlias. *A. D.*

AZOLLA CAROLINIANA.—Mr. O'Brien some few years since recorded this plant as growing on a pond at Eastcote. Since then it has gained a footing on other ponds and water in the neighbourhood, and just now the ponds are getting quite a reddish tinge, which will become more decided later on. A curious contest has been going on between the Azolla and our native Duckweed (Lemna) for possession of the surface of the water. The Azolla appears to be the most powerful of the two, but the process of crowding out the Lemna is a slow one; this is shown by the narrow streaks of the latter plants which may be seen growing amongst the former. *J. W. Odell, Stanmore.*

PLANT LABEL.—The accompanying label is a sample of those used in the University Botanic Garden here. It consists of an oblong piece of good but not hard wood, supported on two fairly stout pieces of wire, which should be galvanised. The wires are fixed by being driven into the wood a short distance beyond the passages bored to receive them. The wood gets a coat of good paint, which is allowed to dry; a second coat is then put on, and, while wet, the writing is done with a garden pencil. A coat of varnish completes the operation. *John Wilson, D.Sc., St. Andrews.* [Suitable for a botanic garden, but they are too conspicuous for private gardens. Ed.]

LATHYRUS DRUMMONDI.—I have lately read in the *Gardeners' Chronicle* some remarks as to the Pea which I received under that name, but which I found, when it flowered, to be L. rotundifolius. It was named for me by Sir J. D. Hooker, and figured in *Bot. Mag.* under that name. The plant had been in my garden some time before I sent it for identification. I received it from a lady living (then) near me, who said she would try and get me the scarlet Sweet Pea, as she was then shortly going for a visit, I believe, into Dorsetshire. One morning I received a box with a portion of this Pea which I succeeded in growing, and, when in flower, I submitted it for examination. The next year, I think, I was requested by Sir Joseph to send specimens for figuring. It is a very beautiful plant, but I do not consider it near L. Sibthorpi, which is very beautiful also. I greatly admire it; its beautiful colour and very early flowering are very charming. In the spring its long flower-spikes in some instances attain a length of 15 inches, while in L. rotundifolius they are about 6 inches, and again the flowers are very wide apart in L. Sibthorpi, and very thickly set in L. rotundifolius. L. Sibthorpi is, my opinion, a much stronger and dwarfer grower, more resembling L. latifolius, and grows from 3 to 4 feet in height, the other being 5 to 7 feet or more. These Peas are both hardy here; but are very bad setters of seed, not one seed in three or four pods being produced. L. Sibthorpi was obtained many years ago from my highly-esteemed friend Mr. W. H. Baxter, late Curator of Oxford Botanic Gardens. *J. S. C.*

GLAZED FLOWER-POTS FOR ORCHIDS.—Can any of your readers who are thoroughly experienced in Orchid growing give me their opinion, through the medium of the *Gardeners' Chronicle*, as to the value of glazed flower-pots for Orchids—whether they have found Orchids do better in them than in the ordinary flower-pot? *Hortus.*

TOWN TREES.—The remarkable thing concerning town trees planted during the past twenty years is how they manage to obtain root moisture, when the whole of the surface of the roads and footways seems to be absolutely impervious to moisture. Passing along the South Kensington-road, just opposite to the Brompton Oratory, a few days since, I remarked that the earlier leaves on some fine young Plane trees standing on the margin of the footways were already yellow and about to fall. I took it to be conclusive evidence that the trees were suffering from lack of moisture. The paths are close paved, and the street wood-paved, with a soil aperture about the trees of only some 15 inches square, and I cannot imagine that a single drop of surface-water can possibly pass to the roots. If in relation to town trees, especially young trees, there has been no artificial provision made for the irrigation of the soil beneath the streets and footways—for watering in any other way is impossible—then it seems evident that soon the trees must die, for the soil will but become drier every year. As trees will not thrive without ample root-moisture in the country, it would indeed be odd if they should do so in town; and it is strange that reputed gardeners in planting trees along the sides of roads or streets, the surfaces of which are so hard and impervious that not a drop of rain can pass into the soil beneath, should expect trees to live and thrive under such conditions. Existence can only be maintained through a miracle, as all natural conditions are violated. I may add, that just in the same street referred to above, I noted in a narrow fore-court, the head projecting far over the footway, a splendid Sumach, as luxuriant in growth and foliage as may be seen anywhere in the kingdom. The Sumach is not only therefore a first-rate town tree, but it seems capable of existing under conditions of root dryness much better than many other trees, for a house stands but a few feet from the path, so that the tree-roots must be beneath houses and paved footways. [Objectionable from the suckers it produces and its straggling habit. Ed.]. *A. D.*

Societies.

ROYAL HORTICULTURAL.

August 13.—It was a very pretty exhibition that was held in the Drill Hall, Westminster, last Tuesday. It is to be regretted that so few visitors were present, but no doubt the holiday season is responsible for that to some extent. One of the most remarkable exhibits was a collection of pot grown Tomato plants in fruit, probably the best exhibition of this popular fruit ever shown.

In the afternoon at the usual meeting, Mr. Rivers read a paper on the Peach, in which he condemned the ordinary practice of wall training His remarks will be published in the *Journal* of the Society.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. Shirley Hibberd, R. Dean, W. C. Leach, W. Goldring, H. Herbst, J. Walker, F. Ross, H. Cannell, W. Holmes, B. Wynne, C. Noble, J. Fraser, G. Paul, G. Nicholson, and Dr. M. T. Masters.

The season of the Dahlia is now near at hand, as could be seen by collections staged. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, contributed a collection comprising Cactus, single, and pompon varieties, and among the first-named were some very pretty varieties. Mrs. G. Reid, lilac-mauve shaded was very elegant; and the deep shaded crimson of Empress of India was very effective; Honoria, bright yellow, almost reminded one of a double Sunflower. In the singles, W. E. Harvey, pale biscuit-brown, with a trace of crimson suffusion, intense at the base of each ray, was a conspicuous flower; Gertie Bywater is dark crimson, with still darker marginal bands to each ray; Negress, deep, dull crimson. And of the pompons, Isabel, scarlet; Fairy Tales, pale yellow; and Eurydice, may be named. From the same exhibitor were a number of brightly-coloured Gaillardias in variety, double Sunflowers, having H. multiflorus grandiplenus (Soleil d'Or), and H. m. plenus, the former being quite even throughout, whereas the other had noticeable rays; Lilium auratum, Iceland Poppies, Scabious Snowball, Canna Antoine Chantin, with large bright red flowers; and Chrysanthemum Golden Shah, a dwarf plant, with bright yellow flowers, very decorative, were also shown.

From Messrs. J. Cheal & Son, Lowfield Nurseries, Crawley, Sussex, a similar collection of Dahlias was shown, and it contained some striking varieties, as, among singles: Mrs. Bowman, magenta; J. Scobie, bright yellow, with scarlet splashes—very gay; W. C. Harvey, already referred to; Formosa, bright red; and Alba perfecta, white; among the Cactus varieties, Panther, scarlet; H. Patrick, yellow; and the old Juarezii, were the best; while the pompons included Isabel, scarlet; Golden Gem, yellow; Adonis, crimson shaded; and Cupid, pink, with dark tips.

From Mr. S. Mortimer, nurseryman, Rowledge, Farnham, was a stand of forty-eight blooms of show varieties of Dahlias, very large, and of good form, among which the best were to be seen in Pioneer, Mrs. Gladstone, Mrs. Carter, R. J. Rawlings, Gloire de Lyon, H. Keith, Fascination, Peacock, Yellow Boy, W. Rawlings, R. Dean, Crimson King, and Diadem.

A new zonal Pelargonium was contributed by Messrs. Hawkins & Bennett, Lily Gardens, Twickenham. It is a sturdy-growing plant, with semi-double flowers of bright deep red, borne in a good large truss, and is introduced as Duke of Fife.

A good show of plants was made by Messrs. H. Cannell & Sons, Swanley, Kent, who showed a number of double-flowered Tuberous Begonias, out of which the following were selected for distinction:—A. Blanc, fiery-crimson, with straight petals; Mrs. Cayzer, yellow-brown, very double; and Litkie, with large flowers, pink, and the petals undulate; several plants of the dwarf double white Octavie were also shown. Among other plants from the same source were Coleus Vesuvius, with large ovate-acute leaves, of bright crimson, splashed with a deeper shade, and a yellow border; Rochea falcata, a flower which made a fine display; and "Nægelia Achimenes, pyramidal," stated to be a hybrid between Achimenes and Nagelia; it grows about a foot in height, with flowers borne in whorls along its length in the axils of leaves, which are dark green, ovate-acute, and hairy. The flowers are oblique, rosy-carmine, with a yellow throat, spotted with crimson at the orifice.

Messrs. R. Smith & Co., Worcester, contributed a handsome form of Pteris tremula named Smithii, growing about 1 foot in height, with very much divided and tufted fronds, giving a light and graceful appearance.

Messrs. J. Laing & Sons, Forest Hill, S.E., showed, under the name of Anthurium Laingii, a white spathed Anthurium. These are not of much decorative value when compared with the red.

Godetias were sent by Messrs. Daniels Bros., Norwich, who had a crimson-flowered one named Duke of Fife, and another, Duchess of Fife, with petals of white with a crimson spot.

An extensive group of a miscellaneous nature was staged by Messrs. Paul & Son, Cheshunt. This consisted chiefly of Roses, even at this late date, and were very fine for the time of year, some of the most creditable being La France, A. Colomb, Dr. Andry, Duke of Teck, Baroness Rothschild. A. K. Williams, M. P. Wilder, Madame Eug. Verdier, Captain Christy, &c. Polyantha Roses were also seen in Mignonette, Golden Fairy Pernet, Anna Marie de Montravel, Red Pet, Gloire de Polyantha, and Madame Alégatière (Jules Margottin × R. polyantha), with light looking flowers of a full rose colour, and moderate size; others subjects were Gypsophila paniculata, Eryngium planum, Montbretia Pottsi, various Phloxes, Rudbeckia purpurea, Aconitum autumnale, Polygonum affine, Senecio pulcher, and a variety of Hybrid-spotted Gladioli.

A small collection of plants, &c., came from Mr. R. Dean, Ealing, including Mauve Beauty Stock, which is a very double variety, producing but few singles; African Marigolds in variety, Victoria and Scarlet Bedder Dahlias, and Lobelia Heckfield Favourite, deep blue, with a small eye of white.

A few plants of Rainbow Coleus were sent by Mr. J. Green, Norfolk Nurseries, East Dereham. It is a distinct sort, green, with a broad yellow edge, splashed all over with crimson.

A very extensive and beautiful exhibit was that of Messrs. J. Veitch & Son, Royal Exotic Nursery, Chelsea, S.W., who had specimens of a great variety of hardy ornamental foliaged shrubs and trees, including a great number of forms of Acer palmatum septemlobum, and also of Oaks of various species. Some of the most striking were Stephanandra flexuosa, Shepherdia argentea, Naudina domestica, Cornus mas elegantissima aurea, Eucryphia pinnatifolia in flower, Quercus pedunculata vars., Berberis vulgaris atropurpurea, Alnus glutinosa imperialis, Styrax obassia, S. japonica (in fruit), Salix annularis, Eucalyptus coccifera, and Eleagnus macrophyllus. Several trusses of hybrid Rhododendrons were shown, including a novelty, Duchess of Fife, cream with pale red flush and a good truss; Nepenthes Curtisii var. superba, which differs from the type in higher colouring and in having a much greater development of the annulus or rim surrounding the mouth of the pitcher, which is two or

three times as wide in the new form, and gives a very bold appearance; Hedychium Sadleri× (H. Gardnerianum× coronarium), with a good head of yellow flowers of large dimensions; Roscoea purpurea, pale flowered form with flowers of rich mauve very elegant, and to complete the display, a large lot of Gladioli of Lemoine's hybrids, including specimens of the new section Nanceianus, exhibited on behalf of M. Lemoine, referred to on p. 154 of our last issue; President Carnot of this section was rich scarlet carmine, with conspicuous white areas on the lower segments, the flower was very much expanded, and measured 5 inches across laterally. In Horace Comte de Choiseuil, is seen a darker coloured flower of similar form and size, but with the white areas somewhat obscured by spotting. Of the hardy spotted section, the most noteworthy were Alsace, pale buff-yellow, with a purple spot, the flower being very cupped in form; and André Chenier, cream flushed pink, with the lower segments purple with gold tips, very striking.

Mr. F. Ross, Pendell Court Gardens, Bletchingley, had Physianthus albens, with a profusion of its white flowers.

Mr. G. S. Whall, Park Street, Worksop, sent a hybrid Gladiolus (Lemoine's class), raised by himself, and named Hippolyte; it is buff-yellow with crimson flush, and a rich crimson centre and lower petal—an elegant production.

Mr. Baron Veillard contributed cut flowers of a new Clematis, named Mrs. Baron Veillard, and from Messrs. G. Jackman & Sons, Woking Nurseries, Surrey, came a plant of the same, the flowers of which are a dull mauve colour not particularly attractive, but distinct.

Messrs. R. Beale & Co., New Southgate, N., showed plants grown in fertilising moss, and also various sundries, as well as a plant-collar for lengthening a pot for top-dressing, it consists of a band of metal which fits inside the rim of the pot.

Zinnias in variety were sent by Mr. Otto Putz, and the strain was commended.

A curious little Tritonia securigera with four or five flowers on a scape was sent by Mr. J. O'Brien, Harrow-on-the-Hill, the flowers are about 1 inch across, salmon-red with a bright yellow area and a small hatchet-shaped process on the three lower segments, the scape being about 1 foot in length.

Orchid Committee.

Present:—Dr. M. T. Masters, F.R.S., in the chair, and Messrs. J. O'Brien, E. Hill, H. J. Veitch, C. Pilcher, J. Dominy, H. M. Pollett, and H. Ballantine.

Mr. M. Bishop, gr. to W. Howard, Esq., The Grove, Teddington, sent a plant of Cattleya Warcewiczii w th fine blooms of a delicate lilac colour; and H. Tate, Esq., jun., Allington Beeches, Liverpool, showed a plant of C. W. Hardyana, with rich lilac crimson flowers of fine substance, the large lip being very dark and beautifully undulate, with a bright yellow blotch on each side. This form has been on a previous occasion certificated as C. Hardyana.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, had a few choice subjects in Vanda Kimballiana, a very pretty orchid, the sepals and petals are white with a central pale crimson nerve, and the almost round lip entirely crimson; the lateral sepals are crescent-shaped, with the point inclining downwards, and the odd sepal is twisted so as to show the edge only at the front view of the flower; the petals are also twisted, but so as to exhibit the back, the column is furnished with yellow wings. Altogether this is a very elegant plant, the stem being terete, dark green, and short; Cypripedium Stonei-superbiens, Burford variety, much resembling C. Morganiæ, but is stiffer, the lip is more rounded and of deeper colour; dorsal sepal triangular, erect, flat, whitish brown lined with green and red-brown, petals long, narrow, and straight, green-yellow with red-brown spots, and ciliated along the margin. Lælia monophylla and Eulophia megistophylla, with a well-flowered spike of yellow and lake flowers completed the collection.

Messrs. H. Low & Co., Clapton, sent a very well-flowered specimen of Vanda Kimballiana with a quantity of flowers on it, and Mr. Goodheart, Beckenham, contributed a plant of Cypripedium Lawrenceanum; while Mr. Ballantine, gr. to Baron Schroder, sent a flower of Cypripedium orphanum (barbatum × Druryii), lip rose-lake, spotted inside, petals and dorsal sepal with a central nerve, dorsal sepal white with green nerves, shaded with lake near the margin, which is reflexed; petals rosy-lake on a greenish ground, slightly twisted. Mr. G. Norman, Hatfield House Gardens, Hatfield, contributed several fine cut spikes of Saccolabium Blumei, about 2 feet in length, marvels of fine cultivation.

Fruit Committee.

Present: R. D. Blackmore, Esq., in the chair; and Messrs. J. Lee, J. Willard, J. Cheal, G. Cliffe, G. Norman, G. Bunyard, W. Warren, J. Wright, A. H. Pearson, T. J. Saltmarsh, G. Wythes, J. Hudson, W. Balderson, F. Q. Lane, H. Weir, P. Crowley, J. Burnett, and Dr. R. Hogg.

The Tomatos in pots from the Society's gardens at Chiswick formed the leading feature of the display here, and the plants, laden with fine samples of fruit, did indeed look well. Numerous dishes of fruit of a very high quality were also sent, among which were the following:—Golden Queen, Reading Hybrid, President Cleveland, Perfection, Lorillard, Yellow Cherry, Wile's Prolific, New Early, and several crosses, such as Perfection × Horsford's Prelude, and Prelude × Ham Green Favourite, to the first-named of which a Certificate was awarded as Chiswick Hybrid; the fruit is of a fine red colour, round, smooth surface, moderate in size, prolific, and does not contain much pulp.

The English Apple and Fruit Growing Co., 1, Duke Street Mansions, Grosvenor Square, W., which exhibited for the first time, contributed a few baskets of well-grown samples of Tomatos; one under the name of Livingstone's Prolific was represented by very large and handsome fruit; and others were Conqueror, Optimus, Ham Green Favourite, &c., all in good condition.

A collection of fruit was staged by Messrs. J. Veitch & Sons, Chelsea, in which were handsome well-ripened examples of Early Orleans, The Czar, Frogmore Orleans, and De Montford Plums. Apples and Pears were remarkably clean and sound, and included the following:—Apples: Domino, Ecklinville, Irish Peach, Hawthornden, Duchess of Oldenburg, Oslin, and Red Astrachan; with Jargonelle and Beurré Giffard Pears.

Mr. W. Roupell, Roupell Park, S.W., contributed well-grown fruits of Devonshire Quarrenden, Irish Peach, Red Astrachan, and Red Juneating; and Messrs. J. Cheal & Son, Crawley, Sussex, showed also dishes of Apples, having as their best Alfreston, Irish Peach, Professor, White Astrachan, and Manx Codlin.

A branch of Alexandre Lambré Pear, laden with fruit, was shown by Mr. A. Dean, Bedfont, to illustrate its cropping qualities.

Several Melons were submitted, one of which, named Basing Park, received a Certificate; it was sent by Mr. W. Smyth, Basing Park Gardens, Alton, Hants, and is a medium-sized, green-fleshed fruit, with a much netted skin, and of full flavour. Others were from Mr. Allen, Gunton Park Gardens, Norwich, a large scarlet-fleshed variety, a cross between Austin's Incomparable and Hero of Lockinge; Mr. F. Nicholas, Upleatham, Yorks; Mr. J. Button, Yeovil; and Mr. W. H. Divers, Ketton Hall, Stamford.

Some bunches of the American Strawberry-Grape were shown by Messrs. H. Lane & Son, Berkhamsted, from a Vine grown in a pot; they were good specimens of the kind, and of very dark colour.

Mr. Green, East Dereham, had a number of fruits of the Peach Tomato, which are of a dull dark red colour.

Awards were made as follows:—

By the Floral Committee.

First-class Certificates.

To Pteris tremula Smithiana, from Messrs. R. Smith & Co.

To Nepenthes Curtisi superba, from Messrs. J. Veitch & Sons.

To Gladiolus Nanceianas President Carnot, from M. Lemoine.

Award of Merit.

To Gladiolus Hippolyte, from Mr. Whall.

To Dahlia W. C. Harvey, from Mr. T. S. Ware.

To Chrysanthemum Golden Shah, from Mr. T. S. Ware.

To "Nægelia Achimene Pyramidal," from Messrs. H. Cannell & Sons.

To Begonia Litkie, from Messrs. H. Cannell & Sons.

To Begonia Mrs. Cayzer, from Messrs. H. Cannell & Sons.

To Begonia A. Blanc, from Messrs. H. Cannell & Sons.

To Rhododendron Duchess of Fife, from Messrs. J. Veitch & Sons.

To Dahlia James Scobie, from Messrs. Cheal & Sons.

To Pelargonium Duke of Fife, from Messrs. Hawkins & Bennett.

To Gladiolus Alsace, from Messrs. J. Veitch & Sons.

To Gladious André Chenier, from Messrs. J. Veitch & Sons.

Botanical Certificate.

To Tritonia securigera, from Mr. J. O'Brien.

Strain Commended.

Zinnias, from Otto Putz.

By the Orchid Committee.

First-class Certificates.

To Vanda Kimballiana, from Sir T. Lawrence, Bart., M.P.; and also from Messrs. H. Low & Co

To Cypripedium Orphanum, from Mr. H. Ballantine.

Cultural Commendations.

To Lælia monophylla, from Sir T. Lawrence, Bart., M.P.

To Saccolabium Blumei, from Mr. Norman.

(All unanimously.)

By the Fruit Committee.

First-class Certificates.

To Melon Basing Park, from Mr. W. Smythe.

To Tomato Chiswick Hybrid, from the Society's Gardens.

Cultural Commendation.

To collection of Tomatos, from the Society's Gardens.

Medals.

Silver Banksian Medal to Messrs. J. Veitch & Sons, for group of plants.

Silver Banksian Medal to Mr. T. S. Ware, for collection of Dahlias.

Silver Banksian Medal to Messrs. H. Cannell & Sons, for group of Begonias.

Silver Banksian Medal to Messrs. Paul & Son, for group of Cut Roses, &c.

Bronze Banksian Medal to Messrs. J. Cheal & Sons, for collection of Dahlias.

Bronze Banksian Medal to the English Apple and Fruit-growing Company, for collection of Tomatos.

LEICESTER.

August 6.—The Committee of the Abbey Park, under the direction of the Corporation of Leicester, held its fourth flower show in the beautiful grounds of the Abbey Park. The show was arranged in four large tents. The largest tent, devoted to plants, had the centre filled with groups, which were of excellent quality. The 1st prize was taken by Mr. S. A. Murray, gr. to S. Bennett, Esq., Knighton, whose arrangement was much above the average, and calls for special remarks, four tall graceful Palms occupied the centre, surrounded by a choice selection of Crotons, Dracænas, Acalyphas, and other foliage plants; the old-fashioned Clerodendron fallax was freely used with good effect, also Anthurium Andreanum. Francoa ramosa, used for relief, gave the group a graceful appearance, and the whole was neatly margined with Ferns, Gloxinias, Caladium Argyrites, &c.

The flowering and foliage plants were not so numerous as we have seen in former years, but those shown were clean and well grown. In the Fern classes there was good competition, and some well-grown specimens of Adiantum Farleyense and A. Cardiochlænum, rarely shown in good condition. For a single specimen flowering plant, Plumbago capensis took the 1st prize, with a large well-flowered plant. This was shown by Mr. Murray; Coleus formed a striking feature of this tent, Mr. Murray being again 1st, with a clear well-grown collection.

Table plants are shown in close competition, both for the Society's prize, as well as the special prizes offered by Mr. B. S. Williams, of the Victoria Nurseries, Holloway, London, Mr. Murray again being the fortunate competitor. From Mr. Williams' nurseries was a choice collection of new and rare plants, including many Orchids, Sarracenias, Crotons, Dracænas, &c., forming one of the most interesting groups of the show. This was not shown for competition, but a special prize was awarded.

The excellent prizes offered for Roses at this show always brings strong competition, and although some heavy storms on the previous day prevented a few of the large exhibitors from turning up, one side of a large tent was well filled with very good quality flowers, Messrs. Harkness & Son, of Bedale, taking

1st, for thirty-six. The other principal exhibitors were the Rev. Pemberton Havering and Messrs. Merryweather, Southwell; Mack & Son, Catterick Bridge; and Perkins & Sons, Coventry.

Carnations and Picotees were largely shown, and the competition was very keen.

The prize for twelve cut stove and greenhouse plants was taken by Mr. Blair, of Trentham, with a grand collection. Messrs. Harkness & Son took the lead with cut herbaceous flowers, with a good selection, and nicely arranged; indeed, the cut flowers was one of the features of the show.

For bouquets, vases, and wreaths, the leading prize, as usual, went to Messrs. Perkins & Son, Coventry; but for both hand and bridal bouquets Mr. Blair, of Trentham was a good 2nd.

The fruit prizes were not so well contested for as on some previous occasions, but the quality of the exhibits was good. The 1st prize, for a collection of six dishes, was taken by Mr. J. Edmonds, of Bestwood, who was well followed by Mr. Blair, of Trentham. Other exhibitors were Mr. J. Crawford, Coddington Hall, Newark; Mr. Ward, and Mr. Shaw.

The vegetables were of superior quality, and cottagers residing within four miles of the market-place filled one large tent with very creditable produce.

WESTBOURNE and DISTRICT.

August 7 and 8.—This Society held its fifth annual show of plants, fruits, and flowers in a pasture field (kindly lent by Lord Wimborne), at Branksome Deane, within half-an-hour's walk of Bournemouth.

The exhibits were arranged in four large tents. Mr. William Earp, gr. to J. S. Sellon, Esq., Hume Towers, Bournemouth; Mr. G. Roberts, gr. to Mrs. M. Smedley; Mr. C. Phillips, gr. to T. J. Hankinson, Esq.; and Mr. Taylor, gr. to R. J. Ellershaw, Esq., all of Bournemouth and district, were the most successful exhibitors in the various classes. And Messrs. Watts & Sons, The Palace Nurseries, Bournemouth, and Mr. J. K. Ingram, Parkstone Nursery, contributed very effectively arranged groups of plants, not for competition, which commanded great attention.

Mr. Bush, gr. to Lord Wimborne, Branksome Deane, had the best arranged group of plants, the space covered not to exceed 60 feet. The plants employed were very suitable well-grown stuff, and tastefully arranged.

Cut flowers were not extensively shown, but on the whole they were good; especially the stands of double Dahlias, which deservedly secured an easy victory for Mr. Elsworth, who also had 1st for a stand of twelve Roses; Miss E. A. Watkins securing a like award for a hand bouquet. Bunches of Pelargoniums and several stands of Asters were shown in good form.

Fruit.—The competition in the fruit classes was not so keen as we should have liked to have seen it, but the quality, on the whole, was very good. Mr. G. Roberts had the best two bunches of Black Hamburgh Grapes. Mr. Earp leading with fairly good bunches of Chasselas Musqué in the white Grape class. He was also 1st for a collection of six kinds of fruit, showing Black Hamburgh Grapes, George IV. Peach, Brown Turkey Figs, Jargonelle Pears, Paradise Melon and Cherries, all of good quality. Mr. Greenaway, gr. to J. B. Scott, Esq., had the best flavoured Melon in a good specimen of Sutton's Hero of Lockinge.

Vegetables were well represented; three good collections of six sorts were staged. Mr. Earp led the way with a good all-round lot, his Veitch's Perfection Tomato and Gladiator Peas being excellent. Special prizes offered by Messrs. Sutton & Sons for their Reading Perfection Tomato went to Messrs. Earp, Bush, and Andrews, gr. to M. Coates, Esq., Bath Hotel, Bournemouth; while Mr. C. Phillips took Messrs. J. Carter & Co.'s prizes for vegetables.

FRUITS UNDER GLASS.

Peaches.—See that all the old bearing wood is pruned out as soon as the fruit is gathered, very loosely tying-in the young wood from the base of the shoot just to keep it from overshadowing its neighbour, as on the proper ripening of the wood the next year's crop depends. In fact, the success of next year depends upon the management of the trees immediately the present season's fruit is formed. If too many are allowed to ripen, no after care will make up for the strain. Some trees have a knack of thinning their own fruit, and will only ripen a correct quantity; and again, trees have different constitutions, and attention to this will give the cultivator an idea of the powers of all his trees, and show how heavily they may be cropped. I do not think really fine fruit can be grown unless they are 12 inches apart, and some trees with large fruit will not fully develop them at this distance. With this dull wet weather and cooler night temperature, a little fire-heat will be necessary to assist ripening. Do not neglect the watering, but examine both inside and outside borders, which should not get dry at any time. Liquid manure with a little soot and lime washed in will do good, except to gross growing young trees. Fruit which is ripening must be exposed to get colour and flavour, and the trees should be looked over twice a day for gathering. Later houses in which the crop is swelling and being kept back as much as possible, should have all the air possible when fine; and when cold, during damp and foggy weather, just a little artificial heat so as to keep the air moving. In the early mornings of fine days give a good syringing, taking off any young side shoots and stopping rank leaders, as it is necessary to have the wood thinly disposed at this time to allow of perfect ripening. Look out for red-spider in any of the houses, and, if visible, give a good syringing with Calvert's carbolic soap. I find this an excellent and safe remedy for either spider or thrip. *W. Bennett, Rangemore, Burton-on-Trent.*

SCOTLAND.

BOTANY LECTURES FOR THE WORKING CLASSES.

The first of a series of lectures on botany—to be given during the present month to the working classes by Professor Bayley Balfour, Regius Keeper of the Royal Botanical Gardens, Edinburgh—was delivered on Saturday evening in the lecture hall within the Royal Botanical Gardens. Professor Bayley Balfour, at the outset of his lecture, explained that the Government having arranged to keep those gardens in its own hands, to manage and maintain as a place for scientific research, and at the same time for the public enjoyment, he thought it therefore might be considered part of his duty to give such lectures. In announcing the subject of his lecture that evening as "Fruits and Seeds," he said that in dealing with an audience like that before him, it would be better if he approached it from a popular and elementary point of view. Beginning his lecture, he said, the first question was, "What is a seed?" In looking at all natural objects, one naturally required to find out what their structure was, and after knowing that, a very important question presented itself, what do they do, and what are they for? The lecturer then proceeded to explain the difference in the structure of the different varieties of seeds. Regarding their use, he stated that each seed contained an embryo plant, and the seed was for the perpetuation or propagation of the plant. Each plant produced a number of seeds, and these seeds gave rise to plants like the parents, but to a certain extent varying in their characteristics from their parents. This propagation by seed was a very important one in connection with the life-history of plants, and their development on the surface of the globe. The seed, containing the embryo plant, was to be scattered in some way or other over the surface of the earth by means of birds and other forms of animal life, and also by the wind. It was manifest, he said, that if the seeds of a plant simply fell immediately below the plant that produced them there would be no possibility of the plant spreading and occupying a wide area on the face of the earth. In the second portion of his lecture, dealing with fruits, the lecturer said that whatever might be its form, shape, or character, that which contained the seed was spoken of as a fruit. Many structures that were spoken of in common language as fruits were in reality seeds, while others spoken of as seeds were in reality fruits. Roughly speaking, fruits were divided into two classes, succulent and dry. He drew attention to the fact that the bright coloured skin of many fruits was provided in order to attract birds. The characteristics of the principal fruits were entered fully into, their structure being elucidated by the use of a number of diagrams and large-sized models. There was an attendance of about 200 persons.

Tree Growing in Towns.

At one of the monthly meetings of the members of the North of Scotland Horticultural Association, Aberdeen, an interesting paper on "Trees suitable for growing in Towns," was read by Mr. Robert Walker, gardener, Victoria Park, Aberdeen. The best of all trees for European towns was the Western Plane. [Acerifolia is meant, the Western Plane is much too tender. Ed.] It was a noble city tree, and nowhere were there finer individual specimens to be seen than in London. There were the common Sycamore, the purple-leaved Sycamore, and the Rose Acacia, all specially suitable. Other trees were mentioned, such as the purple-leaved Elm, the pyramidal variety of the Oak, the American broad-leaved Lime, and the Poplar-leaved Birch, all of which had particular qualities to recommend them for streets and avenues. The Hawthorn family generally furnished great numbers of hardy ornamental dwarf trees. The extensive use of Limes, Horse Chestnuts, Lombardy Poplar, and Beech trees in towns was a mistake. At the end of July the Limes were often the most miserable-looking trees that could be seen, and that in the midst of summer. The writer then treated of the soils most suitable for trees of the kinds he suggested.

VARIORUM.

Japanese Timber.—The best building timber, at the same time hard, tough, and durable, is Zelkowa Keaki, Sieb., but in consequence of the high price it is used mostly for joiners' work. For the same reason the greatly prized Pine-woods also, like Chamæcyparis obtusa, Endl., and its kindred, Abies tsuga, S. and Z., Larix leptolepis, Gord., Taxus cuspidata, S. and Z., are not used in house-building, as their excellence would warrant, but serve the purposes of decoration in the more expensive dwellings. The usual building-wood for houses is furnished by the quick-growing Cryptomeria japonica, Don., also by Abies firma, S. and Z., or by a still cheaper and much-prized wood having many varieties, Pinus densiflora, S. and Z., and P. Massonia, Lamb., used also largely in bridge building, for which the more brittle Sugi-wood is less adapted. *Rein, Industries of Japan.*

Madras Forest Department.—From the annual report presented to Government we learn that the year 1887—88 completes the first quinquennium since the reorganisation, which was initiated by the visit of Dr. (now Sir Dietrich) Brandis, and the passing of the Forest Act in 1882, but did not come fully into operation until 1883—84. During this period of five years the area under the control of the Forest Department increased from 2,794 to 17,006 square miles, of which 2,998 were formally reserved, while over a great portion of the remainder conservation was nearly as strict as in the case of reserved forests. It is evident, too, that this control was something more than nominal, for the revenue derived from forests has risen from Rs. 9,03,914 to Rs. 13,74,920. Sir Dietrich Brandis estimated the receipts at Rs. 9,00,000 per annum for the first five years, and he put the charges at the same figure, but instead of merely paying its way, the department has, during the period in question, earned a net income, aggregating Rs. 10,66,316.

The Sphincter Universal Wire Mat.—This is a strong, serviceable wire mat, recently introduced by the Sphincter Grip Armoured Hose Co., 63, Fore Street, London, E.C., and consists of a number of coils of the Sphincter grip armour locked together, and bounded by a tubular frame of steel; it is light, and allows easy passage of the dirt.

MARKETS.

COVENT GARDEN, August 15.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Heavy supplies of all classes of goods are now reaching us, and are only cleared at low rates. Business generally dull. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 6	Pine-apples, Eng., lb.	1 6	3 0
Grapes, per lb.	0 6	2 6	— St. Michael, each	2 0	6 0
Lemons, per case	12 0	21 0	Plums, ½-sieve	2 6	5 0
Peaches, per doz.	2 0	8 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, Fr., per lb.	0 6	...	Mushrooms, punnet	2 0	...
Beet, red, per dozen	1 0	2 0	Mustard and Cress, punnet	0 4	...
Carrots, per bunch	0 6	...	Onions, per bunch	0 5	...
Cauliflowers, each	0 3	...	Parsley, per bunch	0 4	...
Celery, per bundle	1 6	2 0	Peas, per quart	1 3	...
Cucumbers, each	0 6	0 9	Shallots, per lb.	0 6	...
Endive, per dozen	2 0	...	Spinach, per bushel	3 6	...
Green Mint, bunch	0 4	...	Tomatos, per lb.	0 9	...
Herbs, per bunch	0 4	...	Turnips, per bunch, new	0 5	...
Leeks, per bunch	0 3	...			
Lettuce, per dozen	1 6	...			

Potatos.—Kidneys, 3*s.* 6*d.* to 4*s.* 6*d.* per cwt.; Beauty of Hebron, 3*s.* to 4*s.*; Early Rose, 3*s.* to 3*s.* 6*d.* Owing to harvest operations, supplies were rather short at the beginning of the week, with slightly advanced prices, which induced greater efforts to send to market, causing prices to steady themselves, and may be quoted as last week. The prospects of supplies reported heavy from all quarters. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Fuchsias, dozen	3 0	8 0
Asters, per dozen	3 0	6 0	Hydrangea, per doz.	9 0	18 0
Balsams, doz.	2 0	5 0	Lilium lancifolium, per dozen	12 0	24 0
Begonias, dozen	4 0	12 0	— auratum, doz.	12 0	30 0
Calceolarias, dozen	4 0	9 0	Lobelias, dozen	3 0	5 0
Cockscombs, doz.	3 0	6 0	Marguerites, doz.	6 0	12 0
Cyperus, per dozen	4 0	12 0	Mignonette, doz.	3 0	6 0
Dracæna terminalis, per dozen	30 0	60 0	Musk, dozen	2 0	4 0
— viridis, per doz.	12 0	24 0	Nasturtiums, doz.	3 0	5 0
Euonymus in var., per dozen	6 0	18 0	Palms in var., each	2 6	21 0
Evergreens, in var., per dozen	6 0	24 0	Pelargoniums, per dozen	6 0	12 0
Ferns, in var., doz.	4 0	18 0	— Ivy-Leafed, doz.	3 0	4 0
Foliage plants, various, each	2 0	10 0	— scarlet, doz.	2 0	4 0
Ficus elastica, each	1 6	7 0	Rhodanthe, per doz.	4 0	6 0
			Solanums, per dozen	6 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Marguerites, 12 bun.	3 0	6 0
Asters, Fr., per bun.	0 9	1 6	Mignonette, 12 bun.	1 0	4 0
— English, per bun.	0 4	0 6	Pansies, 12 bun.	1 0	2 0
Bouvardias, per bun.	0 6	0 9	Pelargoniums, 12 spr.	0 6	1 0
Carnations, 12 bun.	3 0	6 0	— scarlet, 12 spr.	0 3	0 6
— 12 blooms	1 0	3 0	Pinks (var.), 12 bun.	2 0	4 0
Chrysanth., 12 blms.	0 6	3 0	Primulas, double, 12 sprays	0 9	1 0
Coreopsis, 12 bun.	1 0	3 0	Rhodanthe, 12 bun.	4 0	6 0
Cornflowers, 12 bun.	1 0	3 0	Roses, Tea, per doz.	0 6	1 6
Dahlias, 12 bun.	3 0	6 0	— coloured, dozen	2 0	4 0
Eucharis, per dozen	2 0	4 0	— red, per dozen	0 4	1 0
Gaillardias, 12 bun.	2 0	4 0	— Safrano, dozen	0 6	1 0
Gardenias, 12 blooms	2 0	4 0	Stephanotis, 12 spr.	2 0	4 0
Gladioli, 12 bun.	6 0	12 0	Stock, 12 bunches	3 0	6 0
— 12 sprays	1 0	1 6	Sunflowers, various, per 12 bun.	3 0	6 0
Heliotropes, 12 spr.	0 6	1 0	Sweet Sultan, 12 bun.	3 0	4 0
Lavender, 12 bun.	3 6	6 0	Sweet Peas, 12 bun.	2 0	4 0
Lilium, various, 12 blooms	1 0	5 0	Tuberoses, 12 blms.	0 4	1 0
Maiden Hair Fern, 12 bun.	4 0	9 0			

Orchid bloom in variety, fairly good supply.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended August 10:—Wheat, 30*s.* 11*d.*; Barley, 19*s.* 10*d.*; Oats, 19*s.* 5*d.* For the corresponding week in 1888:—Wheat, 34*s.* 6*d.*; Barley, 24*s.* 9*d.*; Oats, 18*s.*

SEEDS.

London: *Aug.* 14.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a fair trade doing in autumn-sown seeds. There is a brisk inquiry for Trifolium incarnatum, and a further advance has now been established; supplies on spot barely meet the demand. Low prices are asked for new French Italian and Trefoil. White Mustard continues in favour. For Hemp seed there is a better trade. Canary is quite neglected. Several parcels of Rape seed have lately changed hands. Rye is now offered at phenominally low rates. Winter Tares are also very cheap.

FRUITS AND VEGETABLES.

Spitalfields: *Aug.* 14.—English Apples, 4*s.* to 7*s.* per bushel; Pears, 4*s.* to 6*s.* per half-sieve; Black Currants, 7*s.* do.; Red Currants, 3*s.* 6*d.* to 4*s.* do.; Egg Plums, 3*s.* to 4*s.* do.; Victoria Plums, 3*s.* to 3*s.* 6*d.* do.; Orleans Plums, 6*s.* to 7*s.* do.; Green Gages, 2*s.* 6*d.* to 4*s.* do.; do., 2*s.* to 2*s.* 6*d.* per flat; English Tomatos, 4*s.* to 6*s.* per 12 lb.; foreign Tomatos, 9*d.* to 2*s.* 6*d.* per box; Cabbages, 2*s.* to 4*s.* per tally; Vegetable Marrows, 2*s.* to 3*s.* do.; Radishes, 2*s.* to 3*s.* do.; Cauliflowers, 1*s.* to 2*s.* 6*d.* per dozen; French Beans, 1*s.* 9*d.* to 2*s.* 6*d.* per bushel; Scarlet Beans, 1*s.* to 2*s.* do.; Peas, 2*s.* 6*d.* to 3*s.* do.; do., in sacks, 2*s.* 6*d.* to 5*s.* per sack; Onions, 2*s.* to 2*s.* 6*d.* per dozen bunches; Turnips, 2*s.* to 3*s.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; Endive, 1*s.* to 1*s.* 6*d.* do.; Cos Lettuce, 4*d.* to 9*d.* per score; Leeks, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Parsley, 1*s.* to 1*s.* 6*d.* per dozen bunches; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; natural do., 4*d.* to 9*d.* do.; English Onions, 4*s.* to 4*s.* 6*d.* per cwt.; Belgian Onions, 3*s.* 6*d.* to 4*s.* per bag of 110 lb.; Dutch Onions, 3*s.* 3*d.* to 3*s.* 9*d.* do.; Spanish Onions, 6*s.* 9*d.* to 7*s.* 3*d.* per case.

Stratford: *Aug.* 13.—Prices:—Cabbages, 2*s.* to 4*s.* per tally; Cauliflowers, 4*s.* to 9*s.* do.; Turnips, 2*s.* to 3*s.* per dozen bunches; Mangels, 24*s.* to 25*s.* per ton; Swedes, 50*s.* to 90*s.* do.; Onions, Oportos, 7*s.* to 8*s.* per case; Apples, English, 4*s.* to 6*s.* per bushel; Watercress, 6*d.* per dozen; Marrows, 3*s.* to 4*s.* per tally; Beans, 1*s.* 6*d.* to 2*s.* per bushel; Gages, 1*s.* 9*d.* to 3*s.* do.; Plums, 2*s.* 6*d.* to 3*s.* per basket; Tomatos, 2*s.* 3*d.* to 2*s.* 9*d.* per box; English Pears, 4*s.* to 6*s.* per bushel.

POTATOS.

Borough and Spitalfields, *Aug.* 13.—Supplies are moderate, but the demand is slack. Early Rose, 65*s.* to 80*s.*; Regents, 70*s.* to 90*s.*; Myatt's, 70*s.* to 100*s.*; Hebrons, 70*s.* to 90*s.* per ton.

Spitalfields: *Aug.* 14. — Quotations: — Early Rose, 70*s.* to 80*s.*; Hebrons, 80*s.* to 95*s.*; Imperators, 70*s.* to 75*s.*; Regents, 80*s.* to 100*s.*; Myatt's kidneys, 75*s.* to 85*s.*; Magnums, 70*s.* to 80*s.* per ton.

Stratford: *Aug.* 13.—Quotations:—Kidneys, 50*s.* to 70*s.*; Regents, 60*s.* to 80*s.*; Hebrons, 60*s.* to 80*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime 1887 Clover, 120*s.* to 140*s.*; new, 85*s.* to 110*s.*; inferior, 45*s.* to 75*s.*; best hay, 75*s.* to 105*s.*; inferior, 36*s.* to 50*s.*; straw, 24*s.* to 40*s.* per load.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending August 12, is furnished from the Meteorological Office:—

"The *weather* has been exceedingly cool, changeable, and unsettled. Thunderstorms have occurred in all but the extreme northern parts of the kingdom—frequently in the east and north of England—and heavy local falls of rain have been experienced in nearly all districts.

"The *Temperature* has been everywhere below the mean, the excess ranging from 1° in Scotland and the north-east of England, to as much as 4° in 'England, E,' and the 'Midland Counties.' The daily maxima were as a rule below 70° in all districts, and frequently below 60° at our extreme northern and north-western stations. The highest readings were observed on the 7th and 8th, when the thermometer rose to between 65° and 69° in Ireland and Scotland, and to a little above 70° in many of the English districts. The lowest readings, which were registered at irregular times, ranged from 39° in 'Scotland, N.' and the 'Midland Counties,' to 45° in 'England, E.' and 'England, S.,' to 50° in the 'Channel Islands.'

"The *rainfall* has been less than the mean in 'Scotland, N.' and the 'Channel Islands,' and about equal to it in 'Scotland, W.' and 'England, S.W.,' but more in all other districts. In the eastern parts of Great Britain, where thunder has been very prevalent, the excess has been considerable.

"*Bright sunshine* has been more prevalent than last week in 'England, S.W.,' and the 'Channel Islands,' but less so in all other districts. The percentages of the possible amount of duration has ranged from 13 in 'England, N.E.,' to 40 in 'England, S.,' 49 in 'England, S.W.,' and 5 in the 'Channel Islands.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending August 12.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	88	0	+ 213	+ 4	3 —	148	22.1	20	24
2	1 —	95	0	+ 63	+ 5	7 +	119	16.0	14	30
3	1 —	106	0	+ 49	+ 7	9 +	110	14.5	13	28
4	4 —	111	0	+ 19	+ 112	7 +	117	16.1	36	31
5	4 —	101	0	+ 14	+ 60	3 +	109	18.4	29	29
6	3 —	113	0	+ 61	+ 75	2 +	114	14.9	40	30
7	1 —	99	0	+ 92	— 23	0 av.	123	23.0	26	32
8	3 —	105	0	+ 74	— 1	2 +	114	17.7	20	31
9	3 —	106	0	— 13	+ 88	0 av.	114	20.4	49	36
10	3 —	99	0	+ 43	— 53	5 +	137	21.5	23	28
11	2 —	103	0	+ 11	— 14	4 +	125	20.7	32	34
12	2 —	124	0	+ 98	— 16	1 —	120	15.9	59	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

ENQUIRIES.

"He that questioneth much shall learn much."—Bacon.

Cloches.—Where can I get the cloches so largely used in market gardens? They used to be advertised in the *Gardeners' Chroniole*, but are not now. *X.*

NOTICES TO CORRESPONDENTS.

Carnations Diseased: *E.J.* Your plants are attacked by a fungus called Helminthosporium echinulatum, of which an illustration is now appended (fig. 28, p. 195). The disease was fully described in our issue for August 13, 1886. All diseased leaves must be removed and burnt at once. Sulphuring will do no good.

Cherry Leaves: *Florence.* Evidently the work of the larva of some saw-fly.

Dahlia: *Gardener*, and *M. H.* It is not uncommon to see two flowers joined together as in your specimen.

Dahlia Exhibiting: *S.* If the wording be "48 Dahlias, double, distinct," with no qualification, we are inclined to say that Cactus varieties should not disqualify; the Committee should decide, as they are responsible for the schedule.

Grapes: *J. C. G.* Muscat of Alexandria and Bowood Muscat are not distinct, and collections con-

taining these two varieties, as such, have more than once been disqualified at metropolitan shows.

Lily Fasciated: *J. C. & S.* By no means uncommon; more remarkable cases have been figured in our columns.

Names of Fruit: *C. J. N., Loughgall.* Apple, Calville St. Sauveur.

Names of Plants: *E. T.* 1, Convolvulus altheoides; 2, Lysimachia vulgaris; 3, not recognised.—*E. D. L.* 1 and 2, Erica tetralix; 3, the green Rose (R. bengalensis var.); 4, Lonicera flexuosa, golden var.; 5, Eryngium giganteum; 6, Rubus sp.; 7, Funckia lancifolia; 8, Thymus carnosus; 9, Zygadenus glaucus; 10, Hypericum androsaemum; 11, Aster lævis.—*G. P.* 1, Mentha Pulegium variegata; 2, Bidens tripartita.—*W. P.* 2, Muhlenbeckia complexa; 3, Polygonum cuspidatum; the others we cannot name without flowers.—*D. W.* A common variety of Impatiens Roylei.—*C. R., Epsom.* Leycesteria formosa.—*H. J. G.* 1, Spiræa Douglasi; 2, Lycesteria formosa; 3, Desmodium penduliflorum; 4, Tamarix gallicæ; 5, Cryptomeria elegans; 6, probably Passiflora Raddiana (flowers should be sent.)—*G. M.* 1, Gymnogramma ochracea; 2, Blechnum brasiliense; 3, Cibotium princeps; 4, Adiantum trapeziforme; 5, Polypodium aureum; 6, Tabernæmontana coronaria, fl.-pl.—*E. P. D.* Bocconia frutescens.—*J. F. D.* Euphorbia Lathyris.—*G. W. B.* Adiantum mundulum, probably dwarfed by cutting over, and by conditions of culture.

Pansies: *M. C.* Next week.

Papaver bracteatum: *C. W. D.* A not uncommon malformation, in which the stamens are represented by carpels.

Phormium tenax: *R. A.* It is very doubtful whether New Zealand Hemp as a crop would pay in this country, taking into consideration the great difficulties to overcome in properly cleaning the fibre and making it marketable, also the long time required for the plant to mature. So long ago as 1822 a company was established for its cultivation in the South of Ireland, but slow growth of the plant caused the project to be abandoned.

Raspberry: *T. F.* The flavour is of good quality, and the canes strong. We cannot say whether it is distinct or not.

Seedling Dahlia: *W. W.* Your flowers are too near Victoria to be worth keeping; the variety named is richer in colour.

Spiæa in the Parks: *R. W.* Probably S. Lindleyana.

Tobacco Curing: *Sigma.* You had better consult *English Tobacco Culture*, by E. J. Beale (London: E. Marlborough & Co.), price 5*s.* The process is too lengthy to be described here.

Verbenas Diseased: *P. B.* We know of no certain cure. Have you tried the application of sulphur?

Vines: *J. McI.* Your Grapes are attacked by the grub of Tortrix angustiorana, figured in our columns for October 21, 1882, p. 524. You must keep a sharp look-out for attacked berries, which should be removed and burnt.

White Lily: *M. C.* Nothing unusual.

CATALOGUES RECEIVED.

Thomas Horsman, 102, Godwin Street, Bradford—Dutch Bulbs.

Dicksons & Co., 1, Waterloo Place, Edinburgh—Flower Roots.

Armitage Brothers, High Street, Nottingham—Flower Roots.

Jas. M. Thorburn & Co., 15, John Street, New York, U.S.A.—Seeds of American Trees and Shrubs.

Jas. Veitch & Son, Royal Exotic Nursery, King's Road, Chelsea, S.W.—Bulbs.

John Laing & Sons, Forest Hill, London, S.E.—Bulbous Roots.

Thos. Methven & Sons, 15, Princes Street, Edinburgh, N.B.—Bulbs.

Communications Received.—W. H. T., Norwich, (Photos with many thanks).—W. B., (Pamphlet with thanks)—H. J. Ross, Florence.—W. R. H.—P. G.—W. N.—J. B.—J. A.—W. S.—J. D.—A. G. F.—E. J.—Webb & Sons.—N. E. B.—W. D.—E. Spooner, New Zealand.—J. O'B.—C. M.—W. B. H.—F. C. Heinemann, Erfurt.—T. Meeham, Philadelphia. R. B. & Co.—J. A.—W. H.—A. V. G., Ghent.—J. A.—Hardy.—M. C.

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Pint, 1*s.* 6*d.*; quart, 2*s.* 9*d.*; ½ gallon, 5*s.*; 1 gallon, 9*s.*; 4 gallons, 34*s.* Ask your seedsman for it, or apply to
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

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Sold in Packets, 6d. and 1s. each, and in
SEALED BAGS ONLY,
7 lb. 14 lb. 28 lb. 56 lb. 1 cwt.
2/6 4/6 7/6 12/6 20/-
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TEMPLE MILL LANE,
STRATFORD, LONDON, E.
C. & L. also supply Crushed Bones, Bone Dust, Peruvian Guano, Sulphate of Ammonia, and Nitrate of Soda, in best qualities only.

Complete Satisfaction Guaranteed
To all using preparations bearing our Trade Mark in accordance with our directions. *Refuse Imitations.*
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"PERFECT" WEED KILLER.—Gallon, 2/; 5 gal., 1/9, 10 gal., 1/6, 40 gal., 1/4 p. gal.
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TRADE MARK. SWIFT & SURE. WITHOUT WHICH NONE ARE GENUINE.
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Are absolutely Unsurpassed for Cheapness and Efficiency Combined.
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BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*

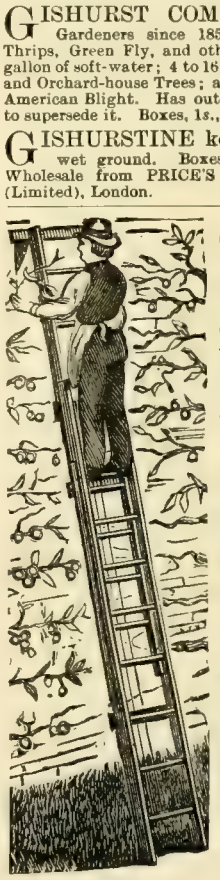
For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.
"PICRENA," THE UNIVERSAL INSECTICIDE.
SAFE—ECONOMICAL—EFFECTUAL.
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Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "Gentlemen—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."
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May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from
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SPECIALITE TOBACCO PAPER, the best and strongest in the market, 10*d.* per lb., 28 lbs. for 21*s.*
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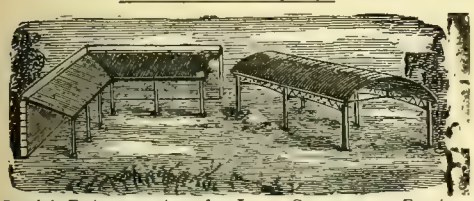
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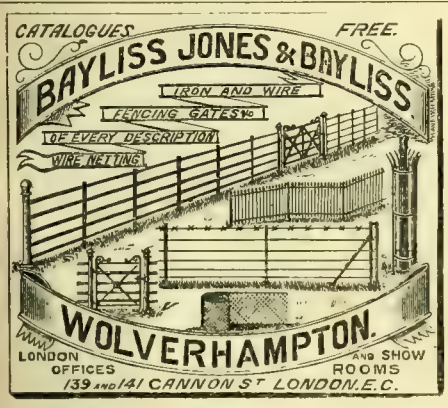


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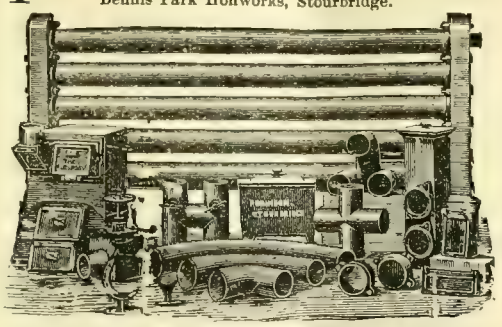
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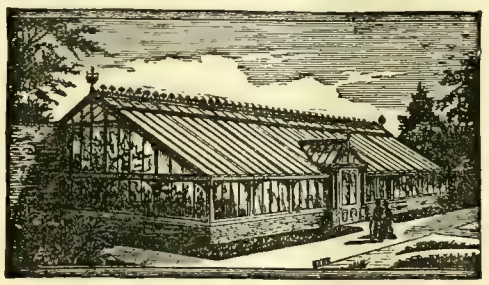
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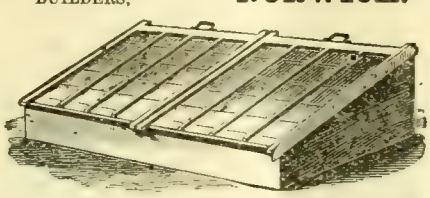
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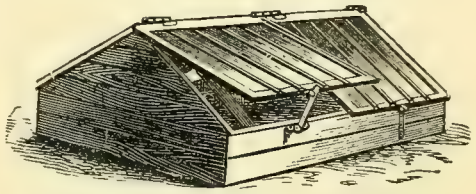
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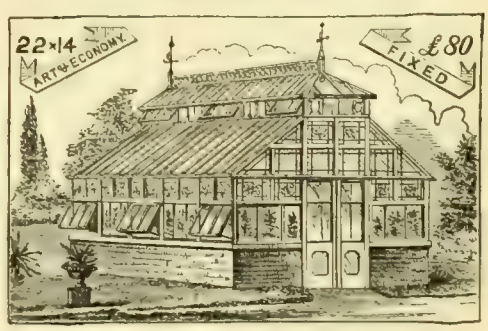


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8	„ ..	0	5	0	19	„ ..	0	10	6
9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
12	„ ..	0	7	0	23	„ ..	0	12	6
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PARTNER, WORKING.—WANTED, in a Market Garden, Florist, and Jobbing Business.—Particulars of T. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, PARTNER (Active), in Small Nursery, Seed, and Florist Business. A young man with a knowledge of the Seed Trade, &c., would be preferred.—GUNN, Market Hall, Birmingham.

PARTNER WANTED, to Invest about £200 to Extend the Growing Roses and Fruit with Glass. Good Land. A good opportunity.—Address F. A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Gardeners.

WANTED, a practical MAN, with Small Capital to join Advertiser in Small Nursery, Long Lease, or Sell.—MUSSETT, St. Ann's Road, Stamford Hill, N.

Head Gardener.

WANTED, a hard-working and experienced MAN, who thoroughly understands Kitchen and Flower Gardens, Vineries, and Conservatory; also Management of Grass Land (50 acres) and Cows. Twenty-seven miles from London.—F. H. NORMAN, Moor Place, Much Hadham, Herts.

Cardiff Union, Ely Schools.—Gardener Wanted.

THE BOARD of GUARDIANS will at their Meeting on the 7th of SEPTEMBER, 1889, appoint an INDUSTRIAL TRAINER in GARDENING, at their Schools, at Ely, near Cardiff.

The duties of the Officer will be to Cultivate the Garden, which is devoted to Vegetables only; Instruct and Assist the Boys in Practical Gardening and Field Work, and make himself generally useful about the premises, under the direction of the Guardians and the Master.

Candidates must be Single, or Widower without children, and possess a competent knowledge of Gardening.

Salary £40 a year, with board, lodging, and washing.

Forms of Application must be obtained from me, and returned not later than Monday, September 2, 1889.—By order,
ARTHUR J. HARRIS, Clerk.

Queen's Chambers, Cardiff.—August 13, 1889.

WANTED, a WORKING GARDENER, married, for Houses. Must be well up in Fruit Growing, and Early and Late Forcing. Wages 18*s.* per week; cottage, firing, &c.—Mrs. M. HAMPWORTH, Downton, Salisbury.

Gardener, Single-handed.

WANTED, a young Man. Must understand the Culture of Tomatos and Cucumbers, and good knowledge of Conservatory and Kitchen Garden. Good character indispensable.—C. R. DIBBEN, Riseholme Road, Lincoln.

WANTED, a SINGLE-HANDED GARDENER; married, and if Wife a Laundress preferred. Well up in Flowers, Vegetables, and Glass; with good personal references.—Mr. BIRTS, Abbey Wood, Belvedere, Kent.

WANTED, a SECOND GARDENER, where three are kept.—Must be fully competent both Inside and Out. Willing and obliging and have a good knowledge of Propagating and Plant Growing.—Apply, by letter only, giving full particulars, to A., Barrow Gurney, near Bristol.

WANTED, a MARKET NURSERY FOREMAN, Indoor and Out, in neighbourhood of London — Apply by letter only, to FOREMAN, Watkins & Simpson, Exeter Street, Strand, W.C.

WANTED, a SECOND MAN, used to Market Nursery and Fern Growing.—Wages and particulars to SHAWS, Valley Nurseries, Knostrop, Leeds.

WANTED, TWO good HANDS, accustomed to Market Work in Pots and Cut Flowers.—MARSHALL BROS. AND CO., Barnham, Bognor.

WANTED, for Jobbing and General Nursery Work, TWO active young MEN, age about 20, well up to their work and not afraid of it. Single, steady, industrious, and Good Templars preferred. Salary £6 per month, with free passage per mail steamer. Agreement for two years. No grumbling or discontented men need apply. Living here is dearer than in England. References required.—Apply by letter, CHAS. AYRES, Seedsman, Florist, and Nurseryman, Cape Town, South Africa.

To Gardeners.

WANTED, to go to Jersey, young, married MAN (no family), used to Forcing and Growing for Markets. Vegetables found and cottage to live in. Send references.—Apply, by letter, stating wages, to S. GODDARD, Esq., Hengistbury House, Brentford, Middlesex.

WANTED, a young MAN, used to Market Work, to Grow Grapes, Melons, Chrysanthemums, &c., and to take charge of a Small Nursery.—Full particulars as to wages, &c., to GODFREY, Nurseryman, Exmouth.

WANTED, a TRAVELLER, for the Wholesale Nursery Trade. None need apply unless thoroughly experienced in the Value of and Nomenclature of Nursery Stock, both Indoors and Out-of-doors; also should be well-known on the road.—Reply, stating salary, experience, &c., to THOS. CRIPPS AND SON, Tunbridge Wells Nurseries, Kent.

WANTED, an experienced FLORIST, to take charge of Shop in Birmingham. Must be good Wreath and Bouquet hand, with knowledge of Seed and Bulb Trade.—HEWITT AND CO., Nurserymen, Solihull.

WANTED, a SHOPMAN or ASSISTANT. Must have good general knowledge of Plants, Cut Flowers, and Seeds.—State age, experience, and wages expected, to PARKER AND CO., Nurserymen, Highbury, N.

GARDENING APPOINTMENTS.

Mr. WILLIAM RYE, late Head Gardener to R. N. HOOPER, Esq., Stanshawes Court, Chippen Sodbury, has been appointed Head Gardener to Captain BELFIELD, Malmains, Frenchay, near Bristol.

Mr. THOMAS HARRIS, late General Foreman at Holmewood Park, Tunbridge Wells, has been appointed Head Gardener to EDGAR HIBBERT, Esq., Ashby St. Ledgers Lodge, Rugby.

Mr. A. H. RICKWOOD, for many years Head Gardener to J. FIELD, Esq., J.P., Latchmere House, Ham, Surrey, has been appointed Head Gardener to Lady FREAKE, Fulwell Park, Twickenham, Middlesex.

Mr. W. HIGGS, late Foreman to T. H. BRYANT, Esq., of The Gardens, Juniper Hill, near Dorking, has been engaged as Head Gardener by Mrs. F. C. BRYANT, Woodland Park, near Leatherhead.

WANT PLACES.

NOTICE TO ADVERTISERS.—In many instances Remittances in Payment of Repeat Advertisements are received without name, address, or anything beyond the postmark on envelope by which to identify the sender; this in all cases causes a very great deal of trouble, and frequently the sender cannot be identified at all.

Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisements which they wish repeated.

THE COMMITTEE of the FRENCH HORTICULTURAL ASSOCIATION wish to announce that they have on their Books a certain number of well-educated GARDENERS, who wish to get acquainted with the English language.—Young English Gardeners wishing to change their situation with French colleagues, can apply to the SECRETARY of the Association, 27, Gerrard Street, Shaftesbury Avenue, W.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, *(Limited)*, are always in a position to RECOMMEND MEN of the *highest* respectability, and *thoroughly practical* at their business. All particulars on application.
Telegraphic and Postal Address—"DICKSONS, CHESTER."

GARDENER (HEAD), or MANAGER.—Age 42, married; Grow for Market or Private. Upwards of thirty years' thorough practical experience in large establishments, possessing a thorough knowledge of both branches, where first-class Fruits, Flowers, Vegetables, and Mushrooms were Grown with great success; also had the Management of extensive Fruit and Vegetable Farm, where the produce was grown for preserving, &c. Healthy, and active. Characters of the highest order.—H. O., 37, Natal Road, Streatham Common, Surrey.

GARDENER (HEAD).—Mr. COCKERSOLL, of Stoke Rochford Gardens, Grantham, can with confidence recommend a first-class Gardener of twenty years' thorough practical experience in good establishments.

GARDENER (HEAD).—Age 30, married, no family; thoroughly practical in all branches. Three and and a half years in present place. Leaving through death.—E. HINARY, The Gardens, Blendworth, Horndean, Hants.

GARDENER (HEAD).—Orchid Grower of of large experience, combined with a good general knowledge of Gardening in all its branches, is now disengaged.—Unexceptional references on application to the CURATOR, Botanic Gardens, Glasgow.

GARDENER (HEAD); age 35, married, no family.—A GENTLEMAN who is giving up, can highly recommend his Head Gardener to any Lady or Gentleman requiring a good practical man, good character, &c.—Please apply to W. W., Sudbury Hill House, Harrow.

GARDENER (Head).—Qualifications of the profession well sustained on inquiry.—Care of Mr. MOORIS, Nurseryman, Acton, W.

GARDENER (Head), to any Lady or Gentleman requiring the services of a thorough practical man.—Age 36, married; twenty-three years' experience in all branches. Five and a half years' good references.—T. C., 26, Ospringe Road, Faversham, Kent.

GARDENER (Head).—No children; great practical experience as a Fruit, Flower, and Vegetable Grower. Understands Land and Stock. Highest testimonials as to character and ability.—ARMSTRONG, 21, Charlton Road, Harlesden, N.W.

GARDENER (Head).—Age 33, two children; eighteen years' experience—eight as Head Working. Highest references for honesty, sobriety, and capabilities of the profession. Understands all branches of the profession. State wages.—CULEA, Mrs. Wisson's, Paper Office, Enfield, Middlesex.

GARDENER (Head); age 30.—Mr. Anderson, Gardener to James Mason, Esq., Eynsham Hall, Witney, will be pleased to recommend his Foreman, William Guy, who has lived with him for the past three years, to any Lady or Gentleman requiring a thoroughly experienced Head Gardener. No single-handed place accepted.

GARDENER (Head), to any Nobleman, Lady, or Gentleman requiring a good practical man.—Age 40; thoroughly up in Orchids, Ferns, and Stove Plants of all kinds; Rhodanthe, Bouvardias, Forcing Grapes, Peaches, Tomatos, Cyclamens, Chrysanthemums; a good Kitchen Gardener. Good references, and abstainer.—E. D., Brockham Lodge, Brockham, near Reigate.

GARDENER (Head Working), where two or more are kept.—Age 37, married; thoroughly practical. Five years' good character from present employer.—ARNOLD, Sheet Gardens, Ludlow.

GARDENER (Head Working).—Married, two children (youngest age 10); thoroughly experienced in Early and Late Forcing, &c. Highest references from present and former employers.—T. W., Monson Road, Redhill, Surrey.

GARDENER (Head Working).—Age 35, married, without family; well up in all branches. Well recommended.—State particulars, T. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (Head Working), age 37; Married, one child.—A Gentleman wishes to recommend his Gardener; twenty years' practical experience in good establishments, thoroughly understands gardening in all its branches.—H., Crofton Court Cottages, Orpington, Kent.

GARDENER (Head Working), where one or more are kept.—Age 31, married, no family; life experience. Competent in all branches. Good Violet Grower. Three years' first-class character.—C., 18, Archbishop Place, Summer's Road, Brixton, S.W.

GARDENER (Head Working); Age 40, married.—A Lady will recommend the above, to any Lady or Gentlemen requiring the same. Seven and a half years' character. Also other references.—A. MERCER, Woodlands, Fulshaw, Manchester.

GARDENER (Head Working).—Age 36, married; thoroughly understands the profession in all its branches. Twenty-two years' practical experience. Good references from previous situations; and an excellent eight and a half years' character from present employer.—G. P., Whittlesea, Peterborough.

GARDENER (Head Working, or Single-handed).—Married; experienced in Houses, Flower and Kitchen Garden. Five years' character. Churchman and chorister.—A. LACEY, 35, Ellora Road, Streatham, S.W.

GARDENER (Head or good Single-handed),—Age 38, married, two children; thoroughly understands his work, good references.—WOOD, 16, Salisbury Road, Manor Park, E.

GARDENER.—Married; well up in all branches of Gardening. Good references.—T. A., Milverton, Somerset.

GARDENER; age 34.—R. Sanders, Gardener to A. De Rothschild, Esq., can with confidence recommend his Foreman, A. French, to any Lady or Gentleman in want of a Gardener; seven and a half years in present place as Foreman; eighteen years' experience.—Halton Gardens, Tring, Herts.

GARDENER (Good Working, Single-handed, or Second).—Age 28, single; good all-round man, understands Stove and Greenhouse Plants, two years' character.—W., 2, Brashar Cottage, New Park Road, Brixton.

GARDENER (Single-handed), or where help is given.—Age 27, married, no family; good references. Abstainer.—Please state wages, &c., SWAMLEY, Scalp Cliff Road, Burton-on-Trent.

GARDENER (Single-handed), or where help is given.—Age 27, single; twelve years' experience, Inside and Out. Thoroughly understands the Management of Fruit, Flowers, and Vegetables. Good references from last and previous places.—C. ANDERSON, Cedars, East Sheen.

GARDENER (Single-handed); age 26, married.—W. D. Curzon, Esq., will be pleased to recommend his Gardener to any Lady or Gentleman requiring a good practical man. Twelve years' experience in the General Work of a Garden—Inside and Out. Excellent characters. At liberty any time.—GARDENER, Astley House, High Street, Putney.

GARDENER (Single-handed) or otherwise.—Age 28; married when suited. Four years in present situation. Good character, and well recommended.—J. C. ROCKSHAW, Merstham, Surrey.

GARDENER (Single-handed or good Second).—Age 28, married, no family; Wife Laundress if required, good plantsman, fourteen years' experience, highly recommended.—GARDENER, 3, Devonshire Place, Child's Hill, N.W.

GARDENER (Second, or Single-handed).—Age 21, married; ten years' experience in all branches. Good references.—E. RENDALL, 3, Hillhouse Road, St. John's Hole, Stone, Dartford, Kent.

GARDENER (Second), In and Outside.—Age 22; three and a half years in last situation. Good references.—W. J. C., Head Gardener, Brooklands, Cambridge.

GARDENER (Second), where four or more are kept.—Single; ten and a half years' experience. Total abstainer.—J. WELLS, 2, Western Road, Tonbridge Road, Maidstone, Kent.

GARDENER (Second), Inside or Out.—Age 36; married; two children, ages three years, fourteen months. Twelve years' experience, good references.—T. W., North Hyde, Southall, Middlesex.

GARDENER (Second), where four or five others are kept.—Good experience in Early and Late Forcing, Plant Growing, Flower and Kitchen Garden. Near London preferred. Good character and well recommended.—Apply, stating wages, to G. H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (Second, or Under), Inside and Out.—Age 23; seven years' experience. Excellent character from Head Gardener to Gore Langton, Esq., Hatch Park, Taunton, and other references.—WILLIAM GODDARD, Sandhills, Cattistock, Dorchester.

GARDENER (Under), where three or four are kept, Inside and Out.—Age 24; good reference.—W. STROUDE, Riverhead, Sevenoaks.

GARDENER (Under), in a Private Establishment.—Age 23; seven years' experience Inside and Out. Can be highly recommended.—W. S., 12, Wigan's Cotts, Mortlake.

WANTED EMPLOYMENT, as Single-handed or Under. Good Gardener. Age 22.—Recommended by Hon. Mrs. ANSON, Cookham.

NURSERY MANAGER, or FOREMAN.—Age 48.—G. PEARSON, 3, Purbeck Terrace, Bournemouth.

FOREMAN.—Age 26; thirteen years' experience in good situations. Active and obliging. Three years as Foreman in last situation. Can be highly recommended.—W. COOK, The Gardens, Holmwood, Wimborne, Dorsetshire.

FOREMAN, PROPAGATOR, and GROWER.—Twenty years' thorough experience in the General Nursery Trade; also Bouquets, Wreaths, &c.—A. B., Mrs. Sneap, Elm Terrace, Borrowash, Derby.

FOREMAN, or Second in Gentleman's Establishment.—Age 24; eight years' experience in good places. Well recommended. Abstainer.—FOREMAN, Greys Road, Henley-on-Thames, Oxon.

NURSERY FOREMAN, Out-door or General.—Practical knowledge of Landscape Work. Over twenty years' experience in leading establishments. Excellent references.—HORTUS, 41, Wellington Street, Strand, W.C.

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PROPAGATOR, or PROPAGATOR and GROWER.—Well up in Pelargoniums, Bouvardias, Carnations, Hydrangeas, Solanums, Calceolarias, Genistas, Primulas, Ficus, Ferns, &c.—H., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Nurserymen.

GROWER and ASSISTANT PROPAGATOR.—Age 22; six years' experience in first-class Nurseries. Well-up in Wreaths, Crosses, &c.—H. ALCOCK, York Place Nursery, Dumfries.

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MARKET GROWER and PROPAGATOR of Roses, Ferns, Chrysanthemums.—Well up in Choice Fruits, Mushrooms, and all Flowering Plants for Cut Bloom and Market Trade. London practice, and character good all round.—A. B., 22, Baxter Gate, Doncaster.

JOURNEYMAN (First), in a Large Establishment, or as FOREMAN in a Small Place.—Age 26; can be well recommended.—E. WITTLES, Eastcourt, near Malmesbury, Wilts.

JOURNEYMAN, Inside and Out, if required.—Age 20; six years' experience. Good character.—W. BUSH, Golding's Hill, Loughton, Essex.

JOURNEYMAN, in good Establishment.—James Hobbs, Gardener, Chelston Cross, Torquay, will be pleased to recommend a young man as above.

JOURNEYMAN, Inside and Out, in a Gentleman's Garden.—Four years' experience. Good character.—G. DEANE, 1, Mawson Cottages, Chiswick Lane, Chiswick.

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To Gardeners.

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TO NURSERYMEN.—Situation wanted. Age 25, married. Good Budder and Grafter.—H. PIPER, Framfield, Sussex.

TO GARDENERS.—Wanted, a situation, in a good Garden, for a Lad (age 16), where he can Learn the whole routine of Gardening. Premium given.—Reply, with particulars, to J. B., Sudbury Hall, Derby.

AGRICULTURAL MANAGER.—Belgian Gardener, educated, certificated of the Horticultural School at Vilvorde, desires an engagement as above.—E. MARTIN, Gistoux, Belgium.

SHOPMAN, or MANAGER.—Age 30; thorough knowledge of Seed, Bulb, Plant, and Flower Trade. Good references.—WM. HARRIS, Hammerwood, East Grinstead, Sussex.

To the Seed Trade.

SHOPMAN, Wholesale or Retail.—Five years' experience. Good references.—X. Y. Z., *Gardeners Chronicle* Office, 41, Wellington Street, Strand, W.C.

SHOPMAN (Assistant).—Good experience in Bulb and Seed Trade. Could assist in Plant Houses if required.—WHITE, 5, Hope Terrace, Acton Green, Chiswick, W.

TO SEEDSMEN.—Advertiser seeks situation in Seed Business, &c. Good knowledge of Trade, Office Routine, &c. Part time in large London Houses. Age 25. Good references.—DELTA, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

DANIEL FROST, only surviving Son of the late Philip Frost, of Dropmore, seeks an engagement, Light Employment, or Position of Trust. Has a slight knowledge of the French language, age 46, no objection to go abroad.—Address, Park Street, Slough.

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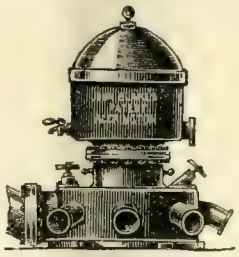
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's Covent Garden in the said County.—SATURDAY, August 17, 1889. Agent for Manchester—JOHN HEYWOOD.

MASSACHUSETTS

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2539.

No. 139.—Vol. VI. {Third Series.} SATURDAY, AUGUST 24, 1889. {Regt. as a Newspaper. WITH SUPPLEMENT.} PRICE 3d. POST-FREE, 3½d.

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Friday Next.

ORCHIDS in FLOWER.—CATTLEYA MENDELII.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, August 30, a quantity of ORCHIDS in FLOWER, an importation of CATTLEYA MENDELII, for sale without reserve, and an importation of CATTLEYA SYLVATICA, SCHOMBURGKIA LYONSII, S. CARINATA, ONCIDIUM TETRAPETALUM, BROUGHTONIA SANGUINEA, &c.

On view Morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. F. Sander & Co. to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, August 30, at half-past 12 o'Clock, importations of the following valuable ORCHIDS :—

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MONDAY, SEPT. 16.—At the DYSON'S LANE NURSERY, Upper Edmonton, by order of Mr. H. B. May.

TUESDAY, SEPT. 17.—At the BURNT ASH LANE NURSERIES, Lee, S.E., by order of Messrs. B. Maller & Sons.

WEDNESDAY, SEPT. 18.—At the LEA BRIDGE NURSERIES, Leyton, E., by order of Mr. John Fraser.

THURSDAY, SEPT. 19.—At the BRIMSDOWN NURSERY, Enfield Highway, by order of Mr. John Maller.

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On view mornings of Sale and Catalogues had.

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Tuesday, August 27, 1889.

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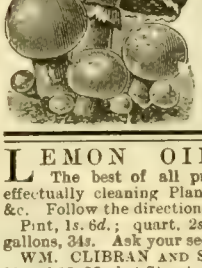
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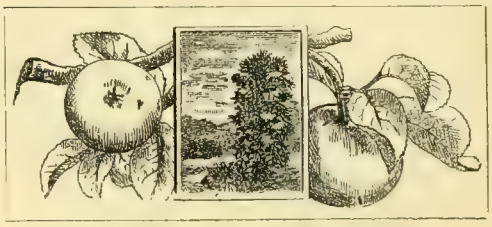
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 24, 1889.

GLASGOW BOTANIC GARDEN.

AFTER having been closed to the public for some two years, the famous Glasgow Garden was re-opened to the public at the beginning of the present summer. Whether the course taken by the City Corporation is strictly legal or not, seems to be a matter of dispute. Indeed, the affairs of the Glasgow Garden seem as involved as were once those of the Garden of the Royal Horticultural Society at South Kensington before the happy exodus of the Society took place. In some particulars there seems to be a close correspondence between the history of the two institutions, but while, on the one hand, the result to horticulture proper of the removal of the Society from South Kensington, and its divorce from fashion and frivolity has been wholly beneficial, the close of the Glasgow Garden, on the other hand, would be an unmixed evil to the progress of horticulture and botany, and a serious detriment to the sanitary and social welfare of the inhabitants. The situation is briefly this:—Early in the present century the Royal Botanic Institution was founded, and received a Royal Charter. The finances of the Institution did not prosper, and eventually a sum of money was borrowed from the Glasgow Corporation for the purpose of erecting a fine range of houses, illustrated in these columns on a former occasion (pp. 271, 275, 279, vol. xxi., n.s., 1884). Like the South Kensingtonians, the residents of Glasgow did not show their appreciation of their fine garden, still less did they realise the great importance to a commercial and manufacturing city of a properly equipped Botanic Institute and Museum, where all branches of horticulture and botany might be studied, and especially those practical developments which lie at the root of so much of the prosperity of Glasgow.

The consequence has been, that the Institute was not only burdened with debt, but found itself unable even to pay the interest upon it. In this way the debt (reckoning interest and principal) now amounts to about £54,000, and

the Corporation, acting as the Commissioners did at South Kensington, entered into possession. The city magnates, however, have throughout shown a higher sense of justice, a keener appreciation of right and wrong, and a fuller apprehension of their duties than the Commissioners, and if they for a time closed the gardens to the public, they have taken good care of them till circumstances should permit them once more to render them available to the public. If worst came to worst, the gardens would be sold—a disgrace to the city which we are happy to think is not at all likely to ensue. The Glasgow citizens are far too keen to allow such waste, and worse than waste, to happen. They are, as every one knows, about the most pushing and prosperous community in the kingdom. Fettered although they have been by legal doubts and disabilities, and prevented from developing the interests, scientific, practical, and social, of the gardens, they have not only saved them from destruction, but kept them up in good condition. Mr. Bullen, on whom the charge has rested, is too good a gardener to do anything else.

The city, too, boasts a University whose history the citizens may look back upon with pride, whose present condition they may regard with complacency. The welfare and the development of the Botanic Garden are, of course, matters of absorbing interest to that great school of science. With such interests at stake, and such motives for their promotion, we cannot but look forward with hope to the future.

The solution of the present difficulty lies in the settlement of a boundary question. At present the garden is at Hillhead, which is outside the city boundaries, and it was felt that the citizens could not fairly be taxed to keep up an institution beyond their frontiers. Parliamentary sanction has been solicited for permission to extend the municipal area, and to secure a scientific frontier in place of the present arbitrary one; but Parliament has a good deal to do, and so much time has been taken up with various other matters, that Glasgow, like many another place, has had to wait, and still waits. In the meantime, under all the circumstances few will be found to blame the action of the authorities of the city in the course they have taken of opening the garden at a low rate of admission. This we may look upon as the precursor of the establishment of the garden as a public institution free to all.

When that happens, there will be no fear that the garden will deteriorate as a place of recreation and a healthful resort, that the ornamental positions will be neglected, or that open spaces will be unduly encroached upon. The rights of the public in these particulars are sure to be studied. The love of horticulture is widely diffused among the merchant princes of Glasgow as elsewhere. Orchids are well nigh as fashionable in the neighbourhood of the city on the Clyde, as they are near the Thames or the Mersey, and when that is the case it is the fault of the managers of botanic gardens if they do not profit by the circumstance, and establish relations to the advantage of all parties. In and near Glasgow, too, are enterprising nursery firms of high repute, and nursery firms are usually good friends to botanic gardens, understanding the advantages of "give and take." At the same time, as we have already mentioned, there has been in the past, a close connection between the University and the garden, and the interests of science demand that this should be made still closer. It is not too strong an expression to say that out of Glasgow sprang Kew. Our predecessors have told us what the zeal and energy of Dr. (afterwards Sir William) Hooker did for botanical science and the Glasgow garden in the time of his professorate. Indeed, we have only to turn to the *Botanical Magazine* to see for ourselves how important a botanical centre the Glasgow garden then was, and how largely and wisely the Professor availed himself of the opportunities which the great foreign and colonial commerce of Glasgow placed at his disposal to import, describe and distribute plants of economic, decorative, or scientific interest. It was as the direct consequence of what Dr. Hooker had done for Glasgow that he was appointed to take the superintendence of Kew—with what results we all know. The commercial relations of Glasgow with all parts of the world must be enormously greater now than in those days, her imports far larger, her manufacturing industry vastly increased. These circumstances furnish ample reason for the development of botanical research, the study of economic botany in all its departments, and the establishment of museums and technical libraries under the direction of a University Professor.

New or Noteworthy Plants.

EULOPHIA BELLA, N. E. Br. (n. sp.).

This charming novelty has been introduced into cultivation from the Zambesi region through the exertions of Mr. J. O'Brien, of Harrow, and has flowered for the first time with Mr. Gumbleton in Ireland. It was originally discovered during the Zambesi expedition, conducted by Dr. Livingstone, on the Manganja mountains by Mr. Meller, in September, 1861, and has possibly been distributed from Kew, as Lissochilus No. 3, Meller. The original label states that it was found growing amongst Cereals, Sedges, &c., in and near cultivated land in plains between the Manganja mountains. It is an exceedingly pretty species, the combination of the colours yellow, white, carmine, rose, green and brown making it very attractive; the flowers are of good size and substance, and quite equal to E. streptopetala, Ldl. (Lissochilus Krebsii. Rchb. f.), in beauty, although entirely different in colour, and will probably be found to be quite as easy to cultivate. The pseudobulbs measure from about 1½ to 2½ inches in length, and ¾ to 1¼ inch in breadth; they are prostrate, somewhat flattened, and connected in a chain-like manner, forming a sort of jointed rhizome, growing prostrate on the ground, and throwing out roots along the sides. Leaves (only two seen) 6 inches or more long, ⅜ to ½ an inch broad, thick, and somewhat fleshy-coriaceous channelled down the face, glabrous, green, not produced on the flowering tubers, or, at least, not from the same point. Scape, 1½ to 2½ feet high, green, mottled with purplish, glabrous, without leaves, but having several acute, green sheaths, closely applied to the stem, those at the base crowded, and overlapping each other, the upper ones distant. Raceme bearing a dozen or more flowers. Bracts narrow, oblong, acute, concave, about ½ inch long, green, stained with brown. Pedicel and ovary together about ¾ inch long, green, glabrous. Flowers 1¼ inch in diameter. Sepals ovate-oblong, acute reflexed, dull purplish-brown, with the base and spaces between the central nerves green. Petals broadly ovate, obtuse, about seven lines long, and the same in breadth, clear chrome-yellow on the back, rosy-carmine, with darker veins on the face. Lip three-lobed, side-lobes adhering along their hind border to the sides of the base of the column, their front margin nearly straight, front lobe about ⅓ inch long, oblong, obtusely rounded at the apex, concave beneath, elevated above, with three prominent keels on the disc, spur straight and conical; the outside of the lip is whitish or creamy, pale yellowish on the underside of the middle lobe, and dull green at the apex of the spur; the inside is rosy-carmine, with darker veins on the side-lobes, and the disc and keels of the middle lobe clear yellow. *N. E. Brown, Herbarium, Kew.*

Montbretia securigera, *D.C.*

An interesting form of this curious species was recently brought to Kew by Mr. James O'Brien, who has imported a quantity of it from Grahamstown. The typical form has reddish-orange coloured flowers, with some yellow spots on the three lower segments, from which arise the curious quadrate or hatchet-shaped processes from which the specific name (hatchet bearing) is derived. But among Mr. O'Brien's plants was one specimen in which these processes are wanting, although in one flower on the spike there are slight rudiments of them, in all other respects the flowers are identical with the normal form. Mr. O'Brien tells me the plant does well and flowers very freely out-of-doors, and is probably nearly hardy if kept dry during the winter. *N. E. B.*

Miltonia Schroderiana (Odontoglossum Schroderianum, *Rchb. f.*).

This is a gem of the first water, and the lovely plant of it bearing twenty-five flowers in the collection of R. H. Measures, Esq., excels even the glowing description given to it when first introduced. The flowers which resemble in outline those of Miltonia Karwinskii, but with lip even more showy and ample than that of M. Warscewiczii, are borne from five to seven together on four spikes, about 1 foot in height. The sepals and petals are yellowish-white, barred with brown; and the showy labellum is of the richest crimson on the basal half, and pure white on the outer half. The whole plant has a soft greyish-green hue of the same cast as that of M. vexillaria, but more shining. It is one of the rarest and prettiest of recent introductions. *J. O'B.*

HECKFIELD HALL, WINCHFIELD.

A visit recently made to Heckfield Gardens, Winchfield, gave the assurance that, although the recent death of the patriarchal Viscount Eversley had necessitated some reduction in the labour expenditure of the estate, yet Mr. Wildsmith appears determined that the general condition of the gardens shall not materially decline. Everything appears to be as orderly, and in respect of fruit crops, &c., of as high quality, as in any former period. One misses on the terrace-garden some of the rich carpet-beds of former years; yet this feature of gardening is not altogether unrepresented.

The flower garden.—But the flower-garden is highly effective, and maintained with scrupulous neatness. Mr. Wildsmith allowed many of the winter things, and especially the dwarf Retinosporas and other Coniferous plants, to remain in the beds, and filled in with tuberous-rooted Begonias, and such things as Heliotropes, Fuchsias, &c. This was done for the reason above set forth; still the terrace-garden appears as beautiful and attractive as ever. The specimen Retinosporas planted out permanently on the grass are highly effective, the golden forms being particularly handsome. Single and Cactus Dahlias find a place in the large vases and stone basket-beds, associated with tall Pelargoniums, Marguerites, &c.; and that wonderful walk in the kitchen garden, lined on either side with a dense hedge of Cupressus Lawsoniana, kept closely clipped, with a narrow border at the foot of it, appears as attractive as ever. Though less elaborately planted than in previous years, Cactus and Single Dahlias form the background, the branches tied out flatwise against the hedge; the carpet design is worked out in variously shaped panels and designs with Herniaria glabra, Sedum glaucum, and one of the low-growing variegated Sedums, with Retinospora, green and variegated; Chamæpeuce, and other plants, in their midst. Alternate panels are formed of Mesembryanthemum cordifolium variegatum; flowering Begonias are also introduced with great advantage. On the terrace-

garden Messrs. Sutton & Son's charming Begonia Princess Beatrice forms one of the loveliest of dot-plants. On the terrace are some vases filled with plants of the New Zealand Flax, and they make handsome objects.

The pleasure-grounds are, as usual, scrupulously neat. Tree and shrub alike seemed to have put on the best possible leafy dress. On the slope falling away towards the drive which leads in the direction of Bramshill are some very fine specimen Coniferæ, that in the form of tree and colour of foliage present a singular contrast to Beech, Oak, Elm, and others, that flourish so luxuriantly on the estate. The following may be specially mentioned:—Abies cephalonica, A. nobilis, A. magnifica, A. concolor, A. Douglasi, of which there are several very fine specimens; Pinus insignis, and Cryptomeria japonica. But this by no means exhausts the list. On the banks of the ornamental water are some very fine clumps of Arundo conspicua, with their silvery plumes gilded by the rays of the sun in the pleasant evening-time. It has a great advantage over the Pampas Grass (Gynerium argenteum), that its inflorescence is seen at its best at the end of July—much earlier than the latter. Some clumps of Bambusa Metake near the water's edge are also conspicuously fine.

Fruit Gardens.—The Vineries exhibit, as usual, Mr. Wildsmith's prowess as a Grape grower. The Lady Downes' house has a heavy crop of promising bunches; Muscats are quite up to their well-known form; and in the late vineries Black Hamburgh, Gros Maroc, Alicante, Madresfield Court, and others, are carrying good crops of fine bunches.

Of Strawberries there has been a great crop. Laxton's Noble has proved itself an excellent early variety; and though Mr. Wildsmith cannot say it is of the best quality, it is yet of great value as furnishing an early crop. Noble and Viscountess Héricart du Thury are being prepared for forcing; the latter is found the best main crop variety for that purpose. President is grown only in small area; Viscountess is a better cropper and finer quality at Heckfield than the last named.

Peaches have been an excellent crop under glass. The earliest was Alexander, and was followed by Hale's Early, Bellegarde, Dr. Hogg, Crimson Galande, Grosse Mignonne, and Noblesse. Of Nectarines Lord Napier leads the way, followed by Elruge and Pitmaston Orange. On walls in the open Peaches and Nectarines show very good crops, and the trees are in fine condition. Out-of-doors the following varieties do well at Heckfield:—Alexander, Dymond, Sulhamstead (a fine variety, greatly resembling Noblesse, and ripening at the end of August and in September), Stirling Castle, Violette Hâtive, and Princess of Wales. Royal George is subject to mildew on the foliage very much in the open; but of all the Peaches to rely on for a crop outside, none can compare with the Nectarine Peach, a variety that always bears well.

Melons and Figs are excellent crops under glass; and Tomatos are produced in great abundance, and very fine.

In the open the Apricot crop is a small one, but the condition of the trees is very good. Moor Park is the best, and the Shipley is also grown.

Of Plums there are on walls excellent crops of Early Rivers (which was ripe in the middle of July on a west wall), Jefferson's, Kirke's, Autumn Compote, Pond's Seedling, Victoria, Old Orleans, Washington, and Greengage. On east and west walls alike the trees fruit well.

The Pear crop on walls and elsewhere is almost a failure through the ravages of the caterpillar. The best crops are on trees against a south wall. Louise Bonne of Jersey, Beurré Hardy, Marie Louise, Seckle, and Duchesse d'Angoulême, are the most fruitful.

Apples all round are a failure; the foliage of the trees was stripped by the caterpillar before the fruit was set, and this is characteristic of the Heckfield district.

Vegetables are remarkably good all round. Mr. Wildsmith still stands by such good old sorts as Champion of England and Ne plus ultra Peas. One of Messrs. Sutton & Sons' specialties, a fine green Marrow named Satisfaction, is highly spoken of. Gladiator and Sturdy are regarded as two very fine market Peas—good croppers and excellent quality. Sutton's Giant White Cos Lettuce appears to be all that is required in a summer Cos Lettuce; and in the light fertile soil of Heckfield Autumn Giant Cauliflower comes very fine.

Sutton's Early Regent Potato is of admirable quality as an early variety—a most excellent table sort; and Abundance, a remarkably fine main crop variety. *R. D.*

COLOUR IN PLANTS.

(Continued from p. 187).

The foregoing facts will once more show how much there is to learn as to the origin of the different kinds of reds and purples, whether in the foliage or petals. Mr. Sorby could not succeed in deriving erythrophyll (red coloring matter), from tannic acid (a cause of some yellows), and came to the conclusion that "it seems difficult to account for the production of erythrophyll by any mere chemical change." That light is necessary in some cases to produce a red is seen in the fact that when one leaf partly hides another, as in Ampelopsis Veitchii, the latter will photograph the outline of the former in green (where shaded) on a red ground (where exposed). This red is a degradation product, and apparently not a true erythrophyll, as in Coleus leaves, when we think of the red and yellow of the stem of Cuscuta, the purples of some Orobanches and Lathræa, none of which produce any chlorophyll. It is clear that in these cases such colours have never been derived directly from the parasite, but indirectly from the host, and may thus be comparable to the coloured solution or granular matter of flowers. So that while chlorophyll may be credited as giving rise directly to some, other colours can only by referred to its action indirectly. In pursuing his researches on erythrophylls, Mr. Sorby found that reds are referable to two kinds of substances, one unoxidised (in active leaves of Rhubarb and flowers of Calceolaria and Dianthus), and the other to the same when oxidised (autumn red leaves). This discovery seems to corroborate the view that reds in active leaves, unlike yellows, are not strictly products of chlorophyll at all, but collateral substances. On the other hand, yellow tints in leaves mostly indicate some imperfection of chlorophyll, and have a feebler vitality, as is general with variegated plants, which become intensified through oxidisation in autumn, when vitality ceases altogether.

"When chlorophyll is dissolved in bisulphide of carbon several different crimson and red substances are formed, but it is uncertain whether some are exclusively or only mainly due to the blue, and some to the yellow chlorophyll. . . . It thus appears that chlorophyll is, in the first instance, decomposed by light into various coloured compounds, which become colourless on further exposure, and that these may be developed so as to be very conspicuous or scarcely visible, according to peculiar conditions." If such results occur in the laboratory, it opens out possibilities which may account for the occurrence of reds as resulting from chlorophyll directly; but, as Mr. Sorby says, "there are a variety of conditions, not yet completely understood."

The latest observations, however, tend to show that yellow colouring matter is not derived from the green colouring matter of chlorophyll, for M. Courchet has discovered that the solid yellow "chromoleucites are always proceeds from an uncoloured leucite, or else from a grain of chlorophyll; but the pigment only appears in the most frequent case, when the chlorophyll has disappeared. In no case does the coloured pigment proceed from the direct transfer of chlorophyll."*

* *Recherches sur les Chromoleucites, Ann. des Sci. Nat. Bot.* 7 sér., tome vii., p. 263.

Yellows are due to members of the xanthophyll group as well as to others, such as the chrysotannin group.

In yellow variegations in leaves this colour is due to relative increase of yellow chlorophyll over the blue chlorophyll, and in autumn leaves the yellow is a product of chlorophyll by oxidisation, and if erythrophyll is present, it unites with the xanthophyll, and may pass from orange to scarlet. Now, it seems extremely likely from Mr. Sorby's researches, that analogous processes have something to do with the colourisation of flowers, and "since the chemical changes taking place in leaves are manifestly related to their vital state, it seems by no means improbable that the production by cultivation of very different colours in flowers, naturally of nearly uniform character, may be due to some kind of abnormal change in their vital powers. thus modifying chemical affinities." As illustrating these remarks, Mr. Sorby adds:—"Though there is a material difference in different cases, yet, on the whole, the various substances of the chrysotannin groups changed by oxidisation from more or less pale yellow to orange or red compounds, and some of these readily pass into blue or green, or into brown modifications of greater stability, apparently by undergoing some molecular change, independently of further oxidisation."

As an illustration of the little we know about causes, is the fact that of all the yellows of the xanthophyll group, Mr. Sorby found that yellow xanthophyll was the most stable under sunlight, yet the very flower, yellow Chrysanthemum, from which he obtained this, is the one Mr. Burbidge refers to as readily fading to white when exposed.

(4) and (5). Bud-variation Hybridisation.

The variations of colouring which appear on separate shoots of the same plant, or what is called bud-variation, have often been recorded, the Chrysanthemum, as recent writers have observed, being a very characteristic plant in that respect. But when we look for a cause, it at present escapes us. Similarly, why second and subsequent crosses raised from hybrids should be so variable is not known, though it is easy to see how colours combine, such as reds and yellows, making orange tints. But why white should, so to say, eliminate one of two colours, as is the case with Mr. Veitch's Rhododendron mentioned by Mr. Burbidge, is not known. Similarly, when Princess Alexandra (white) was crossed with P. javanicum (orange), the offspring formed a series with pink corollas. Another as yet unrecorded instance is one in which the white Princess Alexandra was crossed with a crimson-scarlet Duchess of Edinburgh; the offspring, called Monarch, being of a bright yellow-orange, this signifying that the crimson out of the scarlet is nearly eliminated, the yellow, which was only recognisable in the scarlet tinge, now appears as the main colour, this yellow being traceable to the grand-parent, R. Brookeanum var. gracile. Further, two colours may eliminate one another. Thus, Purity (a pale yellowish white) is derived from Rhododendron Teysmanni (Golden-yellow) crossed by Taylori (pink). It is suggestive here of the presence of an acid and an alkali, which, when combined, produce a neutral salt, which, perhaps, is colourless, but it is impossible at present to speak positively. Another result is the dissociation of colours, as when two different colours refuse to blend, but appear as spots, blotches, stripes, &c., in the offspring. This seems to show some want of affinity, but at present it is quite inexplicable, and we must be cautious against at once concluding a sufficient cause, merely because one observes the fact.

Mr. Burbidge appears to refer the blue colour of some flowers to the blue element of chlorophyll, or what Sorby calls blue chlorophyll; but it is doubtful if this be the case. The remark quoted above from Sorby hints at the probability of blue being a degradation product, like the yellows and browns of autumn leaves. Moreover, I am not aware that blue extracts give any spectrum resembling that of blue chlorophyll, but in point of fact but little has been

observed with blue flowers. One curious result of an acid is that when "yellow xanthophyll," as obtained from a yellow Chrysanthemum, is treated with a little hydrochloric acid, it is decomposed, first into a new and paler yellow substance, and afterwards into a fine deep blue colouring matter.

Evolution and Colours of Plants.

With regard to the evolution of colours, observations appear to corroborate the idea that the order is yellow, orange, red, purple, blue; and Mr. Sorby came to the conclusion that a yellow leaf implies "low constructive energy." It agrees with red and olive Algæ in this respect; so that while we can use the terms "weak and strong" as applicable to the constructive energy of the higher plants, they run parallel, so to say, with lower and higher types of energy in different classes. "If this conclusion be confirmed, it would be an important fact in connection with the theory of evolution, since it would show that, as in the organisation of animals, where development is arrested, there is a more or less permanent continuance of a lower type of structure, so in plants there is a permanent continuance of a lower type of colouring" (*Veg. Chrom.*, p. 483).

Colouring and Insect Fertilisation.

High colouring of flowers may be generally considered as the result of nutrition and vigour, and whatever cause tends to increase this latter, *cæteris paribus* may brighten the colours of flowers. I have suggested elsewhere that the weight and pressure of insects, when visiting flowers, act as a local stimulant; thus the prototype tends to respond to these invitations set up, the result being modifications in the size and form of the various organs; and in many cases an intensity of colour with specially localised spots, streaks, &c., wherever the proboscis of the insect travels in search of honey. For the line of argument in support of the probability of this conclusion, I must refer the reader to my work on Floral Structures.

All things considered, the reader will now see how truly Mr. Sorby wrote when he said the subject of origin of vegetable colours, or "chromatology," is in its infancy. I would only add, that if florists would register any peculiarity they may notice in hybridisation, in plants grown in special or artificial manures, or under varying conditions of light, heat, and moisture, it would be a great aid to those who attack this subject with the view of arriving at some sound generalisations. The practical outcome might be that the florist, to some, perhaps a large extent, could in future assist Nature in arriving at certain colours required, or even put her on the track to make them. *George Henslow.*

THE AMERICAN APPLE CROP.

We take the following particulars relating to the Apple crop from the report of the Agricultural Department of Nova Scotia, an advance copy of which has been obligingly sent us.

United States.

During the month of June there is usually a decline in the condition of Apples, insect damage being common, and injury resulting from late frosts, or unseasonable weather earlier, becoming apparent during the month. The returns of last month indicated very poor prospects in most of the States of large production, although in the more northern districts it was too early to give more than an approximate statement of condition, the season not being then sufficiently advanced to show definitely the damage resulting from cold and frost. Returns for July show that this damage was more serious than was expected, and the decline during the month has been generally and unusually heavy. This decline has been especially heavy in New England and New York, where the young fruit has dropped badly, and caterpillars have been active locally. In this group of States, Rhode Island and Connecticut alone give promise of a fair crop, to be attributed perhaps to the fact that last year, when the crop was one of medium size elsewhere, these States had but a small yield. In Connecticut, especially during the past few seasons, the bearing habit seems to have been reserved, the most abundant crops coming in odd rather than even years.

The unfavourable nature of the present returns can be best appreciated by a statement of condition in a few of the States where Apples are largely produced. The basis of the return is 100, representing a full crop, uninjured by weather, insects, or other unfavourable conditions. Maine stands at 85; Vermont, 65; Massachusetts, 68; New York, 59; Pennsylvania, 65; Virginia, 78; North Carolina, 85; Tennessee, 71; Ohio, 62; Michigan, 70; Indiana, 76; Illinois, 86; Kansas, 80.

Nova Scotia.

In Annapolis and King's there is a decided increase in acreage of Apple and Plum orchards and small fruits. The orchards are, somewhat silently, but surely, extending and growing in importance in nearly all the counties of the province. The efforts of the Fruit Growers' Associations, effects of exhibition, and the increased domestic use of fruit, are all aiding in bringing about this result. Still the production of fruit for distant markets is limited very much to two counties—Annapolis and King's. In the former, the orchards this season reported variously in the several districts, as (1), in poor condition; (2), in good condition, and set well; (3), as having suffered from caterpillar and canker-worm, now looking well, fruit set moderately full, and maturing satisfactorily; Plums a poor show; (4), appearance of trees good, but no fruit worth mentioning; (5), present condition of orchards very good, considering insect onslaughts, and fruit very well set; (6), orchards making more than usual growth; a small quantity of fruit set, but growing finely; (7), a very full blossom; later sorts did not set well; the earlier, such as Gravensteins and Kings, very plenty and promise well.

In King's County, reports from leading fruit districts are somewhat similar:—(1), blossomed well, but not a full setting, scarcely an average crop, maturing well; (2), set fair, but dropped very much, at least 20 per cent. below average; (3), set well, and maturing satisfactorily; (4), blossoms unusually numerous, but failed to set heavily, trees growing well, many destroyed by caterpillar and canker-worm, and will be a total loss this year; (5), not set abundantly, young fruit dropping; (6), Apples same, owing probably to frost; (7), blossomed pretty well; (8), good.

As regards the leading market varieties of Apples, Bridgetown reports all winter sorts not over 50 per cent. in quantity; Kings and Gravensteins 100. At Round Hill, quantity 25 per cent. below average; there, and at Annapolis, Greenings half a crop; Baldwins, 75 per cent.; Gravensteins, 80; Ribstons and Yellow Bellefleur, 100; Nonpareil and King of Tompkins, 100. At South Farmington also the crop will be 25 per cent. short, while Clements estimates a crop of 85 or 90 per cent.; Nictaux, 50 to 75; and Paradise from 40 to 130. Kings, Baldwins, and Gravensteins, are the only sorts reaching to or above 100.

Nearly all reports speak of the fruit being likely to be of unusually fine quality, the trees having a comparatively small crop to mature, and the season being favourable both for growth and early maturity. But English fruit-growing gardeners know very well that bark growing trees will not mature perfect fruit, unless they are subjected to severe summer pruning; many, no doubt, if not all of our fruit growers, know this just as well.

Ontario.

Frosts in the latter part of May caught the orchards in blossom, and the result was a wholesale destruction of fruit. Apples have suffered terribly. In many orchards an Apple is hard to find; in others there is as high as half a crop, but in no section is there a full yield. The Northern Spy is specially mentioned as having escaped severe injury. Pears, Plums, Cherries, and Peaches were also injured in the blossom. Grapes fell an easy prey to frost; in some instances the wood was killed to the earth, but as a rule the second bud started. Strawberries were half a crop, and Currants gave a light yield. Raspberries have done remarkably well.

F. W. BURBIDGE, M.A.

We have already alluded to the gratifying recognition on the part of the authorities of the University of Dublin of the claims of horticulture on academic honours in the person of Mr. F. W. Burbidge. We now avail ourselves of the opportunity of presenting our readers with a portrait (fig. 29) of the gentleman thus distinguished. It is a matter of the more gratification to us, in that we have been privileged to watch the career of Mr. Burbidge from the time when he was a Chiswick student to the present time, when he occupies a foremost place in the ranks of the craft. We may further allude to the circumstance as a gratifying evidence of the utility of the educational scheme once acted on by the Royal Horticultural Society, but which, for various reasons has been allowed to fall into abeyance. Now that the Society has been reorganised on a more purely horticultural and a more popular basis, it might be well if steps were taken to reorganise the scheme, and thus promote the best interests of horticulture by bringing the best men to the front.

Mr. Burbidge was born at Wymeswold, in Leicestershire, in 1847, became a student at Chiswick in 1868, and gained honours from the Society and the Society of Arts. On leaving Chiswick, Mr. Burbidge passed some time at Kew, where, among other things, he paid much attention to the art of botanical drawing. In 1873 he became attached to the *Garden* newspaper, and since that time he has been a frequent contributor to the gardening press. His work on *Cultivated Plants* is, in spite of some defects in arrangement, one of the most useful works ever compiled, and one which always stands ready for reference on the Editor's table.

His work on the Narcissus, written in conjunction with Mr. Baker, is well-known to all cultivators of that genus, which, largely through his exertions, has again become so popular. His travels in Borneo and the Sulu Archipelago, on behalf of Messrs. Veitch, not only resulted in the introduction of various species of Nepenthes and other plants, but largely increased our knowledge of the botany of those islands. His *Gardens of the Sun*, a book in which he gave an account of his wanderings, has deservedly taken a high rank in the literature of travel. In 1879, Mr. Burbidge was appointed Curator of the Botanic Gardens attached to Trinity College, Dublin. His success in that capacity is known to all horticulturists, and has now, as we have seen, been recognised in the gracious manner already recorded.

UNUSUAL HARDINESS OF CERTAIN TENDER PLANTS.

It is no uncommon occurrence to hear of plants having the reputation of being perfectly hardy in any soil or situation, failing to re-appear above the surface, even after one of our average winters is past, to say nothing of those which may be characterised by extreme severity; but whether the winter of 1888 and 1889 may figure as exceptionally severe, or not, there was abundant severe frost—I believe we registered—25° to kill anything which may fairly be classed as bedding plants, but I have one or two instances in the little garden fronting my cottage quite the reverse. I make no pretence at a general bedding-out system, and suffice merely by putting out a few odds and ends to make it as gay as possible, and for as extended a season as circumstances will permit.

Last summer I planted out Tuberous Begonias, Fuchsias, Coleus, Nicotianas, Pentstemons of the gentianoides section, and a few others, to fill in the

spaces between dwarf H.P. Roses, Pyrethrums, Lychnis Haageana, masses of Violas, Pinks, &c.; in fact the bedding plants named were planted over clumps of Tulips, Crocuses, and the like, after they had completed their season's work. Last autumn my attention was so much taken up elsewhere that the Begonias were left to themselves, and for the time forgotten. I examined one of the tubers early in the year, but the heart appeared frosted, so I returned it to its place, thinking all the rest were in a similar state. But judge my surprise when I saw one pushing through the soil a few weeks ago as sturdy and vigorous as ever. Yes, there was no mistake about it, and on looking round I found another, two tubers having not only survived, but will make fine flowering plants also this season, many buds being even now apparent. That these tuberous Begonias were comparatively hardy I was fully aware, but I also had the conviction that the least frost was fatal to them, but here they are living examples, and barely 2 inches of soil above them. Let the reader remember that these were forgotten for the time, and then he will realise that not the slightest protection was afforded them. There were a dozen planted originally, and these two are the only survivors, and these I shall still allow to remain, just to see if they are capable of further endurance. Nor is this all that passed the winter in my small garden, for I have two Fuchsias—one Mrs. Marshall and the other Monarch, both well-known kinds, a plant of each of which has started fresh growth, though it must be stated that the latter is somewhat weakly, while the three longest of the new growths on Mrs. Marshall are fully 6 inches long.

In the same garden Nicotiana affinis has proved a true herbaceous perennial, and is now flowering for the third time in the same position, a fact which lends value to an already popular plant, inasmuch as it may be planted *ad libitum* in shrubberies and similar places where it could display its beauty to advantage, and fill the evening air with fragrance, all for the cost of the original planting. The hybrid forms of Pentstemon gentianoides, however, I regard as the most valuable of all, for we know too little of the real worth of these plants as summer bedders. Too often the small plants obtainable in spring barely reach flowering size before the autumn, and even then one or two spikes are all that are produced. On the plants in my garden are some fifteen or twenty spikes each, in various stages, some in flower, others in bud, and so on, which will form a rich display for some time.

In such gardens, where light, well-drained soils abound, there should not be much difficulty in keeping these through the winter, and where beds are devoted to them, some common bracken (Pteris aquilina) would meet their requirements. By an attempt thus to save them, fine specimens and much earlier bloom result, but should the beds be needed for spring bedding arrangements, then the old plan must be adhered to still, as the old plants do not lift at all satisfactorily. *J.*

Die Natürlichen Pflanzen familien.—Dr. Engler and Dr. Prantl's useful publication on the natural orders of plants has now reached its thirty-fifth part. In it the Aristolochiaceæ are treated of by Dr. Solereder; the Rafflesiaceæ, by Count Solms; and other orders, by Dr. Engler.



F. W. BURBIDGE, M.A.

Roses.

POT CULTURE AND PROPAGATION.

We are now looking for the autumn bloom on our Roses out-of-doors; indeed, at the time of writing, I could cut plenty of large handsome blooms of Tea Roses, and an abundance of that beautiful Bourbon, Souvenir de la Malmaison. There is a sufficient supply of hybrid perpetual blooms, and under glass Maréchal Niel is producing a second crop of highly-coloured flowers. What troubles us most at this season is mildew, which spreads freely amongst the hybrid perpetuals, and if the leaves are not cleansed from it, not only does the "quality" of the flowers suffer, but the damaged leaves are anything but attractive in appearance. Sulphur mixed with soft soapy water, and applied to the leaves with a syringe, will destroy the fungus; but more than one application is required. The mildew generally appears after a spell of hot, dry weather, and neglected Rose bushes suffer most from its attacks.

After the summer blooms have been cut, if the weather continues to be dry, the surface of the ground ought to be stirred up with a hoe. If it be hard, a draw-hoe is necessary; indeed, we found the ground so hard this year, that ordinary hoes of the draw or Dutch type were useless, and I had two made of good steel, in form like a carpenter's adze. With this we managed to break up the ground as deep as was necessary to prevent it from cracking. The ground should be well watered where necessary, and mulched over the surface with decayed manure. Mulching and watering are among the most important points

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in Rose cultivation, and a liberal supply of water should be given once a week. We do not grow many standard Roses, although most of the dwarfs are either budded on the Manetti or the seedling Brier.

I mentioned, at p. 753 of the previous volume, the importance of lifting and replanting the Rose bushes once in three years, and I was pleased to hear Dean Hole remark at the Rose Conference, that lifting and replanting the Roses in his garden at Rochester had been attended with beneficial results. Owing to various causes, the plants require re-arranging after the third season; and when they are out of the ground, suckers can be cut back close to the base, and the long, thick, fibreless roots can be much shortened. The result of this during the first season, is a mass of fibrous roots close to the base, and the show of bloom is good, even the first season. If the Roses have been many years on the same bed, it is well to remove some of the old exhausted loam, and replace it by some old decayed turf. A layer of good manure 15 or 18 inches below the surface is an excellent application if the season after replanting happens to be a dry one.

Roses in pots suffer much from mildew; and when they are placed in a warm position, red-spider will also aid in extracting the juices from the leaves. As a rule in private establishments, Roses grown in pots are not well attended to from the time they pass out of bloom until they are put in to force again; but the best results cannot be obtained unless the plants have careful attention during that period. Generally, Roses grown in pots do better out-of-doors during the summer and autumn than they do under glass. Tea or other tender varieties would do best under glass, if in a light airy house not over-crowded with other plants. In cold wet districts, other Roses might also be all the better for glass protection. We generally re-pot them in July each year. Roots push away freely at once, and the Roses are firmly established before the end of the season, and this is absolutely necessary in the case of those intended for early forcing. Free daily syringing of the leaves during the growing season, with rain-water, if possible, will keep the plants clean and healthy, and they never do well unless placed in an open position.

It has been a good season for budding. All good Rose growers learn to bud their own Roses; and the more enthusiastic do the work in the evening. Large growers have to continue the work all day, but the evening is the best time, as the buds have the advantage of the cool night. The Manetti and seedling Brier stocks are budded close to the ground, and the standards as close as possible to the stem. The propagation from cuttings may be done during this month or next. I do not like them to lose their leaves, and therefore plant them on the north side of some low wall or fence, and cover with hand-lights, or they may be planted in a frame of prepared light soil; but the point is to keep the bright sunshine from them, and they must not be too close in the frames, or they are likely to damp off. All cuttings ought to be taken off with a heel attached. *J. Douglas.*

DECORATIVE PLANTS AT MOOR PARK.

The value of the standard old flowering plants in decorative work was well exemplified at the Moor Park flower show on August 14th, when Mr. Mundell, Lord Ebury's gardener, arranged effectively a whole tent with foliage and flowering plants. The arrangement although extensive was very carefully worked out, and an excellent example of floral work resulted. One thing could not fail to be noticed—and with the greatest pleasure by gardeners of the old school—and that is the beauty of the old plants chiefly used; prominent by their beauty being many large specimens of white and blue Campanula pyramidalis; elegant plants of the white Francoa, with ten or twelve flowering spikes. Nierembergia gracilis, Trachelium cœruleum in various shades; several excellently flowered Eucomis punctata; Begonia nitida, B. argyrostigma, Pentas carnea, Diplacus glutinosus, Vinca rosea, and Vinca alba, Rivina humilis in berry, white and crimson Lilium lancifolium, Achimenes, pretty plants of that most effective old light Fuchsia Rose of Castile, and other well-known plants of olden time, among which the large pyramid specimens of Rollisson's Unique Pelargonium was a grateful reminder of days gone by. These charming flowers, set up with foliage plants, such as Palms, Ferns, and tall plants of Amaranthus salicifolius, formed a display well worth the run to Moor Park to see, although the six or eight tents devoted to the exhibition were all well filled.

The large tent, with groups of plants, was full of valuable specimens well arranged. Among the best was an extensive arrangement set up by Mr. Condie, gardener to S. J. Blackwell, Esq., of Harrow Weald, who had some magnificent Kentias, large specimens of Alocasia Sedeni, A. zebrina, and A. metallica, set up with well-coloured Crotons, flowering plants, and Maidenhair Ferns. Mr. Deane, gardener to the Earl of Essex, had a brilliant group, in which large specimens of Eucharis amazonica and other flowering plants contrasted well with the richly coloured Gladioli in pots. In the arrangement of Mr. Myers, gardener to Lord Clarendon, the many plants of the fragrant white Gesnera tubiflora (odora) were very attractive; and Mr. Bye, gardener to Mrs. Gladstone, Northwood Hall, had a very extensive and fine arrangement, chiefly of well-grown Ferns, some of which were rare species.

AMERICAN POTATO CROP.

Potatos.—The present returns show some enlargement of the area devoted to Potatos, although the increment is apparently smaller than has annually appeared during the past few years. In the older States the enlargement is small, probably not keeping pace with the increase in consuming population; but in the newer districts, where settlement is still active, and in those where the preponderance of a single crop is giving way to a diversification of products, the increased breadth is material. The total acreage will probably exceed 2,500,000 acres, although no final estimate of acreage in any crop will be made until the results of a special thorough census test now in progress are known.

July condition of Potatos is usually reported high, the crop still having the trying season of its growth to pass. In the South, a good portion of the crop is already made at this date, and in some other districts the early crop is practically assured; but these are very small items in the aggregate production, and the weather, exemption from insect enemies, and other causes of loss after that date, very largely determine the size of the total crop. The present returns make condition slightly lower than last year, but not far from the average for a series of years at this date. It stands at 95·1 against 95·7 last year, 93·2 in 1887, 96·6 in 1886, and 97 in 1885. The July figures, however, can only serve to show present condition at the time of the report, and cannot be taken as any very safe indication of the final crop result. During the last four years the July standing and the final crops of the year have been:—

Years.	Standing July 1.	Crop.	Per Acre.
		Bushels.	Bushels.
1885	97·9	175,029,000	77·2
1886	96·6	168,051,000	73·5
1887	93·2	134,103,000	56·9
1888	57·9	196,000,000	79·0

In 1887, condition was but two-and-a-half points lower than last year, but the difference in the season later made a difference in the yield per acre of more than 22 bushels. Should present condition be maintained throughout the season, a crop somewhat above 200,000,000 bushels would be made, but the records of past years show that such high condition is rarely sustained till harvest.

FRUIT REGISTER.

ALEXANDER PEACH.

This is the earliest Peach that I am acquainted with. The fruits, too, are large, handsome, and highly coloured. I commenced picking ripe fruit from a tree on a wall having a south-west aspect on July 15. It is, moreover, a strong-growing and free-bearing Peach, and, therefore, should find a place in all gardens enclosed by a wall or fence of some kind. Here the Alexander Peach is quite a fortnight earlier than the Amsden.

Orleans Plum.

There is no more useful and free-cropping purple Plum than the old Orleans, it being alike useful for table and culinary purposes. Trees here occupying south, west, and north aspects, on walls, are all well cropped with fruit of first-rate quality. It is true the trees are in fine condition, being young, vigorous, and healthy. Intending planters should make a note of all kinds of fruit trees which do well in a season like the present. They may take it for granted that varieties of good quality which do well during unfavourable seasons will also yield satisfactory crops during all fairly good seasons. *H. W. Ward.*

ORCHID-HOUSES AT SHIPLEY HALL.

In our issue of June 8, this year, we gave a note of the garden, and especially the new Orchid-houses at the fine estate of E. M. Mundy, Esq., at Shipley Hall, and we have now the pleasure of giving an illustration of the range of houses referred to in that note. It will be seen by it that the praise we accorded Mr. Wm. Elphinstone, was indeed well merited, for few collections can boast of healthier plants or a better display of bloom. The range was built by Messrs. F. Sander & Co., of St. Albans, and every requirement which their knowledge of Orchids has suggested has been provided. The houses are built of Pitch Pine, and varnished, not painted, and a Pitch Pine trellis along the walk renders the house comfortable to visitors, while the floor beneath can be kept so wet as requisite to preserve the necessary humidity. Overhead will be seen a very fine show of varieties of Odontoglossum citrosmum, while the first division has many magnificent forms of Odontoglossum crispum, O. Pescatorei, together with Cattleyas.

THE POTATO DISEASE.

During the last few days the disease has spread very rapidly, and it began sufficiently early to destroy three parts of the Ash-leaved kidneys and other early varieties. The Early Vermont, of which a large breadth was planted in a field, has suffered almost as much as those; indeed, the only Potato that does not at present show any trace of disease is the Champion. The haulm is very vigorous, and we may hope that this sort may escape. It seems a waste of printer's ink to speculate as to the cause of the disease, or to suggest anything to prevent it, except to dig up the old crop, and destroy all the diseased tubers, and to burn every scrap of haulm that has been affected by it. Evidently, farmers and others do not think anything of attempting to stamp it out in this way; they leave the diseased tubers to rot on the ground, and the dessicated tops to blow about hither and thither, whereas it might be easy to make a large fire in the field, and so to burn up the dried haulm and decayed tubers together. Evidently the farmers do not know anything about the transmission of the disease from one season to another by means of the diseased tubers and affected haulm. As far as one is able to judge, the disease seems to be developed by a favourable state of the weather—that is, for the fungus. Dr. Lindley wrote very clearly and well about the disease in the *Gardeners' Chronicle* for August 23, 1845, the year when it first appeared in England as a national calamity; and I do not think

we can say much more about it now. He says, "the cause of this calamity is, we think clearly traceable to the season. During all the first weeks of August the temperature has been cold, from two to three degrees below the average—we have had incessant rain and no sunshine." It was just such weather that brought the disease last year, followed by a deluge of rain in the last days of July, which almost annihilated our crop. Those who have noted the spread of the disease from year to year would also observe that the Potatos suffer most when heavy thunder showers follow excessive heat. Early in July this year it was excessively hot, the haulm flagged very much by day, and the plants seemed as if they would stop growing altogether, at a time when the tubers could not have been half-grown. However, a change came suddenly by a terrific thunderstorm, which broke immediately over us, and lasted nearly three hours; all that time the rain fell heavily, and before it cleared off, an inch in depth had fallen. The result of this was, that the haulm was badly attacked in a few days afterwards. It is noteworthy that the season of 1845 was in character similar to the last two, at least as regards this neighbourhood. Dr. Lindley, in the article alluded to, says, "If the first days of July had not been suddenly hot, it would not have happened, and perhaps it would not have occurred had the temperature been high instead of low, even although the sun did not shine, and rain fall incessantly. It is the continuation of untoward circumstances that has done the mischief." The learned Doctor added that the unusual warmth of the beginning of July had been preceded by "a period of cold, ungenial weather; at that time the temperature of the soil near London was beween 60° and 68°; the Potatos grew excessively fast, their tissue was soft and unconsolidated, filled with azotized matter, as all such tissue usually is, and peculiarly liable to run into a state of rottenness." The predisposing causes of the disease are here clearly stated; but the question arises, "In what way does it help us to combat the disease?" All attempts to arrest its progress are useless [!]. I note the remarks by "A. D." about "the basin in the ridges, formed of the moving stems, to be a receptacle for spore-laden rainfalls." That would happen on heavy soils if high winds and heavy rainfalls came together, but I do not see that it has occurred anywhere, either in the garden or the field here; and the disease threatens to destroy the crop. I have just examined the kidneys—Ashleaf, Myatt's Prolific, and one we had under the name of Uxbridge Kidney. They are all alike. I am on the safe side when I say that three-fourths of the crop are diseased. We have a mid-season white variety, of which I am not sure about the name. The haulm is badly attacked, but it is still sound at the base; one and two tubers on each plant have the disease, and many have the white spots alluded to in my few remarks at p. 158. (We have a very different tale to tell now—August 10). This variety has not been earthed-up, and is planted on a sheltered dry border. The experiments made a few years ago in the gardens of the Royal Horticultural Society at Chiswick with Mr. W. G. Smith's Potato disease preventative, might be recalled to our memory, but as a matter of daily practice we do not think of preventing the disease until it makes its presence felt [and then complain that all attempts to prevent it are useless!].

The Jensen system of bending the plant over and piling up the earth in a ridge over the stems some 3 or more inches from the crown of the plants, was thought to be an excellent expedient to prevent the disease from reaching the tubers by rain transmission from above; but here again old established custom comes in, and no one thinks of earthing up on the Jensen system, until it is too late to do so with any hope of benefit [the Chiswick experiments at least show that the case is not hopeless even when the haulm is destroyed. Ed.] When the disease was very prevalent in Scotland about thirty years ago, I can well remember some of the cottagers who could ill afford to lose their Potato crop, cutting the tops off close to the ground as soon as it was seen that the haulm was affected. This, to a certain extent, saved the crop, but if it was done before the tubers were half grown, a great loss ensued in that way, and sometimes when the disease was not nearly so bad as was expected, those who left their crop alone came off the best in the end.

Two years ago I visited a large garden in the North, and found the gardener digging up his crop when the haulm was in quite a green state, in order as he said, to save it from the disease. I spoke of the injury to the tender skins in storing the crop; and he said this was avoided if the tubers were left on the surface of the ground for a few hours, until the skins became tough. There is danger of the disease destroying the Potatos when dug up and stored, if the foliage was attacked by the disease, because the tubers which may look sound enough on being taken out of the ground might not be so in reality, the germs of the fungus are present in the tuber, although their effects are not visible to the naked eye, and one cannot give each Potato a minute inspection; and so it happens that in a few weeks the heap of Potatos becomes a mass of rottenness, with some sound Potatos embedded in it. *J. Douglas, Great Gearies, Ilford.*

MAGNOLIAS.

Magnolia hypoleuca, *S. & Z.* (M. glauca, *Thunb.*).—This fine, highly interesting tree appears in all the mountain foliacous forests of Japan from Kiushiu to Zezo, not, however, collected together, but scattered about among other deciduous woods. Towards the north its frequency increases; it attains here, also, its largest dimensions, trunks of more than 2 m. circumference and 20 to 25 m. high. It is found, also, in the high foliaceous forests of Middle and Northern Hondo, on the island of Yezo, and even in Southern Sachalin. It rivals in height and thickness the other deciduous forest trees in its company, and all the other varieties of its own race, even the North American M. grandiflora. Few of its kindred endure the rigours of winter so well also.

This Magnolia loves a good soil, and grows best in the shade of high trees, especially the Beech forests. Oaks, Maples, Ashes, and especially Æsculus turbinata, and Calopanax ricinifolia are frequently its companions, as has been before stated.*

The smooth greyish-white bark of the straight trunk, which in thick high forests is branchless to a considerable height, reminds one of the Beech. The crown is formed of thick, widely spreading, but not so numerous nor so ramified branches, and its leaves and flowers give the tree a peculiar beauty. The former strongly resemble the leaves of the American Magnolia tripetala, Mich., especially in their prominence, but are much larger, viz., 15 to 20 cm. long and 5 to 8 cm. broad. They are elliptical and smooth-edged; on the upper side of a beautiful green colour, and underneath greyish-white, as indicated by the name "hypoleuca." Every branch develops about ten leaves, which are crowded together in verticillate form near the end, In the midst of this beautiful wreath of leaves there unfolds about the middle of May or beginning of June a splendid large white flower, with a Pine-apple-like perfume. Even later in midsummer this Magnolia presents a strikingly beautiful appearance. When the wind sways the foliage of the Magnolia-lined mountain side, and the lower side of the leaf is turned upward, the tree looks to one at a little distance as if it were for a second time covered with blossoms.

By October the trees are bare. The long ellipsoidal reddish-brown fruit capsules, with their pink seeds, soon follow the leaves. The seeds, like all of this species, soon lose their germinating power, which is probably the main reason why it is still a stranger to our European gardens.†

Magnolia hypoleuca in Japan surprises and delights every lover of plants, and it is easy to agree with Dupont when he calls it more ornamental than Magnolia grandiflora. The light greyish-white wood changes gradually to a deeper shade. It is soft, easily bent, and elastic, and has a fine even grain, which makes it applicable to many uses. The wood engraver uses it in patterns for cloth printing, and the lacquerer finds it adapted to various small articles. The sides of the pretty, light, and durable oval bread-baskets are generally made out of Magnolia. Two thin strips of the wood are bent around the elliptical Pine-wood bottom, their sharpened ends bent over each other and glued, and tacked to the bottom board. Sword-sheaths were also formerly made from this wood. In Niigata and Zonezawa it is used as the groundwork of nearly half of all the lacquer ware, and from it is prepared the soft, fine-grained charcoal which is used throughout the whole of Japan for rubbing the lacquer, and for polishing the enamel of cloisonné ware. *Rein, "Industries of Japan."*

* Dupont errs in his work, which has already been several times quoted, when he says (p. 58), "On le trouve toujours associé au chataignier." On the contrary, I found the Magnolia but seldom in the company of the Chestnut, which latter makes far less demand upon the soil, but much greater upon the light and heat. It loves sunny mountain slopes, but does not grow in the same high altitudes as the Magnolia.

† I have made repeated unsuccessful attempts to propagate this plant from the seed in Europe. All Magnolia seeds sprout on their way through the tropics, and reach us with dried-up germ fibres. Out of a collection of badly-packed and half-withered small trees which I received eight years since, about half-a-dozen were saved in the Botanical Garden at Marburg. Of these six, one was sent to Garden Inspector Lauche, one to Prince Troubetzkoi at Intra, and a third was given to the Botanical Garden at Frankfort.

Orchid Notes and Gleanings.

DISA SAGITTALIS, *Sw.*

Although this pretty terrestrial Orchid has been in cultivation for some three or four years past, I do not remember to have seen it recorded as a garden plant in these columns. It is an elegant species, with a rosette of several narrow, oblong-lanceolate green leaves, and a flower-stem 4 to 8 inches high, bearing a raceme of numerous white or slightly lilac-tinted flowers, with two violet lines on each petal, and one on the lip. The flowers are about half an inch in diameter; the spurred dorsal sepal is suddenly expanded at the apex into a somewhat crescent-shaped blade, three or four times as broad as the rest of the sepal, with the angles broadly rounded and twisted backwards. The side-sepals are oblong-obtuse, and directed forwards. The petals are linear-acute, with a broad, rounded lobe at the base in front, the tips curved back over the dorsal sepal. The lip is linear-lanceolate, acute or obtuse, or sometimes indistinctly three-lobed at the apex.

One great charm about this plant is the length of time it remains in flower, the spike from which this note was made was sent to Kew by Mr. O'Brien, who states that it "has been in flower over six weeks already," and there are still several buds to open on the spike. The plant is a native of South Africa. *N. E. B.*

Disas at York.

Looking along the fine house of planted-out Disas at Messrs. Jas. Backhouse & Sons, it seems difficult to realise the fact that a few years ago it was considered quite a feat to grow them successfully, and that there still are numbers of gardens in which they are regarded as "kettle cattle." In the York Nurseries, Disa grandiflora attains altogether unusual stature and beauty, even when compared with ordinary well-cultivated specimens, the stems of the stronger-flowering pieces having at the neck the appearance of sturdy Leeks, and the flowers are very large and brilliant in colour. Among them are at present in flower some seedling forms of great beauty, and which exhibit most extraordinary variations in colour.

One of these grand varieties has flowers 4 inches across the pair of side sepals, each of which is 2 inches wide, and of the most brilliant scarlet, with an orange glow, the odd hooded sepal blush-white, with rose veining. Another is as large, but has yellowish-red sepals, their outer halves tinged with rose, the hooded sepal being cream-coloured, veined with purple, and the curved petals in the centre yellow, spotted with a shade of brown. A third seminal variety has vermilion sepals, the hooded one almost wholly pale yellow, with very few red lines inside, and numerous faint ones outside. In several, the odd sepal is the prominent feature, the blush or pale-yellow ground of some exhibiting the most delicate tracery of rosy-crimson, and the petals varying as much, all being differently marked with red or brown on various shades of yellow, the upturned

edges of some being, in addition, tinged with crimson. A few remarks on the house and culture at York will be useful to many.

The Disa-house is 98 feet by 12 feet 6 inches; it is partly sunk, and has sliding lights on the west side, which are taken off in fine weather, from early spring to late in the autumn, and are left open all night, a practice that is most beneficial in autumn, as the plants get the benefit of the heavy night dews at that season. The beds are placed on each side of the house, the plants being planted any time from autumn till spring, although they are removed with equal success at some other seasons if this be required.

October is considered a good time for replanting. The soil used consists of rough lumps of fibry peat, with about one-third of coarse sand added, and rough blocks of sandstone or lumps of charcoal embedded in the soil for drainage. The bottoms of the beds on which the plants are placed are first made up with clinkers or burs (hard-heads) in preference to charcoal, as experiment has proved that the finest roots always were over the parts of the bed so prepared. The plants are liberally watered with rain-water for preference, but are not kept always wet, and they are never watered over the foliage in winter, but carefully picked out with a spouted can. So grown, the beds of D. grandiflora (or more properly D. uniflora, Bergius) have had more than 500 flower-spikes this season, with considerably more than 1000 large blooms. One fine spike was nearly 3 feet high, with nine flowers, each of which was 4½ inches across, the base of the flower-stem having a circumference of 2½ inches. Many others are well worthy to bear it company, and the bright green healthy foliage forms a fine setting to the brilliant flowers. Other rare Disas are doing equally well, and the fine Disa crassicornis is well advanced in bud. It must be a sincere pleasure, both to Messrs. Backhouse and the visitors to the nursery, to see such remarkable development of these fine South African Orchids. *J. O'B.*



Fig. 30.—Orchid houses at Shipley Hall. (see p. 214.)

Plants and Their Culture.

Bulbous-rooted Plants. — Many species and varieties of plants which may have made vigorous growth will be benefited by being placed in a cooler house for a short time. Eucharis amazonica will flower more freely if treated in this way, at the same time affording the bulbs less water after the growth is completed. We endeavour to have these useful plants in bloom at different periods, and to get the largest number of the plants in bloom in the autumn —a time when choice flowers are few. Our plants have just finished their growth, and have been removed to a cooler and drier house, where they will be kept quiet till required to force into bloom. Succession plants which are growing freely should be kept liberally watered with liquid-manure, these forming a succession to the autumn-flowering plants. Our young stock has just received a shift into larger pots; these were small bulbs that were placed in

6-inch pots when the older bulbs were repotted early in the year. They will produce a nice lot of spikes early next spring, if kept growing rapidly. When repotting Eucharis amazonica, a large portion of turfy loam, a small quantity of fibrous peat, using a larger proportion of peat if the loam is of a clayey nature, some broken charcoal, and bone-dust should be used. Some quarter-inch bones may be put over the drainage. We syringe heavily during the season of growth, and by this means mealybug is kept in check. Overpotting the bulbs should be avoided, as it is provocative of a diseased state of the bulbs, and moreover, when in good health pot-bound masses will flower more freely than others in the opposite condition. Pancratiums require similar treatment to Eucharis, but put only one bulb in a 6-inch pot, or three in a size or two larger. These plants are very serviceable when grown on thus, and they should get a shift when they have done flowering, and be given encouragement to make free growth. The useful Hymenocallis macrostephana is most useful for cutting purposes, and when it is grown in batches and rested a little, not keeping it thoroughly dry, but placed in a cooler house and kept rather drier, it can generally be depended upon to bloom when required. Their fragrant flowers are much appreciated.

Amaryllis.—The bulbs of these should, as previously advised, be given a light sunny place to ripen. A. aulica should not be omitted; it is a plant which will soon be starting into growth, and its large, handsome spikes will be found of great use in filling vases.

Miscellaneous. — The Gloriosas will continue to bloom freely yet, if kept supplied with liquid manure, and are free from thrips and red-spider. Our plants are grown at the back of a Cucumber-house, and there they produce a large quantity of bloom. G. Plantii should be grown in every collection, as it is a useful variety.

Gesneras will, if started into growth, as advised in a previous Calendar, be growing freely; keep the plants at the driest part of the house, and out of the reach of the syringe. I find that a cool shelf is the best position for them, as the foliage can be kept drier than when mixed up with the other inmates of the house. Plenty of water should be given them as they increase in size, and weak liquid manure occasionally, when the pots have become filled with roots. These plants are much affected by thrips, so that a hot, dry position is not a suitable one, it being impossible to sponge the foliage to get rid of the insects without injury to it. G. pendulina is a useful, early blooming variety; and G. zebrina and G. cinnabarina forms a succession to the first-named.

Achimenes, as they go out of bloom, should have less and less water, and be placed in a cool, dry, airy position for a time. Achimenes will, after a slight check, bloom profusely again, but it is not advisable to so exhaust the tubers.

The late-sown Gloxinias should now be large enough to pot into 60's, and as they have but a short season in which to grow, every encouragement should be given them, but they will not require another shift. The flowers will be found useful for cutting in the dull season. Any plants of Gloxinias of good coloured flowers, nice habit, or fine form, should have a label describing their good points stuck into the pots. The Gloxinias which were started early should now be dried off gradually in a cold frame or house. *Geo. Wythes, Syon House, Brentford.*

The Flower Garden.

Bedding Plants.—Greater brilliancy than these now present could hardly be possible, and only for a very short period longer will it be possible to maintain this state of perfection; still much may be done to keep the plants in good flower for a considerable time longer, by constantly picking off yellow leaves, spent flowers, and by preventing overcrowding by the use of the knife. For the most part, the trimmings will make excellent cuttings for next year's supply. Of course there are numbers of plants requiring this wholesale removal of growth to keep them in good flowering condition that would be quite useless for propagation; nevertheless, the task must be done in the interest of neatness and gaiety. The process must be applied to every class of bedding plants, hardy and tender, annual and perennial. As regards the latter, I have long adopted the practice of prolonging the flowering period by cutting away part of the flower-heads, even before the flowers have opened. I instance Phloxes, Pentstemons, and Antirrhinums; these, in consequence of the pinching or cutting back, break into renewed growth lower down the main branches, and flower much later than do the flower-heads that are left intact, and, as a matter of course, the secondary or side lateral growths do not produce so fine flowers, but what is lost in size is made up in quantity. I have tried the same plan of prolonging the flowering season of annuals, and on all the following species successfully:—Sweet Scabious, Salpiglossis, Anagallis, Cuphea, Coreopsis, Annual Chrysanthemum, Phlox Drummondii, Indian Pinks, and Sweet Peas. The latter will flower well from April to October, if occasionally so pinched, and the seed-pods are regularly picked off as soon as the flowers have faded. Successional sowings of these I have discontinued for years, and yet we have always an abundance of flower.

Foliage Beds.—These in their way are just as brilliant as are the flowers—Alternantheras, Coleus, and Iresine have never been better coloured nor the growth more robust, as will be admitted by all when I say that for the first time since the introduction of Alternantheras as bedding plants, I have this year found it necessary to shear away their growth, to prevent their encroaching beyond the described line. This work is necessary to be done to all plants, where the design is of a formal or geometrical pattern; all plants in such beds should be kept within their own boundary. Perfect keep in all arrangements of this sort, is, next to arrangement of colours, the one essential that is needed to the attainment of perfection. If the flat strict geometrical mode of planting be objectionable (it is to me), it is an easy matter to greatly modify the plan by a free use of graceful standard plants in the central position of the beds, or panels of the design, always taking care that their growth does not intersect any lines of the designs; sometimes they will do this, and then it is just as important that they be trimmed up, as is the trimming of the lines of design. Perfect neatness of the whole, is the great charm of foliage beds of this description.

General Work. — This will consist of the propagation of all kinds of bedding plants, that are not yet put in, the completion of the layering of Carnations, and insertion of pink pipings in cold frames or handlights — all tender kinds of plants to strike successfully must have a slight bottom-heat, two-thirds leaves, and the other stable litter—on this place frames, insert the cuttings in 5-inch pots, filled firmly with sandy loam, shade till rooted, then fully expose to the air. Sow annuals, on dry sunny borders to stand the winter where sown; and plant out in early spring. Keep all tall plants, such as Dahlias, Sunflowers, Castor-oils, and the like, well tied to their supports, and bad flower and seed-pods regularly picked off. *W. Wildsmith, Heckfield.*

Fruits Under Glass.

Strawberries for Future Forcing.—All the different varieties should now be in their fruiting pots, and standing on a bed of coal-ashes in a place exposed to the sun the whole day, and be attended to regularly with water. Pay constant attention to the removal of the runners and all weeds. Hasten the potting of any late runners that may remain on the fruiting beds. Fresh plantations should be planted at once, and in planting these the first two rows may be 2 feet, the next rows 18 inches apart, and so on, until the planting is finished, the object of the wide rows being, for the convenience of layering, narrow being left free for the purpose of watering, &c. There is, then, no danger of knocking over the pots. It will be found that young plants will produce earlier and stronger runners and better fruit than old plants which have fruited, and they are better to select the runners from.

Melons.—Continue a night temperature of 70° to 75° in the houses or pits, with a rise by day of 10° to 15°. Those in full bearing should have some manure-water afforded them when it seems to be needed, with top-dressing when roots appear on the surface of the beds. Give plenty of air as the fruits ripen, keeping the latter well exposed to the light, and supported off the soil in any suitable way. Impregnate all female flowers at mid-day; stop to one leaf beyond the fruit when set; damp the paths, and afford water when the plants require it at shutting up time on fine afternoons.

Tomatos.—These, although not strictly fruits, come usually under this heading. For fruiting through the winter, the plants should be potted into 11 or 12-inch pots, and stood in the house or pit where they are intended to grow, using in the operation some nice loam—not too rich—with a little rubble and bone-meal, and potting firmly. Train them to one stem apiece, give all the air possible to keep the plants dwarf and strong; syringe them occasionally with a solution of carbolic soap, to keep down white-fly. If planted out, do not give too much soil all at once, but add to the bulbs as root action increases; water with clear water. Plants in full bearing will be benefited with a rich top-dressing and a little manure-water. Keep old foliage and young side-shoots trimmed, fully exposing the fruit to the sun. *W. Bennett, Rangemore.*

The Kitchen Garden.

Celery.—Continue to earth-up this vegetable according to the demands of the family. In the matter of watering, the showery weather we have experienced will not have rendered it safe to dispense with the watering-pot, and a thorough soaking of the soil should precede the moulding-up. Successional crops should have periodical supplies of manure-water, or the soil in the trenches a dusting of Thomson's or blood manure, and, if possible, during showery weather; but where dung-water is at command, preference should be given to it. Where slugs are troublesome, a slight dust with powdered lime or superphosphate made from old iron slack, which is remarkably cheap, will keep them in check. When using the superphosphate, do not let it touch the plants more than can be helped; the slightest application proves fatal to slugs and snails, even to those black rascals which nothing else seems to disturb.

Cauliflowers.—No time should be lost in getting a sowing of these in for planting under handlights and frames, although in late districts, where the risks are great, little advantage is to be derived from autumn sowing. If seed be sown in the first week in January, and pricked into boxes and grown on in a mild temperature, and planted out in March after duly hardening them off, they will be quite as early as those wintered under glass, and will produce even better heads than those. If properly managed, they should grow on without a check.

Cabbages.—A successional sowing of these to stand the winter in the seed-bed should be made forthwith; also Savoys and Curled Greens. Continue to plant out Cabbages from the store beds for Coleworts at a foot apart.

Onions.—As the tops fall over at the necks, pull them up and dry them. A good way to do this in a wet season, is to tie them in bunches of a dozen or more; then stick some forked sticks into the earth, and place a stout rod in the forks, and on these hang the Onions. It is all very well in a dry season to leave them spread on the ground, but in a dripping one it is better to keep them out of harms way. As little knocking about as possible is advisable with ripe and ripening Onions, they being almost as susceptible as Apples to injury from bruising. When the Onions have become of a brown or golden colour, they should be taken to a cool and airy shed, and hung up in bundles. I do not approve of cleaning onions, until such time as they are to be taken to the kitchen. The hardest frost we experience in this country will not injure ripe Onions, but a close room will do them much injury. *Wm. M. Baillie, Luton Hoo.*

PLANT PORTRAITS.

Aquilegia flabellata, white fl. var., *Revue de l'Horticulture Belge.*—July, 1889.

Calanthe Darblayana, *l'Orchidophile*, June.—A hybrid between C. Regnieri × vestita gigantea.

Latace Volkmanni, Philippi, *Gartenflora*, July 15.—A bulbous, Liliaceous plant, from Chile, with small white flowers in umbels.

Lobelia laxiflora, H. B. & K., *Gartenflora*, July 1.—Better known as Siphocampylus bicolor.

Stemmatium narcissoides, Philippi, *Gartenflora*, July 15.—A Chilian, Liliaceous plant, singularly like some forms of Narcissus papyraceus.

Tillandsia Geissei, Philippi, *Gartenflora*, July 15.—A pretty species, with long, linear, entire leaves, prolonged into a twisted acumen, and erect spikes of pink flowers in two rows each, flowers subtended by a scarlet bract.

Zygopetalum crinitum, *Revue de l'Horticulture Belge*, July, 1889.

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APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, Aug. 27 — Royal Horticultural Society: Fruit and Floral Committees at Drill Hall, James Street, Westminster.

SHOWS.

WEDNESDAY, Aug. 28 — Reading. Harpenden.

THURSDAY, Aug. 29 — Perth, Royal Horticultural (three days). Ludlow.

FRIDAY, Aug. 30—Montrose.

SALES.

MONDAY, Aug. 26 — Dutch Bulbs, at Stevens' Rooms, at half-past 12 o'clock. Special Trade Sale of Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, Aug. 28 — Dutch Bulbs, at Stevens' Rooms, at half-past 12 o'clock.

THURSDAY, Aug. 29 — Special Trade Sale of Dutch Bulbs and Palm Seeds, at Protheroe & Morris' Rooms.

FRIDAY, Aug. 30 — Imported and Flowering Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Aug. 31 — Dutch Bulbs, at Stevens' Rooms, at half-past 12 o'clock.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—60°.6.

Co-operative Horticulture.

A fresh illustration of this new departure in co-operative food, fruit, and plant production was given on a large scale at the Crystal Palace on the 17th inst. The exhibition, as a whole, was a decided advance alike in quality and quantity on that held last year, as will appear by the more detailed report furnished on another page. The details will enable our readers to judge to some extent of the high character and comprehensive variety of the second great co-operative flower show. But in these more than in most matters, seeing is essential to believing; and it proved no light day's work to see all that the co-operators staged.

Without entering here into any disputed questions in relation to the place of combined or co-operative enterprise as contrasted with individual effort, or as to the *quasi* political questions of the best and readiest means of providing each industrious worker with a decent house and a suitable garden, there can be little doubt that the co-operative principle may render valuable assistance in extending the practice of horticulture among our countrymen and countrywomen.

The first and most potent influence of such shows, sustained mainly or wholly by co-operators, is to extend the taste for horticultural pursuits. What A. has done or grown under certain conditions, B. and C. may do likewise. This lesson may be taught by precept for years with but little effect; but let A., whose garden joins that of B. and C., take a first prize at the co-operative flower show, and it certainly follows that not only B. and C., but many others, will endeavour to do so likewise. The prizes are liberal, but the richest prizes lie outside of these, and in such competitions there are no blanks, hence the principle of mutual help finds most legitimate scope in the acquisition and enrichment of gardens.

Notwithstanding our recent series of Allotments Acts, there is still a great dearth of sufficient ground for these purposes. It is the legitimate business and will probably become the first concern of co-operative societies, as they become more fully awake to their highest interest, to purchase or hire land at wholesale prices, and let or sell it to their members at the smallest possible profit. Few need to be told that in no commodity is the difference in price between wholesale and retail so startling as in the matter of land. The matter needs to be carried so far that every working man may have the chance of procuring a garden as well as a decent respectable home at a reasonable rent.

Possibly in the near future the principles and power of co-operation will be so far extended as to enable a large proportion of the working-classes in the country to build their own houses, and furnish them, with their own gardens—partly laid out in blocks for common use, and partly reserved for family culture and provisions. But at present it may be wise to limit expectation and demand to what is at once just and practicable—decent houses and good gardens, at moderate rents.

Co-operation could also render most substantial assistance in the furnishing of gardens. For this purpose, experience, skill, and the best material are essential. These, like other commodities, can be purchased cheaply in the mass; dearly, or not at all, in detail. It ought to be within the power of co-operative societies to afford useful guidance and advice in all small matters. But much more should and could be done, would co-operators turn their attention more to the purchase and furnishing of land for cottage gardening and other rural industries. Those conversant with the enormous loss sustained in gardens and on farms annually, through the persistent culture of inferior varieties, will be able to appreciate the substantial gains that would be reaped by growing fruit, flowers, and vegetables of the best and most suitable kinds only. Visitors to the Crystal Palace on the 17th, who compared the Carrots, Onions, Potatos, Parsnips, Turnips, Apples, and Pears, will realise the disparity of pleasure and in profit between the best and worst of these and other products.

Co-operative enterprise, again, might be used with the greatest advantage in the enrichment of gardens. There is a striking disparity in price, and a yet greater one in quality, between manures in mass and detail. The large purchasers have the pull in prices, in the choice of markets, and in the command of the means of distribution. By purchasing and distributing for a considerable district, the cost of manures may often be reduced cent. per cent., or more. As these form the very backbone and basis of production, it is easy to see how, by lowering the price, increasing the supply, and improving the quality of manures, co-operation may increase and improve production to a most desirable extent. Co-operative culture is hardly possible, nor desirable, for in this department individual enterprise outstrips co-operative production. Unity provides augmented power for the acquisition and furnishing of gardens, but from this point the individual or family life should become supreme. Tastes and talents vary to the uttermost alike in the garden and the home; and one of the greatest advantages of either is, the fostering individual talent, and the supply of family and personal wants; hence, on the threshold of the home and the garden it might be wiser and patriotic to say to co-operative enterprise, "Thus far shalt thou come, and no further," for the history of the progress and triumphs of horticulture in the past is mostly a history of the victories of individuals over difficulties that seemed insurmountable. But, indeed, there need be no rivalry between combined and isolated efforts in all our endeavours to improve and increase the food and the pleasures of the working-classes through the extension of horticulture. Both of these forces will be needed—and the more of both, the better—to bring garden plots within reach of the working-men, and to teach them how to reap the heaviest crops of food, and the richest harvests of pleasure, out of them as the years roll by.

Phytolacca dioica (see Supplementary Sheet).—Those who only know the Poke weeds, Phytolacca decandra and icosandra, as herbaceous perennials, are always astonished to see the proportions that another species (P. dioica) attains in more genial climates. We shall not soon forget our own surprise to see the trees of the last-named species on the Promenade des Anglais at Nice, but these are dwarfs by comparison with the giants to be found in Madeira. We are indebted to the courtesy of Mr. Harcourt Powell for the photograph taken by him of one of these remarkable trees, and which shows the huge mound-like growth formed by the base of the trunk.

Vegetable Conference at Chiswick, September 24, 25, 26, 1889.—The following official notice has been sent to us for publication:—

The Royal Horticultural Society is organising a great exhibition of garden vegetables, roots, saladings, &c. It will be combined with a conference of practical cultivators, having in view to improve the products of the vegetable garden, and to promote a more extensive use of garden fruits and salads. The exhibition will consist of selected samples of all kinds of green vegetables, such as Cabbage, Cauliflower, and Spinach; Beans, Peas, Tomatos, and Aubergines, which are classed as pulse and fruits; tubers and bulbs, including Potatos, Onions, and Turnips; tap-roots, such as Beets, Carrots, and Salsify; saladings, as Endive, Lettuce, and Celery; garnishing and pickling plants; Mushrooms, and new vegetables. For the selecting of the best types of these several products, committees of experts will be appointed, who will report upon those considered the best adapted for general cultivation, both for profit and high quality. The reports will be made public for the general advantage when they have received the *imprimatur* of the Council. In the Conference, free discussion will be invited on the proposals made in the several papers to be read. These include the following subjects, to be introduced by the persons named in connection with them, viz.:—Asparagus, by Mr. Shirley Hibberd; Winter Salads, by Mr. Norman; Food of Vegetables, by Mr. J. Wright; Improvement of Peas, by Mr. T. Laxton; Improvement of Potatos, by Mr. A. Dean; Vegetable Supply throughout the Year," Mr. J. Smith, of Mentmore. On the first day, September 24,



PHYTOLACCA DIOICA IN MADEIRA.

he proceedings at Chiswick will be followed by a Gardeners' Dinner at the Cannon Street Hotel; on he second day, September 25, the reports of committees will be presented; on the third day, September 26, the larger questions of improving the products of the vegetable garden will be discussed. Mr. Harry Veitch is appointed Chairman, Mr. Shirley Hibberd, Vice-chairman. Schedules and all other particulars are obtainable at the offices of the Royal Horticultural Society, 117, Victoria Street, Westminster; or of Mr. A. F. Barron at the Society's gardens, Chiswick.

Hedychium Sadlerianum ×.—We are requested to correct an error that inadvertently found its way into our report of the Royal Horticultural Society's meeting on August 13, at p. 197, where the parentage of this hybrid is given H. Gardnerianum × coronarium, which would imply that H. Gardnerianum was the seed and H. coronarium the pollen parent; whereas the plant was obtained from the opposite cross, as stated in the *Gardeners' Chronicle*, vol. xxii., p. 375. It was raised by Mr. Lindsay, of the Royal Botanic Garden, Edinburgh, and, as the name is complimentary, it should stand as above, and not Sadleri, as labelled at the meeting.

Farming Statistics.—The following extract from the Summary of Agricultural Returns of Great Britain for 1889, issued by the Agricultural Department, will be read with interest:—

Acreage of Land in Great Britain under

		Wheat.	Barley.	Oats.	Potatos.	Hops.
		Acres.	Acres.	Acres.	Acres.	Acres.
1889 compared with 1888	Increase ...	.....	36,253	6,566	.....	.....
		.....	or 1·7 per cent.	or 0·2 per cent.	.....	.....
	Decrease ...	114,648	.....	.....	10,901	740
		or 4·5 per cent.	.....	.....	or 1·8 per cent.	or 1·3 per cent.
1889 compared with 1887	Increase ...	132,265	36,658	.....	19,607	.....
		or 5·7 per cent.	or 1·8 per cent.	.....	or 3·5 per cent.	.....
	Decrease ...	.....	.....	199,168	.....	5,952
		.....	.....	or 6·4 per cent.	.....	or 9·3 per cent.

Loofahs.—Under the name of Loofahs, the vascular tissue of the ripe fruits of Luffa ægyptiaca has for some time past been exposed for sale as flesh brushes in all chemist's shops. They have also been largely used for boot socks. The following note from our contemporary, *The Chemist and Druggist*, will have some interest as indicating a probable decline in the demand for Loofahs. During the week ending July 13, "seven bales Egyptian Loofahs, 600 first, 7000 second, and 2400 third quality, the best rather thin, and about 1 foot long, were offered in a lot, and bought in at one penny a-piece, not even a farthing being offered."

Miller's "Gardeners' Dictionary."—A writer in the *Publishers' Circular* quotes some interesting particulars—which have hitherto remained buried in a Petition dated 1759—respecting the above-named work, among others. He observes:—"The demand for such a work would, at that time, naturally be circumscribed, and it is rather surprising that the folio edition at three guineas should have been only nine years in selling, and that an abridgment in quarto should have been sold in seven years. Such, however, appears to be the case. Philip Miller was evidently a man with a due regard for posterity, because he stipulated in the original agreement that either he himself or his heirs for ever were to be paid a sum of £40 for each and every impression. This apparently did not 'cover' any new matter, as he was paid £94 for the fifty sheets added in the 1752 edition. And seven years afterwards, when the dictionary came out in sixpenny weekly numbers, he received thirty copies, and cash to make up £300. In 1768 he received £200 for additions, whilst the abridgments of 1764 and 1771 each represented £120 to him. These figures are exceedingly interesting, as indicating that, even in an age of shams and shoddy, of barren philosophy and stereotyped theology, the tastes for the higher occupations of outdoor life were becoming extremely popular. The charming essays of Addison and Steele had given a great impetus to gardening, and Miller's somewhat stupendous tome appeared just when it was most likely to sell."

National Chrysanthemum Society.—A Conference of cultivators and others interested in the Chrysanthemum will be held on September 11, in conjunction with the National Chrysanthemum Society's exhibition of early flowering Chrysanthemums, with Dahlias and Gladioli, at the Royal Aquarium. The programme, prepared by the sub-committee appointed to carry out the arrangements, includes a paper by Mr. W. Piercy, of Forest Hill, on "Early Flowering Chrysanthemums;" and a paper by Mr. J. Doughty, of Angley Park, on the "Treatment of Plants (grown for the production of exhibition blooms) a short time previous to the Shows." The chair will be taken at 4 o'clock, p.m.

Leek Cemetery.—In a recent competition for a design for the laying-out of a new cemetery for this town, Messrs. Sugden & Son were the successful candidates. We do not pretend to gauge the merits of this particular case, of which we know nothing, but we may fairly protest against the proceedings of the Commissioners, who, having premiated and accepted a particular plan, proceed to hand it over to their surveyor to carry out. This is a reflection upon the designers. Either their plan should not have been accepted, or, if accepted, it should have been left to them to carry out. As it is, an injustice is done both to the surveyor, and to Messrs. Sugden.

Botanic Garden, Ghent.—We observe, not without regret, that the authorities of the City of Ghent have decided to sell by auction several of their fine specimen of Palms, and other plants. The sale is fixed for Thursday, August 29, at 2.30 p.m.; altogether seventy-eight lots are offered for disposal, comprising numerous specimens of large size and beauty.

Haslemere Flower Show.—Lord Tennyson was present at Haslemere flower show, held at Lythe Hill, Haslemere, this being the first occasion upon which the Laureate has appeared in public since his recent severe illness. He walked with a firm step round the show, and appeared to be in good health.

Honours to Professor Riley.—The recent action of the French Government in creating Professor Charles Valentine Riley a Chevalier of the Legion of Honour, is a well-deserved compliment. Professor Riley's long researches in applied entomology, with a view of protecting American agriculture from insect injury, have often proved of value to other parts of the world; but in few instances have they had such striking and widespread practical results as in France. It was he who discovered that the Phylloxera was an American insect, and proved its identity with the French pest. His studies of the American Vines, which resist the Phylloxera, and the recommendation to use them in France, have been productive of important results, which it is difficult to estimate. So, likewise, in 1884, when a new disease, the mildew, also an importation from America, was beginning to ravage the Vines of France, he visited Montpellier, and in an address delivered at a special meeting in his honour, described and introduced a new form of spraying nozzle, since known as the Riley nozzle, which, with modifications, is now universally used by French Grape-growers in fighting the mildew. In sending Professor Riley the Insignia of the Order, M. Léopold Faye, Minister of Agriculture, wrote:—"In conferring this high distinction upon you, the French Republic has sought to show its indebtedness for the important services which you have rendered to the general agriculture of all countries, and particularly to France, by your labours and discoveries. I consider it a personal honour to have had the occasion to confirm to our Chief Magistrate the excellence and importance of your services." M. Tisserand, Director of Agriculture wrote, at the same time, to Professor Riley as follows:—"It is a small reward for your services, and would have been granted long ago if you had not declined to accept the honour. France is but paying an old debt of gratitude, and I am most happy in knowing that the importance of your work is thus recognised."

The Stormy Weather.—Our correspondents in Kent and the Home Counties, report great loss to the fruit and Hop crops, from the severe gales that have been experienced of late. The harvest operations have not only been retarded, but the crop much injured.

Tropæolum speciosum.—Mr. Noble sends us flowers of this beautiful creeper which show that it is appreciated by the tom-tits as well as other people. The birds pierce with their bills the long spurs, presumably for the sake of the honey. Whether any other purpose than sensual gratification is served is not obvious, but things are so linked together in this world that it is quite possible important ulterior results accrue from the liking of tom-tits for "sweeties."

Messrs. Peter Lawson & Son, Limited.—At the annual general meeting of the shareholders of Peter Lawson & Son (Limited), seed growers and merchants, Edinburgh, held on the 15th inst., the shareholders unanimously adopted the recommendation of the directors that a dividend of 5 per cent. per annum on the paid-up capital of the company, free from income-tax, should be paid on September 1 next, carrying forward the balance of £2132 14*s.* 9*d.* to next year's account.

John Gerard, Herbalist.—In the Record Office (*Domestic, Addenda*, vol. xxxv.), there is a grant (October 10, 1603), to Sir Robert Cecil, Lord Cecil, of Essingdon, of the keepership of Somerset House, in the Strand, with all orchards, walks, gardens, &c., reserving to John Gerard, of London, surgeon and herbalist, the garden plot formerly leased of him; as also to Bromfield, the piece of ground demised to him for erection of a tennis court.

Practical Entomology.—Professor Riley's annual report to the United States Department of Agriculture is, as usual, full of interesting matter. The present report gives full details of the natural history and mode of life of various insects injurious to crops, as well as of the means to be adopted to prevent their incursions, or palliate the results of their visitations. In the present report mention is made of the Plum-weevil, the fluted scale insect (Icerya Purchasi), and the Hop-louse, in the latter case the occurrence of the insect on the Sloe and Plum, whence it migrates to the Hop in summer, is corroborated. It is noteworthy that

Mr. Walker and Dr. Plomley, a physician at Maidstone so long ago as 1848, were the first to state this fact, which, of course, was ridiculed and ignored by those whom it most concerned. Now that the matter is proved beyond dispute, the policy of removing all Blackthorn hedges from the vicinity of Hop gardens, and of spraying with kerosene emulsion all Plum trees in the vicinity, preferably in the autumn, after Hop-picking, and of destroying all Hop-bine, becomes apparent. The report shows that the spraying is not only successful, but that it pays.

Messrs. J. Laing & Sons.—The annual outing of the *employés* of this firm—numbering eighty-one—took place on the 16th inst., the *rendezvous* being Hastings. A sense of personal interest in the men's enjoyment was imparted to the event, by the fact that Mr. J. Laing and his sons, partners in the firm, joined the party.

Canadian Experimental Farms. — These are now properly equipped with a Director, Professor Saunders; an entomologist and botanist, Mr. Fletcher; a chemist, Mr. Shutt; and a horticulturist, Mr. Hillborn. In the central experimental farm, under the direction of the last-named gentleman, 297 varieties of Apple are under trial, 174 being of Russian origin; 72 varieties of Plums, 71 varieties of Cherries, 127 varieties of Vine which require protection in winter, and the usual small fruits.

The Botanical Exchange Club. — The annual report for 1888 contains a list of the plants distributed, together with critical remarks by various experts on some of the more interesting species. It must be consolatory to the tyros to see the difference of opinion between experts over "critical" Brambles and Roses; still more satisfactory, in some sense, is it to see the modesty with which great authorities give their opinion.

Ightham Mote, of which we recently gave an illustration, has been sold by auction for £36,000. The estate consisted of about 305 acres of land.

Edinburgh Working Men's Flower Show.—This Institution held its twenty-fifth annual show on the 10th inst., in the Corn Exchange, Edinburgh. Its objects are to promote and foster a taste for window and room plants, either in pots or boxes, the culture of plants in areas and plots, such as may be found in connection with the poorer habitations in courts, alleys, and backyards; in plant cases, Fern shades, &c.—Mr. John Davidson, 5, St. Andrew Square, being the Secretary. There is no membership; all are invited to send their plants and flowers for competition, and the funds are derived from the takings at the doors—one penny per head—on show days, and voluntary subscriptions. At the last show, £50 was given away in prizes, of which there were about 350, for which 275 competitors entered. The plants exhibited were of a very varied character, both hardy and tender, and were, as a rule—taking the conditions of culture into consideration — well grown. Some unexpected recognitions met one in a ramble round the long tables, as, for instance, a fairly well-grown bit of Edelweiss among a collection of alpine plants, which came from the not very alpine district of Causeway-side. The most striking feature of the show was that formed by the Ferns, of which there were over 200, occupying a table about 40 yards long by 1 yard in width.

Seaside Plants.—M. Lesage has been investigating the influence of a marine atmosphere on the leaves of certain plants. He points out that the leaves are more succulent and thicker on the coast than inland [he is speaking especially of wild plants]. The increased substance is accompanied by a great development of palisade tissue with diminished intercellular passages, and a less proportion of chlorophyll. When subjected to experimental treatment inland, the same description of plants offer the same peculiarities. The experimental treatment consisted in the watering with definite proportions of common salt. It is not all plants, however, that are thus affected.

Food Plants.—Dr. Sturtevant estimates that 1070 species belonging to 401 genera and 92 natural orders, are cultivated in various places as food. How small this number is may be appreciated when it is further stated that mankind cultivates for food rather less than 1 per cent. of the known species of plants. The full figures are given in *Agricultural Science*, July.

Stachys affinis.—We have had occasion to figure and describe this new vegetable on more than one occasion, and to point out that the tubers are, in reality, underground shoots, as in the case of the Potato. Just as in the Potato we now and then find tubers produced on the haulm, so now, it appears, tubers have been found in the upper branches of the Stachys. In the *Botanische Zeitung* for August 2, a figure is given of these productions.

Die Clematis.—The second edition of the German translation of Messrs. Moore & Jackman's work on the Clematis has just been published by Hugo Voight, of Leipzig. The translators are J. Hartwig and F. C. Heinemann, of Erfurt. It forms one of the series of Heinemann's Garden Library.

Spanish Plants.—The fifteenth part of Dr. Willkomm's *Illustrations of the Plants of Spain and the Balearic Islands* has recently been published. It contains coloured figures of various Labiates and Composites, accompanied by a descriptive text in Latin, Spanish, and French. The figures are particularly faithful representations, and therefore far more serviceable than more artistic or ideal representations would be.

Fruit Exhibition in Ghent. — An international exhibition of fruits will be opened in the great hall of the University at Ghent on September 28 next. The exhibit will consist of collections suitable for special purposes, as for small gardens, for market purposes, for road-sides; also collections showing what should be discarded; examples of drying apparatus, methods of packing, illustrations of injurious insects, useful and mischievous birds, &c. At the Congress, the subjects of Vine-pruning, development of fruit culture, &c., will be discussed.

Ealing and District Gardeners' Mutual Improvement Society.—This body, to the number of thirty-three, paid a visit to Windsor Castle park and gardens on the 13th inst., and after spending a very pleasant day in sight-seeing, returned to Ealing in the evening.

PARIS.

THE HORTICULTURAL EXHIBITION.

August 16 *to* 21.—This exhibition was held in the grounds of the Great Exhibition, and was of considerable extent and of a high quality, especially in the collection of Palms, Orchids, &c., which were shown by several well-known Belgian nurserymen. The French exhibits were confined more to cut flowers, Gladioli being very fine, and Dahlias were numerous and of average merit; but they would be seen to much greater advantage if shown on the show-boards as in England, instead of—as was the general rule—placed on moss in a deal box; and one exhibitor had his flowers spoilt by the fixing of a small ticket to the very centre of the bloom. The chief exhibits occupied two large tents, and beyond this were numerous collections of Gourds and cut flowers (in which Asters predominated) under shading in the grounds, and in addition to that is the permanent exhibition of planted Roses, &c., and flower-beds, with the collections of plants in greenhouses.

Palms and Foliage Plants.—Competition was not good here. A successful exhibitor who won two 1st prizes was M. Delavier, of Paris, who contributed an extensive group of well-grown Palms and Cycads in various sizes, some being of very noble dimensions; a spreading Latania borbonica was very conspicuous, and Corypha australis and Areca sapida were also well represented; others being Kentia australis, Rhapis flabelliformis, Chamærops excelsa, and Phœnix canariensis. Of Cycads there were well-developed specimens of circinalis, horrida, and C. revoluta. In a prize collection of foliage plants, the same exhibitor had a variety of Dieffenbachias and Marantas, with Anthurium angustinum, A. Veitchii, and A. regale, which was a capital example.

M. Poignard, 160, Route de Chatillon, Paris, sent a number of healthy and vigorous Palms, arranged effectively; specimens of Latania borbonica and Corypha australis were the chief large plants, and others included Phœnix rupicola, Cocos Weddeliana, Kentia Balmoreana, Chamærops humilis, and a fine Areca Baueri as a centre-piece, relief being given by the bright hues of Dracænas Lindeni and terminalis.

A group not in the competition was sent by M. A. Chantin, Paris, and was one of the best in the whole show, the plants were excellently grown, clean, and fresh-looking, with a strong development of foliage; the group was also attractive on account of the number of distinct plants. Chamærops sinensis, Areca sapida, Phœnix dactylifera, and Pritchardia pacifica were the chief; and others included Rhapis flabelliformis, Thrinax argentea Sabal Blackburniana, and among Cycads, were Zamia verrucosa, Z. Lehmanni, Z. revoluta, and Dion edule.

A decorative bank of plants was arranged by M. Louis Dallé, of Vanves and Paris, the chief materials employed were large Palms of such species as Kentia Forsteriana, Livistonia Hoogendorpi, Latania borbonica, Cocos flexuosa, Liquala grandis, &c., with a few plants of Crotons, Dracænas, Nepenthes, and Adiantum in the foreground, which gave a finish to the group; and as a further relief, one or two Orchids in flower were to be seen. Cattleya Dowiana and C. Sanderiana were good, and Oncidium lanceanum was also well represented.

The 1st prize group of fifteen Palms was sent by M. Léon Halkin, Brussels. All the specimens were pictures of health, with a vigorous sturdy appearance, evidencing excellent cultivation. A specimen of Areca sapida must have been nearly 20 feet in height, with a number of fine fronds; Livistonia oliviformis was another fine object; and among others were Kentia Belmoreana, Areca Baueri, Phœnix Andersoni, P. senegalensis, Livistonia filifera, and Chamærops humilis, all with a great wealth of leafage.

A prize group of twenty Palms was sent by M. A. Lange, Paris, who also had a miscellaneous group of Palms and Cycads, which were of average quality, and moderate dimensions; Areca sapida, Sabal Adansoni, Phœnix canariensis, and Rhapis flabelliformis were good examples; and in the other lot similar plants were shown, with the addition of Zamias, Z. Lehmanni and Z. glauca being noticeable.

The chief place for a collection of Palms was won by M. A. Peeters, of Brussels, with satisfactory specimens of moderate size, in fine condition; Glaziova insignis and Phœnix canariensis were two of the best.

From the nurseries of M. Louis van Houtte, Ghent, came a number of grandly developed ornamental foliaged plants, twenty in all, with which he won the 1st prize without competition, but the award was fully deserved—the enormous leaves of Coccoloba pubescens measuring 2 to 2½ feet across; and of Anthurium Gustavi, almost as large, were very noticeable; Anthurium Veitchii, a large plant, with many leaves; Pandanus Veitchii, Anthurium Laucheanum and Areca sapida may also be named. A grand example of Artocarpus grandis won for the

same exhibitor a 1st prize for fine cultivation. This disposes of the collections of large plants, and we now come to the smaller groups. One which immediately attracts notice is a large number of well-grown Dracænas and small Palms in variety, which won for Madame O. Block, Brussels, the 1st prize offered for foliage plants as grown for market. M. L. Duval, Versailles, contributed a group of well-grown foliage plants, and won 1st for a collection of foliage plants remarkable for their strength and development with several plants of Dracæna neo-caledonica, which were remarkably strong and sturdy. Among his other plants, Æchmea fulgens was seen in flower, and Cissus discolor was well shown. MM. Jacob Makoy & Co. were awarded 1st, for recently introduced plants in the best cultivated examples, with Dieffenbachia Laucheana, Gymnogramma Pearcei robusta, Vriesia multicaulis, Pandanus Glaziovanus, and Dracophyllum pandanæfolium, which is a very pretty plant.

A collection of Dracænas, which exhibited fine cultivation, was sent by M. L. Dreps-Dom, from Laeken, Belgium; each variety was represented by a row, and the plants were of a high quality; terminalis, stricta, and amabilis were fine and richly-coloured specimens.

Balloon-trained stove plants, in very small examples, and a grand lot of Marantas, secured to M. Alexis Dallière, Ghent, two first places; the first-named collection did not contain anything of note, but the Marantas were beautiful, and fasciata, Kerchoviana, illustris, and Massangeana may be enumerated. M. Louis Van Houtte scored another success for Bertolonias and Sonerillas, and again without competition; they were very attractive, the rich greens and reds making some charming combinations; B. Comte de Kerchove, rose lines on green; and B. M. Finet, green, with white spots along the margin, were very attractive. A large collection of nice dwarf Bouvardia plants in flower, was shown by M. Auguste Gaillard, Boulogne-sur-Seine, the rich red of President Cleveland stood out well, but elegans approached it closely; President Garfield and Priory Beauty, were also fine.

Orchids.—These were fairly numerous, but depended on the few exhibitors making a display of considerable extent. The plants were healthy, well-flowered, and of moderate size. M. A. A. Peeters, Ghent, was the leading exhibitor, and took the 1st place in the competition for the best group of plants. He had a plentiful supply of Cattleyas, especially of C. gigas and C. Gaskelliana, in several forms; C. Dowiana was represented by several richly coloured plants, and Oncidium Lanceanum appeared to be a favourite; Cattleya superba splendens, richly coloured rosy-magenta; C. Leopoldi, Cœlogyne Massangeana, and Odontoglossum Harryanum, were to be seen, and a few plants of O. crispum and of Miltonia vexillaria. The same exhibitor led for twelve plants, and had Oncidium ampliatum majus, very full of flower; Epidendrum prismatocarpum, with three spikes; Vanda cœrulea, well flowered; a very richly-coloured form of Cattleya gigas; and he also had plants of Anguloa Clowesi, Oncidium dasytile, Odontoglossum hastatum, with a good spike, and the bright yellow flowers of Cattleya xanthina, were very pleasing. For the two best-flowered recently introduced plants, Cattleya guttata Leopoldi odorata with bright green sepals and petals, the lip being crimson on the median lobe, and with white side-lobes; and Miltonia vexillaria superba, deeply tinted with a dark blotch of good size, took the prize, being shown by M. Peeters. The 2nd place, for a collection of Orchids, was taken by Madame O. Block, who followed close upon M. Peeters; a well-flowered specimen of Oncidium incurvum, with two spikes of bloom; Cattleya Leopoldi, Odontoglossum Bictonenses, Cypripedium ciliolare, and C. superciliolare, Cattleya gigas, C. Dowiana, Odontoglossum hastilabium, and O. crispum, &c., were seen here. M. Vuylstéyke, Ghent, had the best thirty plants, showing a very interesting group. Cattleya gigas was a fine plant here, and Odontoglossum Schliperianum, O. Harryanum, Cypripedium superciliolare, Oncidium Weltoni, and with its curiously twisted petals, the showy O. Krameri, and Odontoglossums crispum, vexillarium, Wilckeanum, &c., were also shown beside.

Various.—As has already been stated, collections of Asters were very numerous, and it is needless to particularise about the various groups, beyond recording that the plants of MM. Forgeot & Co. were awarded the 1st position. Another strong point of the show was in the collections of Gladioli, and Messrs. Kelway & Son, Langport, Somerset, contributed a creditable lot, this firm being, as far as we observed, the only English one in the show. Gaillardias, Dahlias, and Hollyhocks, were also sent by them. Duchess of Fife, pale pink, flushed rose; Eiffel, shaded rosy-pink on white, with a white throat; and Plantagenet, scarlet, with a pale centre, were good varieties of Gladiolus. A few miscellaneous hardy herbaceous plants were also seen. M. Thibaut, Aine, Paris, also had a good collection of cut flowers in variety. Very few indeed were the Gladioli of MM. Vilmorin, Andrieux, & Co., Paris, which had been grown at Fontainebleau; the spikes were well flowered, and the individual blooms bright, and of good size; African, dark red; L'Ardoise, slaty-red; Abricote, salmon, were among the good forms. M. Torcy, Neleun, also showed creditably, and M. Lemoine, Nancy, contributed specimens of his new hybrids of the Nanceianus strain, President Carnot, commented on in our last week's number, being seen. The 1st place for new plants was taken by M. Gouchet, for Ligustrum macrophyllum, with marginal variegations on the leaves; Deutzia gracilis aurea, and Dimorphantus Mandshuricus, with leaves of pale green with a white edge. Begonias (tuberous) were best from M. Alexandre Robert, of Vesinet, and M. Crousse, Nancy, whose plants were of fair merit; and from M. Cogneau, gardener to M. Cavaroc, Bievres, came a capital collection of ornamental-foliaged Begonias—in all, about one hundred plants.

Roses were numerous from M. Leveque & Sons, Ivry, but the blooms were not up to the English form. Specimens of the new Clematis Madame Baron Viellard came from the nurseries of M. Baron Viellard, Orleans; it looked much better than it did at the last show of the Royal Horticultural Society at Westminster; and, indeed the half-dozen plants laden with flowers were very attractive—the colour is bright, and it was certainly a distinct novelty.

The largest exhibitor of Dahlias was M. Ferard, Paris, who showed 400 varieties, the blooms being of average size and quality. M. Thiebaut sent Dahlias and Zinnias; and M. Torcy and the members of the Montmorency Horticultural Society sent collections which contained some good show blooms; and an extensive lot of average merit was sent by MM. Dupanloup & Co., Paris.

Fruit and Vegetables were not very numerous, and of the last named M. M. Vilmorin, Andrieux & Co., had the largest and most comprehensive collection, showing Cabbages, Lettuce, Endives, Beans, Melons, Squashes, Potatos, &c., in great variety. Alpine Strawberries, which are favourites with the French, were sent by M. Miceat, and two Water Melons from Hungary, were conspicuous objects, one weighing 35 lbs. Tomatos were represented by heavily cropped plants from M. Farglot, who had other vegetables, too; and M. E. Solomon Thorney sent a collection of very fine Grapes, each variety being ticketed with the name of the country in which it was raised, the synonyms, &c.; these Grapes were of high quality, richly coloured, and the berries well developed. Chasselas Rose, San Antoine, Lady Downes, Black Hamburgh, and Caouch were shown, and the 1st prize was awarded. In connection with Grapes, it was interesting to note the exhibit of Mr. L. Rousseau, gr. to the Comte de Choiseul, who showed branches of vines, illustrating the early ripening of the bunches on the cut branches were ripe, while those on the branches which were not cut were still unripe. Muscat St. Laurent and Black Hamburgh had been experimented upon.

In houses outside the tents were exhibits of several nurserymen. MM. Chantrier frères, Mortefontaine, showed Nepenthes in variety, with a number of fine pitchers, Dracænas, Crotons, and various Anthuriums and Alocasias, all in excellent condition, and won 1st prize for each. M. Truffaut, Versailles, had a small house artistically decorated with Orchids and foliage plants, including Philodendron Sellowianum, Alpinia vittata, and Alocasias, &c., in variety.

The collections of MM. Vilmorin Andrieux & Co. were very extensive, and of high quality, the beds of annuals, Zinnias, Amaranths, Cockscombs, &c., were a show of great size. Begonias for bedding were very good, and some dwarf small-flowered, very floriferous varieties were to be seen; Madame Comtois, pale yellow, and Rosea multiflora, rose-red, are likely to be useful bedders. A patch of Isotoma axillaris, with its lilac-blue flowers, was very pretty; and among Asters, a cream-coloured one is rather novel.

MM. Bruneau and Jost, Bourg la Reine, had a capital collection of fruits, including Borowitsky (syn. of Duchess of Oldenberg), Calville Rouge, Cellini, Tower of Glamis Apples; and Clapp's Favourite and other well-known Pears in highly-finished samples, as well as open-air Grapes, and good Plums, all in good examples. M. Verrier sent beautiful fruits of Louise Bonne Pear, Lemon Pippin, and Borowitsky. Peaches were sent by M. Chevalier & Son, Montreuil; and M. Rothberg, Gennevilliers, sent a grand lot of Apples and Pears, Peasgood's Nonsuch and Lord Suffield Apples, Williams and Doyenné Boussonch Pears being noticeable. Plums were also good, as Kirke's, Victoria, Coe's Golden Drop, and Belvoir. The Seine and Oise Horticultural Society showed a very good lot of fruits of Doyenné Boussouch and Williams Pears, and Borwitsky Apples very fine. MM. Croux & Son sent a collection, in which the Kelsey or Japanese Plum excited much attention. Clapp's Favourite, Jargonelle, and Souvenir du Congrès Pears, with Emperor Alexander and Gravenstein Apples were very fine specimens.

A collection of fruiting Pines was sent by M. Gremont Jeune Sarcelles—thirty in all—Smooth Cayenne and Charlotte Rothschild being the varieties. A 1st prize was given.

Horticultural and Botanical Notes at the Exhibition.

In the buildings of the various South American States, there are many complete and interesting illustrations of the various useful products of the Palms. Thus in Brazil are shown those of the Carnauba Palm, Copernicia cerifera, the terminal bud of which furnishes a delicate and substantial food in a kind of Cabbage; a powder on the leaves furnishes a species of wax, which is largely consumed locally, and exported to Europe to the value of about £200,000 annually. The leaves furnish a useful fibre for cordage, hammocks, &c. Hats, mats, baskets, and brooms are also made of it. It might be used as a paper material. The pulp of the fruit has a good flavour, and the nut roasted and ground has been used as a substitute for Coffee. But in the great Coffee-producing country of the world, it is not required there. From the trunk a substance resembling Maize-meal is obtained, and a sap which is converted into wine and vinegar. The wood is useful for cabinet and joiner's work, being hard, and susceptible of a fine polish.

The Attalea genus, and other species from Brazil, also furnish the valuable brush fibre known as Piassaba, or Bast.

The leaves of the Palmettos, various species of Sabal, are much used in Mexico and Central America for making the sombreros or large Cabbage-tree hats, for thatching dwellings, for baskets, mats, and cordage, and, when dried, are put up into bales and sold for paper stock.

In the Chili pavilion all the products of the Palma de Ocoa (Jubea spectabilis) are shown, in large sections of the trunk, the spathes, cordage, mats, hats, baskets, coarse paper, and honey in tins.

The downy silk cottons of the pods or seed-vessels of Bombon are shown in various sections, in Cambodia, in the Dutch Eastern possessions, and other quarters. In Holland there is a large importation of this silky down under the name of Kapok, it being largely used there for stuffing beds, pillows, cushions, coverlets, &c. In England it has been used under the name of Ceiba down, to replace the down of the Eider duck, for dressing-gowns and coverlets. Various unsuccessful attempts have been made to utilise this and products of the Asclepiads by spinning it into cloth.

The Botanical and Horticultural Congresses.—On Thursday, as President of the Botanical Society of France, M. Henry de Vilmorin entertained about 130 of the members of the Congress and foreign visitors and Commissioners of the Exhibition at dinner at his Château, Verrieres-le-Buisson. As M. de Vilmorin is so eminent a botanist and an admirable linguist, foreigners find themselves quite at home in his family circle and grounds, where arboricultural, floricultural, horticultural, and agricultural specimens of the choicest kinds abound; hence the *fête* was very enjoyable. The President of the Congress is Dr. Fischer von Waldheim, of Warsaw; Dr. Marcus Hartog, of Cork, the Vice-President.

In June last the French and foreign agriculturists were also invited to visit M. de Vilmorin's experimental farm and grounds. The estate of Verrieres, which has been in the hands of the Vilmorin family since 1815, has within the last forty years been the depository of all the old and rare plants, and the trial-ground for testing new kinds and species. The experimental cultures carried on here amount to about 25,000 parcels of different kinds a year for the production of choice seeds for multiplication, for the trial of seeds intended for extensive culture, and for the preservation of special type collections, serving for comparison and study of ancient and recent plants.

On Monday, the Horticultural Congress was opened, under the presidency of Mr. Hardy, Vice-President of the National Horticultural Society of France. On Tuesday evening the annual *soirée* or *conversazione* of the Botanical Society of France, was held at its rooms, when there was a full and fashionable gathering under the genial presidency of M. Henry de Vilmorin and Madame de Vilmorin.

The Apiary.

TAKE CARE OF THE WAX.

This has been referred to in previous years, but wax is such a useful article, and always fetches such a good price, that reference will again be made to it, with improved methods of obtaining it. In the modern system of bee-keeping there is less waste of combs, and as they are utilised again from season to season, sometimes lasting five or six years, the modern beekeeper finds he has less comb to melt down than under the old-fashioned system; but of course there will be some, and every scrap ought to be saved; besides, if it is thrown about the garden, it is not only useless and untidy, but attracts the wax-moth. But there are still numberless disciples of the skep, and we always keep one or two in our apiary. These will contain combs which must be got out and broken in order to get the honey, and so there will continue to be a supply. The old-fashioned way of extracting the wax was by boiling it in a bag in the copper; the new-fashioned way is by steaming the combs in a machine somewhat after the manner of cooking Potatos in a steamer. Both of these systems have their advantages and disadvantages. I have tried both, and find the latter too tedious. The former is not to be despised, but a combination of the two seems to be best. There is a machine which consists of an outer tin case, and an inner one of perforated zinc. The inner vessel is used for the combs, and the space between that and the outer vessel is filled with water. There is a tap communicating with the outside vessel. When thus filled with combs and water, the utensil is placed on a fire or over a gas or oil stove. All the wax will as usual find its way to the top because it is lighter than water, and when cool a nice cake of wax will be found on the top. A machine of this sort has a great many advantages. First, you are quite independent of the copper, and the cook, which is a consideration to some; besides this, such an article can be used for a great many purposes. It can be used as an uncapping can, and if combs are accidentally broken in extracting, they can also be put in, and the honey drained out. It can also be used to make syrup, mead, hydromel, and many other purposes. If the bee-keeper once uses such an apparatus, he would not willingly be without it. *Bee.*

POT WASHING MACHINE.

The accompanying illustration (fig. 31), which we have copied from the pages of the *American Florist*, of July 1, 1889, shows a simple machine which Messrs. Alburger & Bro., Philadelphia, use to great advantage in cleaning pots. In every greenhouse establishment considerable quantities of pots are used several times, and all know that such should be washed and cleaned before being used over again. Washing and cleaning by hand is the usual method, and a slow one it is, but by the use of this simple affair it can be done with great rapidity.

The brushes on the end of the shaft are made of a shape to fit the inside of the pot, and several sizes are used, though one brush does the work for a number of sizes of pots. The shaft of the machine

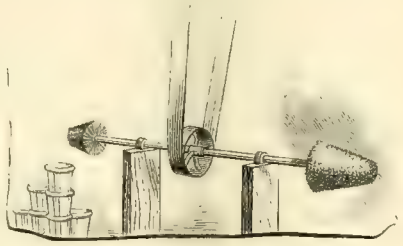


Fig. 31.—Pot washing machine.

shown is revolved by steam power, but one can be easily arranged to be worked by hand power, and even in this way two boys—one to hold the pots and another to supply the power—can accomplish as much work as four or five working by hand.

Certainly such a machine will pay for itself in a very short time where a large quantity of pots are to be cleaned annually, as the expense of contruction is comparatively slight. The wheel which supplies the power should of course be considerably larger than the one on the shaft, thus causing the shaft to revolve with sufficient rapidity to be effective and do quick work.

The Hardy Fruit Garden.

Peaches and Nectarines.—By this time the earlier varieties of Peaches will have been gathered, and the trees may be freely pruned, leaving no more wood than is necessary to fill up the tree and for fruiting next year. The young wood should be laid in thinly, and as evenly as may be, cutting the shoots which have borne fruit clean away at the base, if not required for any particular purpose, while the young non-fruiting shoot to be removed should be cut back to a couple of buds, these latter not unfrequently bearing fruit the next year. Syringe the trees well to keep down red-spider, and deluge the roots with water if required, so that every encouragement may be given to them. Syringe the trees of all the later kinds daily, if the weather be fine and warm, and continue it until the fruit show signs of ripening. By keeping the foliage healthy and clean of insect pests, the fruit becomes considerably larger, and of much better flavour. Feed the trees, if heavily cropped, with weak guano-water, or some other approved manure, and remove to aside all the foliage which may be shading the fruit.

Pears.—The removal of all soft growth, if this has not been already done, will require attention. Some of the Williams' Bon Chrétiens may now be gathered and placed in the fruit-room to fully ripen, taking the forwardest at various times from all parts of the trees. Beurré Giffard and the good old Jargonelle are now ripe, and to prolong their season they should be treated like the Williams'. Petite Marguerite—now ripe—is cropping well here this year; the fruits are rather small, but rich and sweet. *H. Markham, Mereworth Castle, Maidstone.*

Home Correspondence.

Sciadopitys verticillata.—Where does the Sciadopitys flourish in this country?—and how does it fare in our uncertain climate? That it is rare I am assured, for I have only seen this quaint and remarkable Conifer a few times in England, in spite of my having often inspected most of the more important gardens. Before the Vandals entered those ancient nursery gardens at Exeter—in that once famous Pinetum there stood a symmetrical specimen fully 10 feet in height—and may still exist. From my boyhood I have always had regard for this specimen, because it was one of the many pets that my old master, the late Mr. Robert Pince, fostered and loved, and we used to call it "the Umbrella Pine." So extremely slow was its growth, that the tree seemed, in general appearance, much the same all the years I knew it. I remember seeing another, but smaller, specimen at the late Sir John Walrond's seat at Bradfield, Cullompton, and somewhere in that distant part of West Cornwall—the stony district of the Lizard—I met with the finest of all. It is some years ago now, but I believe that it was in the highly ornamental grounds of Scorrier House, where also is one of the richest and finest collections of Coniferæ in those parts. *W. Napper.*

Town trees.—Two years ago a double line of standard trees of the Oriental Plane (Platanus orientalis) was planted in one of the widest streets in this town, and being carefully planted in suitable soil they have made considerable progress; one tree, however, which grew very freely last summer was, early in the present season, found to be dead. The stem of each tree is protected by a substantial iron guard, and prevented from coming into contact with the iron guard by means of strong, soft string. But in the case of the tree which has failed, it was found to have been secured by iron wire, which was prevented from coming into actual contact with the stem by means of a band of hay, the fastening being about 5 feet above the ground. It is noticed that that portion of the tree above the wire fastening is quite dead, while immediately below it the stem is alive, and showing indications of growth. It is thought possible that the destruction of the upper portion of this tree may have been effected by lightning, the wire having acted as a conductor to the same. Will you kindly say if you think this likely. [Possibly. Ed.] *P. G., Bury St. Edmunds.*

The trees on the Thames Embankment.—I observe in your issue of the 10th inst. some reference to the method pursued in dealing with the Plane trees upon the Victoria Embankment roadway; I would therefore just mention what has actually been done in the matter. On December 1, 1886, I prepared and laid a report before the Parks, &c., Committee of the late Metropolitan Board of Works, to the effect that each alternate tree ought to be removed within a few years (I believe I said eight or ten), and I asked that the matter should be at once decided upon. A plan was accordingly prepared showing every tree along the road, and I marked upon it those which I considered should be removed, selecting as far as possible the healthiest specimens to remain. In some cases, where there were scrubby trees growing upon the sites where others were required, I have had them replaced by vigorous trees from Finsbury and Southwark Parks. The branches of those trees decided upon to be ultimately removed have since been kept cut in, so as to allow the permanent ones to spread unchecked, and when the time for removal arrives, I have no doubt that the arrangement decided in December, 1886, will be carried out. *J. Ed. Cochrane, Superintendent, Finsbury Park.*

PEACHES AND OTHER FRUITS AT KENWARD.—At Lady Fletcher's place, Kenward, near Yalding, Kent, are to be seen at the present time unusually fine crops of Peaches, Pears, Green Gages, and Figs, and on one tree of the Royal George Peach—a variety somewhat subject to mildew in some places, I counted upwards of 200 fine fruits. Bellegarde, Noblesse, and many of the best varieties, are all bearing heavy crops, and I was told that such has been the case for several years in succession. Mr. R. Smith, whose name is well known to growers of fruit for exhibition, and who is especially strong in Pears, is no believer in coddling the trees, and the only protection he affords them is that of an 11-inch coping-board, no front protection whatever being employed, Mr. Smith believing that so much protection does more harm than good. These boards are fixed to brackets driven into the face of the wall, and are put up in the months of November and December, the object being to keep the buds dry as far as possible, and by which means he maintains they are retarded. This slight and inexpensive protection is regarded as being of great importance in Peach-growing on open walls. One other feature I observed was, that notwithstanding the trees were a picture of health, being clean of aphis, free of red spider, and the leaves of a deep green colour, the wood was somewhat smaller than I usually care to have it; but after seeing the beautiful crops of fruit, I am convinced that this is the proper kind of wood. The growth intended to bear fruit next year is very thinly and evenly trained, and not a blank space could be seen. Figs, too, have their shoots very thinly trained likewise, and ripen off large fruits. Pear trees of the best varieties were in some instances bearing clean promising-looking fruit; Marie Louise being conspicuous among the varieties which are carrying heavy crops. I would just mention that glass-houses are not many or large; and that in every part of the gardens, neatness and cleanliness prevail. *H. M. M.*

LISIANTHUS RUSSELLIANUS.—This splendid plant ought to be grown more extensively. I enclose you some sprays cut from two 6-inch pots; their gorgeous violet-coloured flowers are very attractive, and last for weeks. It grows freely with us from seed; we have also tried it from cuttings, but prefer the former method. Your correspondent, "F. R.," drew your readers' attention to this plant in a former number of the *Gardeners' Chronicle*. I should add that it is grown here in an intermediate-house, in a mixture of light turfy loam, leaf-mould, and charcoal. *H. R. H., Ashburnham Gardens.* [Fine specimens. For figure, see *Gard. Chron., Aug.* 18, 1887. Ed.]

THE CHISWICK VEGETABLE CONFERENCE.—As it is obvious that this gathering, should be specially popular with provincial vegetable growers, permit me to suggest to those numerous persons who go out from London and its neighbourhood to judge at provincial flower shows, they should make special reference to the Conference at every fitting opportunity, especially when in the society of gardeners. If these gentlemen would arm themselves with a few of the schedules, which can readily be obtained from Mr. Barron, they might get many copies into districts which might otherwise remain ignorant of what is to take place at Chiswick. The seed trade, which should exhibit exceeding interest in the Conference, might also place many copies in the hands of its best gardener customers; but especially among those having good reputations as vegetable growers. Perhaps it would be wisest were each firm to send a list of selected names to Mr. Barron, who could then supply to those gardeners not previously in receipt of a schedule. The market garden element also needs stirring. So far that seems to be sadly indifferent to what is being done. I fear too many of this class think that they have nothing to learn in the matter of vegetable culture. If that be so, then in sending of their best samples to the Conference, they may do something to help educate gardeners, all of whom may not be so certain that they excel. It would, indeed, be odd that a Conference held in the midst of the London market vegetable trade, should lack the best products of those market gardens. *A. Dean.*

GLAZED POTS FOR ORCHIDS.—In answer to "Hortus'" enquiry as to the value of glazed pots for Orchids, I may say that my opinion is unfavourable to their use. I have closely watched their effect on plants for the past six years, and I find that for the first year little difference can be noticed in the growth of the plants in the glazed pot from those in the ordinary pot, but in the second year and onward a change is easily noticed, the foliage begins to loose its deep green hue, and the points of the roots die off wherever they come in contact with the sides of the pot, which is, no doubt, the cause of yellow leaves. The only good character I can give them is the amount of labour saved in cleaning, as little or no washing is required; but, as the well-being of the plants is of the most importance, I would advise "Hortus" to keep to the well tried porous flower-pot, and he will have the pleasure of seeing his plants root and grow not only as well but much better than ever he will do in glazed pots. *R. C. Fraser.*

THE POTATO DISEASE.—A striking illustration of the action of wind and rain in promoting the spread of the Peronospora spores in the fungus has been manifested here in several cases. I find where Potato breadths are sheltered from the rain and wind by trees, such as rows of Damsons or Apples, or even by individual trees of diverse nature, that the tops remain fresh and green, whilst just beyond the radius of the tree shelters the leaves on the Potato plant have absolutely disappeared. The fact seems to me to illustrate beyond all doubt the now generally received conclusion, that the spores are borne on the wind to the Potato breadths, and by the rain moistened and rendered fertile for evil. Whence come the spores still seems to remain a mystery, for if emanating from the soil; why are not tops protected partially by trees—for it is but partially after all, as the heavy rains have thoroughly wetted the plants within the tree line often—just as much injured by the spores as are those plants beyond the line? Were this curious matter seen in one case only, I should not have noticed it as offering conclusive proof; but when I meet with the illustration in several instances, then I think the case is proved. I mentioned recently that for special reasons I had not earthed up any Potatos this year. I will not aver as a result, but it is a fact, that although the tops of the early kinds have almost entirely disappeared under the action of the fungus, yet wherever the crop has been lifted, I have so far found no disease worthy of mention. The tubers came out far drier than they did last year when earthed, and there is also a wonderfully good crop. Some of my neighbours who manure freely and have lighter soil than mine, found disease rampant in the tubers of Beauty of Hebron. I give little or no fresh manure to Potatos, and so far have wonderfully good crops. With further fine weather we shall have a big general crop of tubers throughout the country. *A. D.*

WASPS.—As an interesting matter of natural history, I may remark that we have not been troubled with any common wasps' nests this season, but within a very small radius we have found eight fully developed nests of the tree wasp "Vespa Britannica," suspended to branches of fine Rhodendrons, one Laurel, one Thuja gigantea and one Hawthorn. They are globular in shape, about six inches in diameter, and wonderfully formed. I enclose a portion of one. *W. H. Rogers, Red Lodge Nursery, Southampton.*

SHOOTS OF SPRUCES NIBBLED OFF BY BIRDS.—Some Spruce trees in my garden have for some weeks had the ground beneath them covered with twigs, such as I enclose. I believe they are pulled off by greenfinches, but for what purpose I should like to know. All the twigs seem broken in a node caused by some insect. Are the birds likely to be searching for insects? *C. W. D.* [The twigs are, some of them, tunnelled by the grub of some beetle, others are affected with Chermes laricis. No doubt the birds were attracted by such tempting morsels. Ed.]

TRADE NOTICE.

It is announced that the business of Messrs. Shuttleworth, Carder & Co., Orchid Importers, of Park Road, Clapham, has been purchased by Mr. J. Charlesworth, of Heaton, Bradford; but Mr. Shuttleworth will remain in the firm in partnership with Mr. Charlesworth, who has made great headway in the Orchid trade in the North. The change should give fresh impetus to a firm already of good repute; and the tried abilities of Mr. Shuttleworth will be of great service on the more extensive scale on which the two establishments will have to be worked together.

SOCIETIES.

ROYAL HORTICULTURAL.

A meeting of the Fruit and Vegetable Committee was held at Chiswick on Tuesday last, the 20th inst. Present: Dr. Hogg, F.L.S., in the chair. Messrs. J. Wright, J. Burnett, J. Hudson, G. Wythes, G. Cummins, and W. Warren. The several varieties of Potatos on trial this year in the Royal Horticultural Society's Gardens, were examined on Tuesday last by members of the Fruit and Vegetable Committee, and the following varieties were selected as productive and good in appearance. The heavy rains of the night previous to lifting, affected the whole of them prejudicially, and though several were cooked, it was considered advisable to submit them to a further trial for satisfactorily determining their quality.

Vegetarian (Dean).—Oval, white, free cropper, fine sample.

The Canon (Dean).—White, round, medium size, splendid crop.

Edgcote Early.—Kidney, medium size, good shape and good crop.

The Governor (Dean). –Kidney, white, large, even, and good crop.

Crown Jewel (Fletcher).—White, round, evenly shaped, medium-sized tubers, great crop.

Bedfont Purple (Dean).—Fine uniform tubers, and a good crop.

Irishman (Kane).—White, round tubers, large with somewhat deep eyes; very heavy crop.

Débutante (Ross).—Bright crimson, round, uniform; good crop, rather small tubers.

Early Victor (Oakshott & Millard).—Large, white, flattish oval, even sized tubers, good crop.

Satisfaction (Oakshott & Millard).—White, round, heavy crop of good-sized tubers.

Tacoma (Bliss).—Pink, large, roundish, a heavy crop.

Ellington's Prolific.—White, round, medium size, even; very heavy crop.

Mr. C. Ross, Welford Park Gardens, Newbury, sent three varieties of Melons:—1, Standard, a scarlet-fleshed variety; 2, Colonel Greenfell, green-fleshed; 3, Duchess of Fife, green-fleshed. They were all somewhat deficient in flavour, and passed. Mr. Prall, Matfield Nurseries, Brenchley, sent a seedling Apple greatly resembling Beauty of Bath—passed. The committee examined the Potatos growing in the Gardens, of which there were 108 samples. Some thirty seedling varieties received from Mr. Bliss, New York, were examined, proving remarkable for their extraordinary cropping qualities and uniform great size, but were considered somewhat rough for general culture.

HASTINGS.

This Society held its annual show on Wednesday the 14th inst. Plants and vegetables were unusually good, and fruit was of average quality. The committee have been very unfortunate in regard to weather, as in the last three years the show days have proved most unfavourable. This was the more to be regretted this year, as the Alexandra Park, where the show was held, was to have been lighted up after dark, and this part of the arrangements had to be abandoned, with the result that the committee have to face a rather heavy loss. I selected a few of the principal classes wherein Mr. Crossman, a rising young exhibitor, came off with high honours, closely followed by Mr. Portnell, who is a much older hand.

Eight varieties of stove and greenhouse plants in bloom.—1st, F. Crossman, gr. to Miss Brisco, Coghurst Hall; 2nd, T. Portnell, gr. to Sir A. Lamb, Beauport Park. It was thought by some persons that the 1st and 2nd prizes ought to have been reversed, but, taken as a whole, they were a very creditable lot.

Six varieties.—1st, J. Tabor, gr. to Dr. Wilkey, Ashford.

Ornamental plants, eight, in varieties.—1st, E. C. Gilbert, nurseryman, Hastings. The 1st prize plants were excellent.

Eight exotic Ferns.—1st, E. C. Gilbert.

Six varieties of Fuchsias.—1st, T. Portnell. Nice plants in all cases, of good shape, compact, and well flowered.

Six double Pelargoniums.—1st, F. Crossman. These were fine plants, of which it may be noted that those which took the 1st prize were trained, even to the flower-spikes—a most unnatural method.

Six single Pelargoniums.—Messrs. Portnell and Lavender took the 1st and 2nd prizes in the order named.

Tuberous Begonias, four varieties, in flower.—1st, A. Gadd. Fine, strong plants, which found many admirers.

Collection of eight dishes of fruit. — 1st, T. Portnell.

Grapes: Black Hamburgh, three bunches.—1st, F. Crossman. Any other kind:—1st, F. Crossman. Three bunches of White Grapes.—1st, W. Allen.

In the two classes for Peaches (6), and Nectarines (6), Mr. Duncan showed beautiful fruit fit for any exhibition table, and other exhibits were of fair quality.

Collection of Vegetables, consisting of nine sorts. —1st, Mr. Crossman, who was quite unapproached, with a fine even lot.

Messrs. Sutton & Sons prizes for six varieties of vegetables, were secured by Messrs. Lavender, Sutton, and T. Apps, in the order of their names.

Potatos were well shown by Messrs. Lavender, Helman, Gilmour, and Bannister, and the competition was severe, a very large quantity of tubers being staged, much of which was good in quality.

The cottagers of the town and district showed with great credit to themselves in the classes specially set apart for them. *H. R. Holmes.*

TAUNTON DEANE HORTICULTURAL.

August 15.—By general consent this was acknowledged to be one of the best exhibitions this Society has ever held. Not only were the exhibits generally of a high order of merit, but they were so numerous that the tents proved inadequate to contain them, and they were in many cases inconveniently crowded. There is urgent need at Taunton for better tents, the present ones are old and dark and not wide enough; and they are pitched a little too near the shade of trees. The whole method of staging sadly needs revision. The large plants especially might be grouped to far greater advantage by placing them upon the ground, and getting rid of a large quantity of rough and unnecessary staging. Such fine plants as are produced at Taunton, deserve to be so displayed so that their full beauty can be set forth, but this is a long way from being the case under the present system, and it is a defect in several of the leading exhibitions held in the West of England. But it is very difficult to lead people away from the old tracks, and so we can preach without any appreciable advantage being derived from it.

Stove and Greenhouse Plants are always a great feature at Taunton, and they were especially fine on this occasion. Mr. James Cypher, of Cheltenham, was in strong force, and placed 1st with admirable examples of the following twelve in flower: Clerodendron Balfourianum, Stephanotis floribunda, Bougainvillea glabra, very fine. A very fine piece of Statice profusa, Phænocoma prolifera Barnesi, a veritable giant; Allamanda nobilis, A. grandiflora, Ixora Fraseri, Erica ampullacea Barnesii, E. austrimana, E. tricolor grandiflora, and E. Irbyana. 2nd, Mr. G. Lock, gr. to B. W. Cleave, Esq., Cudston, Devon, whose leading plants were Eucharis amazonica, Ixora Duffii, Allamanda nobilis, Bougainvillea glabra, Erica Thompsonii, &c.

Mr. Cypher also had the best six, staging excellent plants of Clerodendron Balfourianum, Ixora amabilis, Statice Butcherii, fine in colour; and Erica Irbyana, E. I. austiniana, and E. oblata purpurea; 2nd, Mr. Lock, with Lapageria rosea, Impatiens Hawkeri, Allamanda Hendersoni, Clerodendron Balfourianum, Bougainvillea glabra, and Erica ampullacea.

In the class for twelve specimens there was a keen competition, Mr. Lock being placed 1st with Eucharis amazonica, Ixora coccinea, Dipladenia amabilis, Erica æmula, Stephanotis floribunda, Croton Warrenii, C. princeps, a C. Chelsoni, all beautifully coloured; and grand Kentia Fosteriana, &c.; 2nd, Mr. W. Rowlands, gr. to W. Brock, Esq., Crediton, a new exhibitor, who is likely to make a good reputation as a successful cultivator, who had as his leading plants excellent examples of Anthurium Andreanum, Bougainvillea glabra, Croton Evansianus, C. D'Israeli, and Allamanda Hendersonii.

Mr. C. Lucas, gr. to J. Marshall, Esq., Taunton, had the best six specimens, staging in good condition Allamanda nobilis, Nepenthes Dominiana, with twenty pitchers, a very fine piece indeed; Clerodendron Balfourianum, Stephanotis floribunda, Ixora Williamsii, and Erica Irbyana; 2nd, Mr. G. Lock, his leading plants being Croton Prince of Wales, C. angustifolius, Allamanda Hendersonii, and Erica Aitoniensis.

Mr. E. Wills had the best four plants in flower, having Erica oblata purpurea, Stephanotis floribunda, Clerodendron Balfourianum, and Allamanda nobilis; 2nd, Mr. H. Jones, gr. to J. C. Doherty, Esq., Taunton, his best plants being Bougainvillea glabra, Eucharis amazonica, and Allamanda Hendersonii.

Mr. Lucas had the best specimen stove plant in Clerodendron Balfourianum; Mr. Lock being 2nd with Dipladenia profusa.

The best specimen greenhouse plant, a finely grown and bloomed double Begonia, from Mr. H. Tomlin, Taunton; Mr. S. Tottle, Taunton, coming 2nd with Plumbago capensis.

Miscellaneous Flowering Plants.—Bedding Pelargoniums, double, single, variegated, and tricolor, are always good features at Taunton. The principal prize-winners were Messrs. Penny, Godding, and Hillard. Fuchsias were represented by four good specimens from Mr. H. Godding, Lye's Charming being particularly noticeable. The best light varieties were Mrs. Marshall and Rose of Castille. Cockscombs, well grown in this part of the country, were highly finished. Japan Lilies in pots were represented by good specimens of L. speciosum in variety, and L. auratum. Achimenes were a very fine feature; Mr. C. Lucas, gr. to J. Marshall, Esq., Taunton, staged four of the best specimens we have ever seen; they consisted of Margaretta, Perfection, Mauve Queen, and Edmond Bossier. The 2nd prize went to Mr. W. G. Marshall, with slightly inferior plants of Margaretta, Dazzle, Mauve Queen, and Ambrose Verschaffelt. Mr. Thomas, gr. to W. G. Marshall, Esq., was 1st with some very good Gloxinias indeed, fine varieties, admirably grown and bloomed.

Begonias, Tuberous-rooted.—The number of admirably-grown plants of high-class quality shown on this occasion serves to illustrate how rapidly the Begonia has taken hold of the popular taste as an exhibition plant.

Orchids.—There was but one group of four plants, and that came from Mr. Cypher, the specimens small, but well bloomed; they consisted of Saccolabium Blumei, Cypripedium Stonei, C. caudatum, and Cattleya crispa.

Foliaged Plants.—Some very fine collections of these were staged. Mr. J. Cypher was 1st with a superb eight, having a huge Latania borbonica, Kentia Fosteriana, Cordyline indivisa, Crotons Queen Victoria, angustifolius, and Sunset; Cycas circinalis, and C. revoluta. Mr. Lock was an excellent 2nd, having fine specimens of Cycas circinalis, Latania borbonica, Thrinax elegans, Crotons Johannis, Disraeli, and Williamsii, &c. Mr. Lock had the best six, staging Kentia Belmoreana, Encephalartos villosus, Alocasia Sanderiana, A. macrorhiza variegata, and Crotons volutus and Queen Victoria. 2nd, Mr. E. Wills, with Cycas circinalis, C. revoluta, Kentia Belmoreana, and Crotons Queen Victoria, Johannis, and Disraeli.

Exotic Ferns.—Mr. J. Lloyd, gr. to W. V. Streckey, Esq., Hill House, Langport, had the best eight, good plants, but not calling for special remark. Mr. Rowlands had the best six specimens, Mr. H. Jones, Bath, being 2nd.

Selaginellas were large and well grown. Mr. E. Wills had the best four specimens, Mr. F. W. Newton coming 2nd. Single plants of exotic Ferns and Lycopods were also shown.

Hardy Ferns.—These were very meritorious also. The best eight came from Mr. F. W. Newton, a good 2nd collection being staged by Mr. E. Wills.

Cut Flowers: Roses.—Of these a remarkably good display for so late in the season. The Oxford growers generally show well in August, and on this occasion Mr. J. Mattock, of the Headington Nursery, Oxford, was 1st, with forty-eight blooms, having capital examples of Duchess of Bedford, Madame N. Neruda, Charles Lefebvre, A. K. Williams, Devienne Laing, Marie Baumann, Marie Rady, Ulrich Brunner, Annie Wood, Xavier Olibo, Harrison Weir, Horace Vernet, Maurice Bernardin, Mrs. J. Laing, and the following Tea-scented varieties:—Comtesse de Parc, Catherine Mermet, Amazone, François Kruger, Comtesse de Nadaillac, and Marie van Houtte; Messrs. R. Mack & Sons, Hebden Bridge, were 2nd. Mr. J. Mattock also had the best twenty-four trebles. In the amateurs' division, Dr. Budd had the best twenty-four and twelve varieties; Mr. Thomas Hobbs, Lower Easton, Bristol, being 2nd in both classes. Mr. H. Fowler had the best twelve Tea-scented varieties—a very pretty stand.

Dahlias.—These were shown in good form. Mr. J. Nation had the best twelve show varieties, staging William Rawlings, Buttercup, Colonist, Imperial, Henry Walton, Mrs. Gladstone, Artist, Mr. G. Harris, and Mrs. Harris. In the amateurs' class, Mr. T. Hobbs had a fine twelve, his leading blooms being The Ameer, Mrs. W. Slack, H. W. Wood, Mrs. Saunders, J. N. Keynes, Mrs. Mackenzie, Ovid, J. T. West, R. T. Rawlings, Reporter, and King of Purples. The best twelve fancy Dahlias came from Mr. J. R. Walters, Bath, who had good blooms of Mr. Saville, A. F. Barron, Gaiety, Rev. J. B. M. Camm, Professor Fawcett, Wizard, and James McIntosh. Single Dahlias were shown in threes by Mr. A. R. Walters, Bath; and others, but they were badly staged.

Hollyhocks were shown, in twenty-fours and twelves, better than they are often seen, the 1st prize in both classes going to Mr. W. Smith, Bristol.

Phloxes were represented by fine spikes, Mr. C. Lucas having the best twelve. German Asters were clean, bright, and symmetrical; a very good stand of twenty-four was shown by Mr. W. J. Jones, Bath; and he was also 1st with twelve blooms. French Asters were scarcely at their best, though some good blooms were shown. Mr. S. Gunter, Cannington, was 1st, with twenty-four, and also with twelve blooms. Gladioli, in stands of twenty-four and six spikes, were a good feature; Mr. H. Godding was 1st, with the larger number, and Mr. J. Marshall with the smaller. Verbenas were numerous, but wanting in quality; and Carnations and Picotees passable for the late season of the year.

Bunches of cut flowers, and also of hardy varieties, were good features; Mr. J. Marshall was 1st in both classes. Bunches of blooms of bedding Pelargoniums were a very fine feature; Mr. C. Cooper, gr. to C. L. Cottard, Esq., was 1st with twenty-four, and 2nd with twelve.

Some special prizes were offered by Mr. R. H. Poynter for Somerset-raised Gladioli, Mr. J. Marshall being 1st.

Table Decorations, Bouquets, &c.—A large tent was set apart for these, and the competition in the various classes appeared to excite a great deal of interest. The best arranged table with flowers and fruit for ten persons came from Mr. Lock, and was arranged with excellent taste. Mrs. M. Hooking, who generally takes a good position in competitions of this character being 2nd. The latter was placed 1st with a single piece for the table; but Mr. Cypher, who was 2nd, should have had the 1st prize: the award in this class was generally condemned. A very handsome hand bouquet showed by Mr. A. C. Dyer gained the 1st prize. Stands of wild flowers were charming. The best came from Mrs. Meaking. There were two or three classes for bouquets of wild flowers, and some very good ones were staged. The President offered special prizes for a selection of hardy flowers and foliaged, arranged in a sloping wooden tray; but the exhibits were far below the level of the handsome prizes offered. In the cottagers' department there were bouquets of wild flowers, and arrangements in hedgerow Ferns that formed a leading feature.

Fruit.—A great deal of fruit of high quality was staged, and it made a great display. There were three collections of ten dishes. Mr. W. Iggulden, gr. to the Earl of Cork, Marston, Frome, was 1st, with Black Hamburgh and White Muscat Grapes, smooth Cayenne Pine, very fine Bellegarde Peaches, Lord Napier Nectarine, Moor Park Apricot, Governor Wood Cherry, Hero of Lockinge Melon, Brown Turkey Figs, and Oullin's Golden Gage Plum. Mr. R. Nicholson, gr. to Earl Fortescue, Castle Hill, South Molton, was 2nd, having Black Hamburgh and Foster's Seedling Grapes, Crawford's Early Peach, Stanwick Elruge Nectarine, Apricots, Figs, a dish of a fine looking late Cherry, named Castle Hill Seedling, &c. Mr. Daffurn, gr. to J. Cox, Esq., had the best four dishes, staging Madresfield Court Grapes, Elruge Nectarines, Noblesse Peach, and Hero of Lockinge Melon. Pine-apples were represented by some good Smooth Cayennes. Mr. Nicholson was 1st.

Black Hamburgh Grapes were good, and the three bunches with which Mr. Iggulden won the 1st prize were finely finished. Other Black were Madresfield Court, Mr. Daffurn being 1st. Some fairly good White Muscats were staged; Mr. E. J. Barnes, gr. to F. C. Daniel, Esq., came in 1st.

The best three bunches any other white, were Buckland Sweetwater from Mr. Withers, gr. to G. F. Luttrell, Esq.; Mr. Cooper being 2nd with Foster's Seedling. Mr. Iggulden had the best dish of Peaches, showing very fine Barrington; Mr. W. Daffurn being 2nd with Grosse Mignonne.

Apricots were numerous and good, Moor Park being principally shown. Mr. Daffurn was 1st with Nectarines, showing fine Elruge; Mr. Iggulden being 2nd with Pine Apple. Dessert Pears were somewhat sparingly shown, the best fruits were Jargonelle, Béurre Giffard and Windsor; dessert Apples by Quarrenden, very finely coloured; Beauty of Bath, very good fruit indeed; Red Astrachan, and Irish Peach; light-coloured Plums by Oullin's Green Gage, Nonsuch, July Green Gage, Dennistoun's Superb Green Gage, and Jefferson's. Dark Plums: Goliath, Kirke's Royal Dessert, and Rivers' Early. Culinary Apples by Peasgood's Nonsuch, Lord Suffield, Warner's King, all very fine. Cherries by well-preserved Morellos; white and red Currants were largely shown, the latter in great variety of size and colour.

Vegetables were a remarkable feature. The best ten dishes came from Mr. G. Garraway. Messrs. Sutton & Sons, Reading, offered prizes for six dishes, and were rewarded by a very keen competition; Mr. Henry Moore being 1st. Messrs. Webb & Sons, Wordsley, Stourbridge, also offered special prizes for the same number, and here Mr. Garraway was 1st. Potatos were in very strong force, some very handsome tubers being staged in dishes of twelve, but the practice adopted by the judges in cutting through one in each dish cannot be too strongly deprecated. If it is essential to forming a correct judgment that the tubers be cut, then all should be cut. The result was, that high-class collections were shut out. If a judge has not sufficient knowledge of Potatos to know when the type is represented in good character, he should not attempt to make good this knowledge by the very questionable practice of cutting, or by prejudices against yellow flesh or a coloured skin. Mr. W. Bryant was placed 1st, with six dishes. The best white rounds appeared to be Abundance and Schoolmaster. Coloured rounds: The Dean, Reading Russett, and Vicar of Laleham. White Kidney: Sutton's Seedling, Snowdrop, and International. Coloured Kidneys: Snowdrop, Mr. Bresee, and Edgcote Purple. In all the other classes of vegetables there was an extensive display of finely finished roots, &c.

Miscellaneous exhibits.—These included a large collection of plants and cut flowers from Messrs. R. T. Veitch & Son, nurserymen, Exeter; Carnations and Picotees, hardy flowers, inclusive of Roses, Dahlias, &c., being well represented. Mr. E. J. Jarman, nurseryman, Chard, had a collection of cut Gladioli, Dahlias, Carnations, &c. Mr. W. Slade, florist, Taunton, a collection of zonal Pelargoniums; and Mr. W. H. Fowler, cut Dahlias, Begonias, &c.

MAIDENHEAD.

The eleventh annual exhibition of the above Society was held on Thursday, the 15th inst., in the grounds of Ray Lodge, which, although rather small, are still admirably adapted for such a purpose. The schedule consisted of one hundred classes, and all were well filled, the show itself being probably the best the Society has yet held. Being favoured with fine weather, it was well patronised, and we hope sufficiently so to wipe off the debt incurred last year.

Plants.—In class 1, for twelve handsome foliage plants, Mr. T. Lockie, gr. to G. O. Fitzgerald, Esq., Oakley Court, Windsor, secured the leading position, with medium-sized plants, of which Dracæna Shepherdii, Kentia Fosteriana, and Asparagus plumosus nanus were the most noteworthy.

With six stove and greenhouse plants, half to be in flower, Mr. Aitken, gr. to Major Meeking, Riching's Park, Slough, was an easy 1st, with good plants; 2nd, Mr. Currey; and for the same number of Ferns the two previous exhibitors occupied similar positions, Mr. Aitkin having, among others, Gymnogramma Pearcei robusta, G. peruviana urgyrophylla, and Pteris scaberula, all very good.

With a single specimen plant in flower, Mr. Aitkin was 1st, having a large well-bloomed Eucharis amazonica; and also for a foliage plant, with a large and highly coloured Croton Queen Victoria; Mr. Masson, Cookham, coming 2nd, with a very fine Adiantum Farleyense.

Plants for dinner-table decoration were shown in quantity, some admirable examples being staged by Messrs. Aitken, Hughes, and Lockie.

Fuchsias, Tuberous Begonias, Coleus, and zonal Pelargoniums, were staged by many exhibitors in the various classes, the principal prize winners being Mr. Hopkins, gr. to J. W. Burrows, Esq., The Elms Cookham, Mr. Lockie, Mr. Aitken, and Mr. Deadman, gr. to G. Higgins, Esq.

Groups.—For a group of plants arranged for effect in a space 12 feet by 10 feet, Mr. Aitken maintained his position, leading with a very pretty group, his highly-coloured Crotons being very telling in a setting of Maidenhair Ferns, interspersed with small Gloxinias, &c. In the smaller groups, Mr. Hughes, gr. to H. F. de Paravicini, Esq., Bracknell, was 1st, also with a good arrangement.

Cut Flowers.—These were staged in large quantities, the competition in most instances being very keen. Mr. Tranter, Henley-on-Thames, was 1st for twelve Roses; while Mr. J. Walker, Thame, Oxon, occupied a similar position for Dahlias (Show and Cactus), Asters, and Zinnias. Mr. Hiatt, florist, Slough, was 1st for twelve bunches of hardy flowers.

Fruit.—For a collection of six dishes.—1st, Mr. Aitken, his best being a nice Queen Pine-apple, and good Pine-apple Nectarines; Mr. Goodman, gr. to C. Hammersley, Esq., Abney House, Bourne End, was a close 2nd. Mr. Paxton, gr. to Hon. C. Irby, Taplow, was 1st for four dishes; and for the same number, outdoor grown, Mr. Goodman was 1st, with highly coloured Advance Nectarine, Moor Park Apricot, Rivers' Early Gage Plum, and Old Windsor Pear.

The competition was extremely keen in the principal Grape classes, the 1st prize winners being Mr. Osman, gr. to L. G. Baker, Esq., Ottershaw Park, Chertsey; Mr. Waite, gr. to W. P. Talbot, Esq., Glenhurst, Esher; and Mr. Aitken.

Special Prizes.—Messrs. Sutton & Sons offered a series of prizes for six varieties of vegetables, adding thereby considerably to the display. Mr. Beckett, Cole Ash Farm, Penn, was 1st.

For the same number of dishes, the prizes given by Messrs. Webb & Sons, Mr. Lockie was 1st; Mr. Beckett, 2nd.

In many other classes the competition was good, and amateurs and cottagers contributed excellent produce.

Not for competition.—Messrs. Sutton & Sons contributed a large collection of cut flowers, chiefly of annuals grown from their select seeds; also Gloxinias in 4-inch pots, each bearing numerous flowers of their well-known strain; and a collection of Tomatos, among which Reading Perfection was conspicuous.

Mr. C. Turner, Slough, sent a large and varied collection of Roses and Dahlias; Mr. R. Owen, Maidenhead, single and double tuberous Begonias; and Mr. E. F. Such, a collection of hardy herbaceous flowers.

NATIONAL CO-OPERATIVE FESTIVAL.

The horticultural exhibition promoted by the Agricultural and Horticultural Association (Limited), and held in connection with the Second Great National Co-operative Festival, took place at the Crystal Palace on August 17, under the management of Mr. Edward O. Greening. It was the fourth of a series of flower shows promoted by the co-operative societies, and it was in remarkable contrast to the first, held in the Conservatory of the Royal Horticultural Society's Gardens at South Kensington in 1886, for then the Conservatory was much more than large enough to take the produce; and though there was a decided increase in 1887, yet the dimensions of the building sufficed to take all that was sent in competition. When the flower show was associated with the National Co-operative Festival in 1888, it assumed large dimensions, but yet considerably exceeded by those of the exhibition on Saturday last. Whereas, in 1886 two judges sufficed to award the whole of the prizes, on this occasion fourteen were required, and the work was laborious in the extreme. Altogether some 350 exhibitors contributed just over 4000 entries; and in order to show the national character of the undertaking, exhibitors came from Wales, Scotland, and all parts of England, and one from Ireland. Four rows of tables were placed along the two arms of the nave, with lines of supplementary side-tables in one of them. In the vegetable classes the entries were very numerous, averaging seventy and eighty, and in some cases, over a hundred. The work of judging required great patience, close examination, and adroit comparison; but it appears to have been performed with satisfaction to the exhibitors.

One highly encouraging feature was the remarkable growth in the quality of the exhibits. This is the result of improved culture. When the first show was held it was said, with much truth, that the style in which the exhibits were staged, and their general quality, caused it to fall below the level of an ordinary country cottagers' show. Since then a marvellous improvement has taken place, and not a few of the exhibits on Saturday last were of a high order of merit. Such an exhibition not only will, but certainly does, give a great impetus to popular gardening; the advantages flowing from this have been acknowledged over and over again in these columns.

In looking over the various exhibits, the comparative poverty of the plants attracted attention. There were many of them, but few really good. A very fine specimen or two of Fuchsia, pots of Phlox Drummondii, Asters, and Musk were decidedly the best; but it seemed as if the culture of flowers and vegetables was much more highly esteemed than that of plants. There were classes for forced fruit, and these showed a marked improvement also in quantity and quality; but as gentlemen's gardeners can compete in some of the classes, it is, perhaps, only natural to look for this improvement. Hardy fruit were represented by good Apples, Pears, Gooseberries, Plums, Currants, &c., some of specially high quality. Cut flowers were, in many instances worthy of admiration; bunches of hardy annuals, and especially of pretty Sweet Peas, formed a great attraction to visitors, and the rich orange African Marigolds were excellent. But it was the vegetables that so largely helped to make the show. The advance in the matter of these seen during the past four years is something remarkable. High-class quality, fresh, clean, and neatly staged productions, have taken the place of coarseness and slovenliness. Potatos would have done justice to one of the historical Crystal Palace shows. Carrots, Beans, Peas, Parsnips, Onions, Turnips, &c., were largely up to good exhibition form.

CULTURAL MEMORANDA.

MIGNONETTE.

August is the month in which to sow a large batch for the winter and spring supply, the plants having time to get well established before the dull days arrive. Perhaps the best manner of growing this plant indoors is as dwarf bushy plants, in 5 or 6-inch pots. These should be well drained, and for this purpose old lime plaster is good material to use, Mignonette being partial to limy matter. A sprinkling of sifted lime-rubbish is also beneficial in the compost, which should consist chiefly of good turfy loam, with a moderate quantity of powdered cow-dung, bone-dust, and soot, Jensen's fish guano or Standen's, well incorporated with loam. Fill the pots to within half an inch of the rim, at the same time pressing the soil evenly and firmly. Then sow the seeds thinly, and cover lightly with the finer parts of the compost, water them gently, and stand the pots in a cool frame, on a bottom of coal-ashes or similar moisture-holding material; and to prevent drying, keep rather close and shady until the seedlings come up, after which give air gradually until the sashes may be taken off altogether, and before the young plants get crowded thin out to an inch or so apart. As Mignonette is a cool, moisture-loving plant, never permit it to get dry. The sashes need not be drawn over the plants unless during heavy rains, or when there is danger from frost, and on no account should they be subjected to a close, warm atmosphere. If no better quarters are available they may be wintered in the frame, with careful airing and covering at night, where, if the weather prove mild, they will keep gently on the move through the winter and come in serviceable as the days lengthened. There are several good strains, but the large-flowered red and white are generally preferred; however, for the sake of variety, Golden Queen, which is a neat variety for pot-work, may be chosen. The double white is propagated by cuttings. Those who prefer single plants should sow a few seeds in small pots, ultimately selecting the best plant in each, keeping them steadily pinched and shifted on until the desired size and shape are obtained.

The Giant Pyramidal red, or grandiflora, and Miles' Spiral are good strains to use for standards and single specimens. Slugs are sometimes troublesome in frames, but an occasional dusting of dry lime and soot usually keeps them at bay. *F. R.*

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending August 19.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	84	0	+ 204	+ 4	4 +	154	23.6	13	23
2	0 av.	96	0	+ 53	+ 5	5 +	125	17.2	25	30
3	0 av.	112	0	+ 42	+ 7	5 +	114	15.6	28	28
4	1 —	125	0	+ 13	+ 112	1 —	120	16.5	30	31
5	2 —	119	0	+ 7	+ 60	0 av.	112	19.1	30	29
6	1 —	127	0	+ 51	+ 75	1 +	117	15.5	30	30
7	0 av.	103	0	+ 86	— 23	13 +	129	25.5	25	32
8	1 —	113	0	+ 69	— 1	7 +	119	19.1	17	31
9	2 —	116	0	— 23	+ 88	0 av.	119	21.3	25	36
10	1 —	105	0	+ 36	— 53	16 +	144	23.8	18	27
11	1 —	115	0	+ 8	— 14	21 +	131	23.6	28	34
12	1 —	130	0	+ 94	— 16	1 —	125	16.3	28	40

The districts indicated by number in the first column are the following :—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending August 19, is furnished from the Meteorological Office :—

"The *Weather* has been generally fair over southern, central, and eastern England, but very unsettled and rainy in all other parts of the kingdom. Towards the close of the week the rainfall over our western districts was extremely heavy.

"The *temperature* has just equalled the mean in the East and West of Scotland and the north-east of England, but in all other districts a deficit of 1° or 2° is shown. The highest of the maxima, which were recorded on the 16th over England, and on irregular dates over Ireland and Scotland, ranged from 75° in 'England, S.,' and 'Ireland, S.,' to 66° in 'Scotland, W.' The lowest of the minima were registered at very irregular times, and ranged from 38° in 'Scotland, E.,' to 49° in 'England, N.W.,' and 52° in the 'Channel Islands.'

"The *Rainfall* has been rather less than the mean in 'England, E.,' and the 'Channel Islands, and about equal to it in the 'Midland Counties' and 'England, S.W.;' elsewhere, however, an excess is shown. In 'Scotland, W.,' and over Ireland, the fall has been unusually heavy.

"*Bright sunshine* has been very deficient generally, the percentage of the possible amount of duration having ranged from 13 in 'Scotland, N.,' 17 in 'England, N.W.,' and 18° in 'Ireland, N.,' to 30 in 'England, E.,' the 'Midland Counties,' and 'England, S.'"

Obituary.

George D. Vallance.—We regret to announce the sudden death, from heart disease, on August 17, of Mr. George D. Vallance, for so many years the intelligent and esteemed Head Gardener at Tresco Abbey, Scilly Isles. He had only just retired from that responsible position, and was on his way to Yatton, where he was about to take up his residence. Mr. Vallance left Tresco on Friday morning, and reached the residence of his son, Mr. George F. Vallance, Longbrook Street, Exeter, on Friday evening. Mr. Vallance had been gardener to Mr. Dorrien-Smith for nearly fourteen years. He began his gardening career at Stackpoole Court, Pembrokeshire, afterwards undergoing a period of nursery gardening at Messrs. Mayo & Garaway's nurseries, Bristol. Previous to his going to Tresco, he was gardener to the late Sir William Medlycott, of Ven Hall, Milborne Port, near Sherborne, for thirteen years; and, antecedent to that service, was seventeen years Head Gardener at Farleigh Castle, Somersetshire. He was an enthusiast in his profession, and a true lover of the beautiful gardens at Tresco, as all visitors and residents who were brought in contact with him can testify. Mr. Dorrien-Smith, too, held him in high esteem, and it was only on account of Mr. Vallance's failing health that he had resigned his position at Tresco in that gentleman's service. It was under Mr. Vallance's superintendence and management that the extensive cultivation of Narcissus and other spring-flowering bulbs has been developed in the Scilly Islands. Mr. Vallance was sixty-six, and had married twice.

MARKETS.

COVENT GARDEN, August 22.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

No improvement in business; prices generally showing a downward tendency. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0
Asters, per dozen	3 0	6 0
Balsams, doz.	2 0	5 0
Begonias, dozen	4 0	12 0
Calceolarias, dozen	4 0	9 0
Cockscombs, doz.	3 0	6 0
Cyperus, per dozen	4 0	12 0
Dracæna terminalis, per dozen	30 0	60 0
— viridis, per doz.	12 0	24 0
Euonymus, in var., per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., doz.	4 0	18 0
Foliage plants, various, each	2 0	10 0
Ficus elastica, each	1 6	7 0
Fuchsias, dozen	3 0	8 0
Hydrangea, per doz.	9 0	18 0
Lilium lancifolium, per dozen	12 0	24 0
— auratum, doz.	12 0	30 0
Lobelias, dozen	3 0	5 0
Marguerites, doz.	6 0	12 0
Mignonette, doz.	3 0	6 0
Musk, dozen	2 0	4 0
Nasturtiums, doz.	3 0	5 0
Palms in var., each	2 6	21 0
Pelargoniums, per dozen	6 0	12 0
— Ivy-Leafed, doz.	3 0	4 0
— scarlet, doz.	2 0	4 0
Rhodanthe, per doz.	4 0	6 0
Solanums, per dozen	6 0	12 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0
Asters, Fr., per bun.	0 9	1 6
— English, per bun.	0 4	0 6
Bouvardias, per bun.	0 6	0 9
Carnations, 12 bun.	3 0	6 0
— 12 blooms	1 0	3 0
Chrysanth., 12 blms.	0 6	3 0
Coreopsis, 12 bun.	1 0	3 0
Cornflowers, 12 bun.	1 0	3 0
Dahlias, 12 bun.	3 0	6 0
Eucharis, per dozen	2 0	4 0
Gaillardias, 12 bun.	2 0	4 0
Gardenias, 12 blooms	2 0	4 0
Gladioli, 12 bun.	6 0	12 0
— 12 sprays	1 0	1 6
Heliotropes, 12 spr.	0 6	1 0
Lavender, 12 bun.	3 6	6 0
Lilium, various, 12 blooms	1 0	5 0
Maiden Hair Fern, 12 bun.	4 0	9 0
Marguerites, 12 bun.	3 0	6 0
Mignonette, 12 bun.	1 0	4 0
Pansies, 12 bun.	1 0	2 0
Pelargoniums, 12 spr.	0 6	1 0
— scarlet, 12 spr.	0 3	0 6
Pinks (var.), 12 bun.	2 0	4 0
Primulas, double, 12 sprays	0 9	1 0
Rhodanthe, 12 bun.	4 0	6 0
Roses, Tea, per doz.	0 6	1 6
— coloured, dozen.	2 0	4 0
— red, per dozen	0 4	1 0
— Safrano, dozen	0 6	1 0
Stephanotis, 12 spr.	2 0	4 0
Stock, 12 bunches	3 0	6 0
Sunflowers, various, per 12 bun.	3 0	6 0
Sweet Sultan, 12 bun.	3 0	4 0
Sweet Peas, 12 bun.	2 0	4 0
Tuberoses, 12 blms.	0 4	1 0

Orchid bloom in variety, fairly good supply.

Vegetables.—Average Retail Prices.

	s. d.	s. d.
Beans, Fr., per lb.	0 6	...
Beet, red, per dozen	1 0	2 0
Carrots, per bunch	0 6	...
Cauliflowers, each	0 3	...
Celery, per bundle	1 6	2 0
Cucumbers, each	0 6	0 9
Endive, per dozen	2 0	...
Green Mint, bunch	0 4	...
Herbs, per bunch	0 4	...
Leeks, per bunch	0 3	...
Lettuce, per dozen	1 6	...
Mushrooms, punnet	2 0	...
Mustard and Cress, punnet	0 4	...
Onions, per bunch	0 5	...
Parsley, per bunch	0 4	...
Peas, per quart	1 3	...
Shallots, per lb.	0 6	...
Spinach, per bushel	3 6	...
Tomatos, per lb.	0 9	...
Turnips, per bunch, new	0 5	...

Potatos.—Trade cannot be considered brisk, although no falling off in demand is apparent; a greater difficulty is experienced in obtaining really good samples, and prices remaining about the same as last week. *J. B. Thomas.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 6	Peaches, per doz.	2 0	8 0
Filberts, per lb.	0 10	1 0	Pine-apples, Eng., lb.	1 6	3 0
Grapes, per lb.	0 6	2 6	— St. Michael, each	2 0	6 0
Lemons, per case	12 0	21 0	Plums, ½-sieve	2 6	5 0

SEEDS.

London: *Aug.* 21.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a fair trade doing in those articles wanted for present sowing. There is, however, no change to report in values. Trifolium continues in favour, at the advance previously noted. There is more business passing in Rape seed. Mustard still sells freely. Some parcels of Trefoil are now changing hands. There is a good inquiry for Winter Tares. Rye, being so remarkably low in price, tempts buyers. Fine new Blue Peas are sought after. Bird seeds continue in the same condition as reported in our last.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended August 17 :—Wheat, 30*s.* 9*d.*; Barley, 19*s.* 5*d.*; Oats, 19*s.* 5*d.* For the corresponding week in 1888 :—Wheat, 35*s.* 9*d.*; Barley, 18*s.* 8*d.*; Oats, 18*s.*

FRUITS AND VEGETABLES.

Spitalfields: *Aug.* 21.—Egg Plums, 2*s.* 6*d.* to 3*s.* per half-sieve; Victoria Plums, 2*s.* 6*d.* to 3*s.* 6*d.* do.; Orleans Plums, 5*s.* to 6*s.* do.; Green Gages, 3*s.* to 4*s.* do.; do., 2*s.* 6*d.* to 3*s.* 3*d.* per flat; English Apples, 3*s.* to 7*s.* per bushel; Pears, 2*s.* 3*d.* to 3*s.* per half-sieve; English Tomatos, 4*s.* to 5*s.* per 12 lb.; foreign Tomatos, 6*d.* to 9*d.* per box; Cabbages, 2*s.* to 3*s.* per tally; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Cauliflowers, 1*s.* to 2*s.* 6*d.* per dozen; French Beans, 1*s.* to 1*s.* 6*d.* per bushel; Scarlet Beans, 9*d.* to 1*s.* 3*d.* do.; Peas, 1*s.* to 1*s.* 9*d.* do.; do., 3*s.* to 4*s.* per sack; Vegetable Marrows, 2*s.* to 3*s.* per tally; Turnips, 2*s.* to 2*s.* 6*d.* per dozen bunches; Onions, 2*s.* to 2*s.* 6*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* to 2*s.* do.; Beetroots, 2*s.* to 2*s.* 6*d.* do.; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 4*d.* to 8*d.* per score; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Leeks, 1*s.* 6*d.* to 2*s.* per dozen; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; field do., 4*d.* to 6*d.* do.; Spanish Onions, 6*s.* to 7*s.* per case; English Onions, 4*s.* to 4*s.* 6*d.* per cwt.; Dutch Onions, 3*s.* to 4*s.* per bag; Belgian Onions, 3*s.* to 4*s.* do.; Radishes, 2*s.* to 3*s.* per tally.

Stratford: *Aug.* 20.—A brisk trade was done at the undermentioned quotations :—Cabbages, 2*s.* to 3*s.* per tally; Mangels, 20*s.* to 22*s.* per ton; Onions, Oportos, 7*s.* to 7*s.* 6*d.* per case; Apples, English, 2*s.* to 6*s.* per bushel; Watercress, 6*d.* per dozen; Plums, 6*s.* to 8*s.* per flat; do., 3*s.* 6*d.* to 4*s.* 6*d.* per half-sieve; Pears, 3*s.* to 5*s.* per bushel; Marrows, 2*s.* to 3*s.* per tally; Beans, 1*s.* 3*d.* to 1*s.* 9*d.* per bushel.

POTATOS.

Borough and Spitalfields: *Aug.* 20.—With increased supplies, prices are in favour of buyers. Early Rose, 55*s.* to 65*s.*; Regents, 60*s.* to 80*s.*; Myatt's, 60*s.* to 80*s.*; Hebrons, 60*s.* to 80*s.*; Magnums, 60*s.* to 80*s.* per ton.

Spitalfields: *Aug.* 21.—Quotations :—Magnums, 50*s.* to 60*s.*; Myatt's kidneys, 45*s.* to 50*s.*; Regents, 60*s.* to 70*s.*; Imperators, 60*s.* to 70*s.*; Hebrons, 60*s.* to 65*s.*; Early Rose, 45*s.* to 55*s.* per ton.

Stratford: *Aug.* 20.—Quotations :—Hebrons, 60*s.* to 70*s.*; Regents, 60*s.* to 80*s.*; Magnums, 60*s.* to 70*s.*; Early Rose, 55*s.* to 60*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the present week :—Prime 1887 Clover, 120*s.* to 140*s.*; new, 80*s.* to 110*s.*; inferior, 40*s.* to 75*s.*; best old hay, 80*s.* to 100*s.*; inferior, 30*s.* to 50*s.*; straw, 20*s.* to 40*s.* per load.

ENQUIRIES.

Peaches.—Will any reader be kind enough to give "Enquirer" his experience of the Alexandra and Alexandra noblesse Peaches; if they are gene-

rally shy bearers in a Peach-house not forced very early? Also, if Early Rivers Peach often bears satisfactorily out-of-doors; and which has the better quality, Alexandra noblesse, or the old Noblesse; and lastly, which are the best three, and best six sorts, for a Peach-house not forced very early?

NOTICES TO CORRESPONDENTS.

Intelligent Readers, *do* please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and not to the Editor. All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

A Climbing Plant from America: *Quid.* The Grape Tomato.

Campanula and Sweet William: *G. S.* Nothing very unusual in either.

Cinerarias: *Constant Reader.* Send specimens of diseased plants for our inspection, together with details of culture pursued.

Names of Fruit: *F. B. S.* Early Grosse Mignonne. —*J. B.* If the flowers are large, your Peach is most probably Grosse Mignonne; if small, Bellegarde.

Names of Plants: *W. P. J.* must think an editor's duties are light. He sends thirty specimens of wild plants which a reference to any English Flora would enable him to name. Moreover, in most cases the labels were sodden, so that the numbers are illegible, and many were detached. Is this fair? We cannot undertake to name more than six another time, but as we are willing to oblige, we name all to which the numbers are still attached: —1, Melampyrum pratense; 3, Erythrea centaurium; 4, Parnassia palustris; 5, 6, 7, and 29, all Pedicularis palustris; 9, Salix repens; 10, Euphrasia officinalis; 12, Potentilla reptans; 13, Pyrola rotundifolia; 17, Lotus corniculatus; 18, Anagallis tenella; 23, Senecio Jacobea; 24, Œnothera biennis; 27, Inula dysenterica; 28, Lythrum Salicaria; 30, Achillea Millefolium. — *W. T.* 1, Crepis biennis; 2, Conopodium flexuosum; 3, Torilis anthriscus; 4, Æthusa cynapium; 5, Mercurialis annua; 6, Spiranthes autumnalis; 7, Chenopodium album.—*F. G. H.* Chrysanthemums: 1, C. serotinum; 2, C. lacustre. — *Lymington.* Myrica Gale (Sweet Gall).—*Red Hill.* Asparagus escaped from some garden — Erythræa Centaurium.—*E. D. L.*—1, Fraxinus europæa var. monophylla: one leaflet only produced; 2, Rhamnus hybridus; 3, Jasminum officinale; 4, Osmunda cinnamomea; 5 and 6, Aspidium angulare; the particular varieties we cannot name; 7, Salvia not recognised; 8, Duranta Baumgartii. — *J. M.* 1, Veronica longifolia; 3, Nepeta violacea; 4, Stachys lanata; 5, Gnaphalium; 8, Spiræa aruncus; 9, Spiræa Fortunei; 10, Elæagnus japonicus. Some of the numbers were detached; among the plants unnumbered we find Polygonum affine.—*T. K.* No. 1, Viburnum macrocephalum.—*C. P.* Miltonia spectabilis, nearest to the variety bicolor.—*A. Z.* Ailanthus glandulosa.—*T. & P.* Eleagnus longpes.—*H. M.* 1, Cimicifuga racemosa; 2, Veronica longifolia; 3, Polygonum orientale.—*J. L.* Ailanthus glandulosa.—*Name lost: blue cardboard-box* —1, Amaryllis reticulata; 2, Selaginella Wildenovii; 3, S. Braunii; 4, Adiantum assimile; 5, marked 6, also A. Paccotii; 6, A. excisum multifidum (the crested one); 7, Onychium japonicum.

Orchid Seeds: *R.* There is no other trustworthy test of their germinating than to sow them. Much of what is apparently sound seed will not grow.

Potato Disease: *Sir S. C.* Try syringing with a mixture compounded as follows: — Sulphate of copper, 4 lb.; quicklime, and sublimed sulphur, of each, 3 lb.; water, 22 gallons. Mix thoroughly, and apply with a syringe or Strawsoniser.—Kindly let us know the result.

Show Entries: *G. H.* Where the number of varieties to be shown is distinctly stated, as in the schedule sent for our perusal, and there is no qualification, "as not fewer than," then it must surely be meant that six varieties, neither more nor fewer, must be shown to qualify the exhibit for an award.

Strawberries: *An Amateur.* The best way is to plant in lines from 1½ to 2 feet apart, and 1¼ foot to 1½ foot from plant to plant in the rows, according as the variety planted is a large or small grower. We do not see that there is any advantage in planting in groups of three.

Tomatos: *J. Wright.* Nice-looking fruits; midway, apparently, betwixt the Old Red and Perfection. Flavour was good. — *L'Allegro.* There are plenty of Tomatos similar in shape, size, and colour; for example, the Yellow Plum-shaped.

Vine Leaves: *F. G. H.* The leaves are rather thin, and of small size, and show signs of insufficient ventilation. They are, in fact, just such leaves as would readily get scalded or scorched by a sudden burst of hot sunshine. This mishap will frequently occur under the best management if the roof is a very wide one, and the training wires are less than 1 foot 6 inches from the glass. There is little or no movement of the air in very broad roofs near the middle. When leaves are gently moved by the air, scorching rarely happens.

Vines and Manure: *H. B. P.* The old Mushroom bed materials will answer very well as a mulch to prevent the soil drying, but it will hinder the sun warming the soil if laid on more than an inch thick; and if it save watering when thickly laid on it is nevertheless harmful for the above reason. In the Vine-growing countries no cultivator would think of covering up the ground. A crumbly surface is all that is required, unless the soil is unduly light. Diluted stable or farmyard drainage-water or Thomson's Vine Manure are good for Vines when feeding becomes necessary. As a mulch horse-dung is less injurious to the soil, and better in its effects on the Vines than cow dung.

CATALOGUES RECEIVED.

W. Drummond & Sons, Stirling, N.B. — Bulbs and Flower Roots.

Harrison & Sons, Leicester—Flowering Bulbs and Roots.

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N. — Bulbs, Fruit Trees, Roses, &c.

J. Carter & Co., 237 and 238, High Holborn, London, W.C.—Bulbs.

Dicksons (Limited), Chester — Dutch and Other Bulbs, &c.

J. M. Krannich, Mellenbach i Thür, Germany—Tree Labels.

Sutton & Sons, Reading—Bulbs.

Louis de Smet, Ghent—Supplement to General List of Plants.

J. Peed & Sons, Tulse Hill, S.W.—Bulbous Plants.

F. C. Heinemann, Erfurt, Prussia — Decorative Plants, Bulbs, and New Varieties of Cereals.

E. P. Dixon & Sons, Hull—Flower Roots, Spring Flowering Plants, Strawberries, Vines, &c.

R. Neal, Garrat Lane, and Wandsworth Common, S.W.—Bulbs, Vegetables, and Flower Seeds, &c.

Dobbie & Mason, 66, Deansgate, and 22, Oak Street, Manchester—Bulbs and Flower Roots.

Austin & McAslan, 88, Mitchell Street, Glasgow—Flower Roots, Plants, &c.

W. Shand, Lancaster—Bulbous Plants, &c.

W. Paul & Sons, Waltham Cross, Herts — Dutch Bulbs and Winter Flowers.

R. Cleaver, 47, Bore Street, Lichfield — Dutch Bulbs and Bulbous Plants, Manures, &c.

W. Fell & Co., Hexham — Dutch Bulbs, Narcissus, Herbaceous and Alpine Plants.

Messrs. Webb & Sons, Wordsley, Stourbridge — Bulbs.

Communications Received.—J. H., Trinidad.—E. S., New Zealand.—C. S., Boston, U.S.—W. S.—P. L. S., Paris. — L. B., Paris.—W. E. G.—J. W.—J. W., St. Andrew's (many thanks for photo).—W. R.—W. T. T.—C. A., Cape Town (many thanks for photo).—J. C., Didcot (many thanks for photo).—W. W.—N. C. C. (photo received with thanks).—H. R., Plymouth (the injury seems to have been done by a sawfly).—R. B. & Co.—Hortus.—N. E. Brown.—B.—W. B. —W. B. T.—C. B. S.—T. O.—W. H. D.—F. G.—Irwin Lynch.—W. C.—G. H.—M. T.—W. E.—J. A.—A. G. F.—J. S.—H. G. G. and H. P. next week.

☞ *Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect in all cases to obtain an answer to their enquiries in the current week.*

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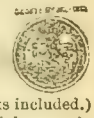
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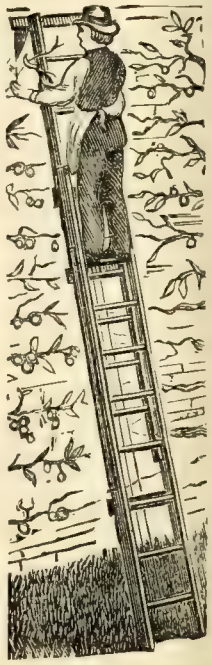
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J. BLACKBURN AND SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats, and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices free.—4 and 5, Wormwood Street, E.C.

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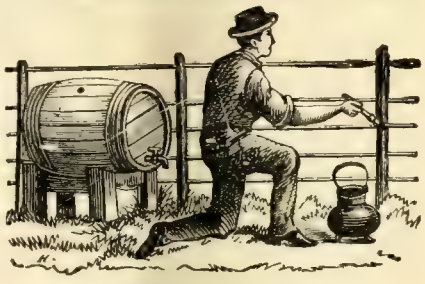
and keep a fixed temperature under glass, by using "FRIGI DOMO," made of prepared hair and wool: a perfect non-conductor of cold.

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"FRIGI DOMO"
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for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

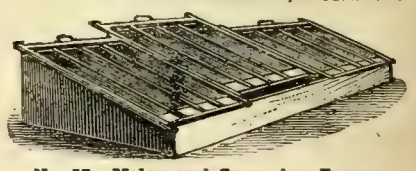
Price 1s. 6d. per gallon at the manufactory, or carriage-paid to any railway station, 1s. 8d. per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

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CHARLES FRAZER'S EXECUTORS,

HORTICULTURAL BUILDERS, NORWICH.



No. 57.—Melon and Cucumber Frame.

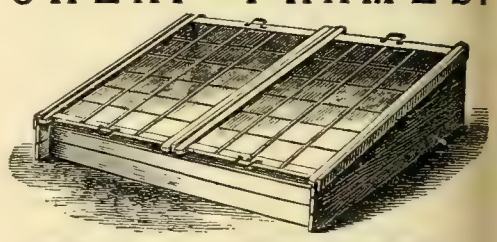
The illustration shows a Three-light Frame, 12 feet long by 6 feet wide. Height at front 11 inches, height at back 22 inches. Made of thoroughly seasoned redwood deal, sides and ends 1¼ inch thick, screwed together at the angles, and with the necessary parting pieces and runners for the lights, which are 2 inches thick, strengthened with iron bar across, and fitted with iron handle complete. All parts painted three coats of best oil colour, and light glazed with 21-oz. glass, nailed and bedded in good putty.

			£	s.	d.
1-Light Frame	... 4 ft. by 6 ft.	CASH PRICES	£2	0	0
2 ,, ,,	... 8 ft. by 6 ft.		3	0	0
3 ,, ,,	... 12 ft. by 6 ft.	CARRIAGE AND	4	5	0
4 ,, ,,	... 16 ft. by 6 ft.		5	10	0
5 ,, ,,	... 20 ft. by 6 ft.	PACKING FREE.	6	15	0
6 ,, ,,	... 24 ft. by 6 ft.		8	0	0

Carriage is Paid to all Goods Stations in England and Wales; also to Glasgow, Edinburgh, Dublin and Belfast.

New Illustrated Catalogue of Conservatories, Greenhouses, Garden Frames, Poultry Houses, and Dog Kennels, post-free for six stamps, to be deducted from first order.

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PORTABLE CUCUMBER FRAMES.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

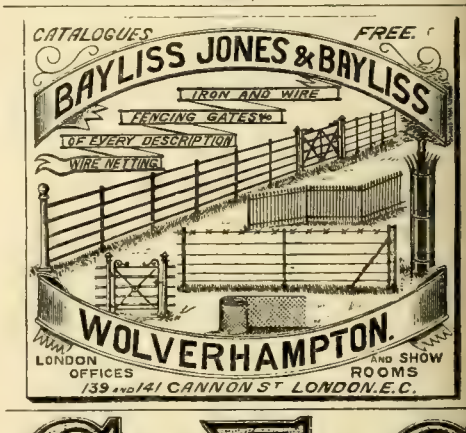
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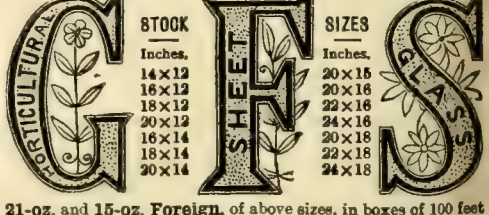
		£	s.	d.
1-light frame,	4 ft. by 6 ft.	2	0	0
2-light frame,	8 ft. by 6 ft.	3	2	6
3-light frame,	12 ft. by 6 ft.	4	15	0
6-light frame,	24 ft. by 6 ft.	8	10	0

Carriage and Packing Cases FREE.

Larger sizes at proportionate prices.

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London Agent—Mr. H. SKELTON, Seedsman, &c., 2, Holloway Road, N.





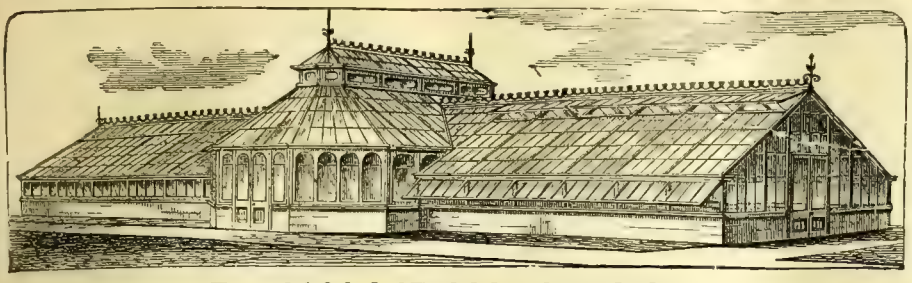
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English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.

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Five 1st Prize Medals recently awarded in open competition.

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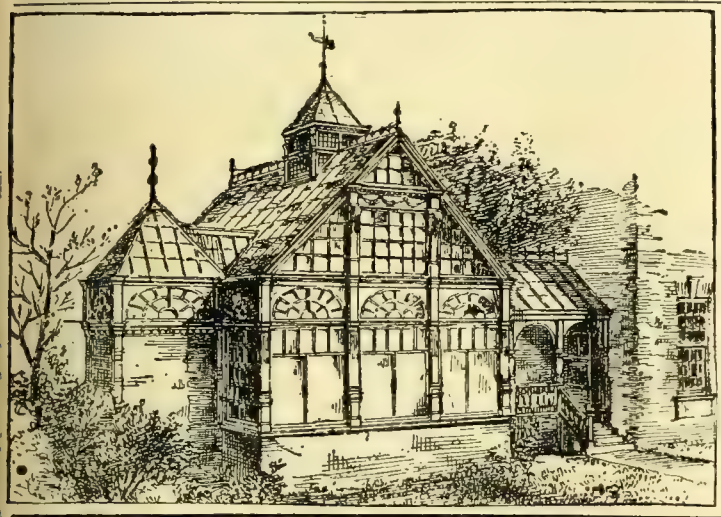
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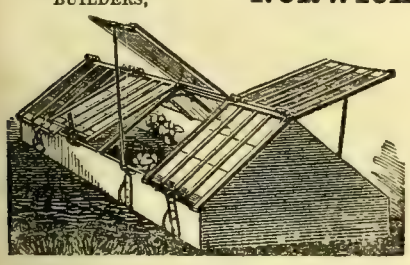
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BOOK of Photo-Lithographed Sketches of Winter Gardens, Ranges of Hothouses, Vineries, Architectural Conservatories, &c., of various Designs and Sizes, recently constructed, erected, fitted, and heated complete by us in different parts of the country; with particulars of the most successful Hotwater Heating Apparatus of the century.

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This Frame is strong and very handy to use. Plants grow very strong and quickly in this form, owing to its ample light and ventilation. The sides of the Frames are 14 inches high, the ridge is 2 feet 3 inches. Lights turn quite over. Glazed with 21-oz. English glass, and painted four times.

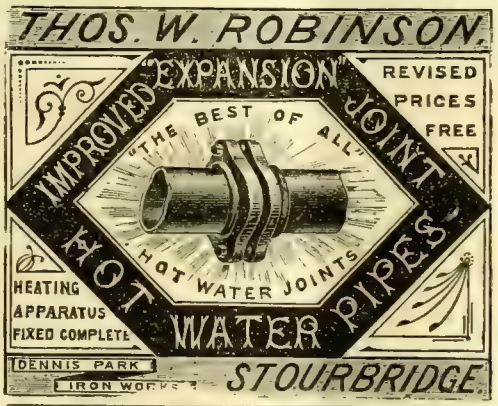
	Length.	Width.		
1 Light Frame,	4 ft.	by 6 ft.		£2 17 6
2 " "	8 "	by 6 "	Cash Prices, Carriage and Packing FREE.	4 7 6
3 " "	12 "	by 6 "		5 17 6
4 " "	16 "	by 6 "		7 7 6
5 " "	20 "	by 6 "		8 17 6
6 " "	24 "	by 6 "		10 7 6

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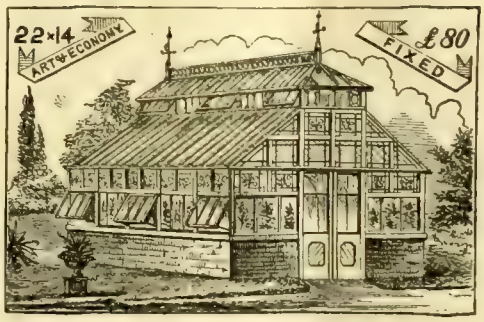
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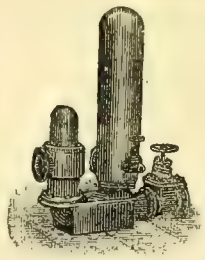
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Is the most efficient, self-acting Pump. It will force water from streams or springs on low levels to tanks or reservoirs on hills, &c. It saves all water cartage, and is always at work, requiring no attention.

All that is necessary is a small fall from a spring or stream, say 24 inches, when water can be forced to heights varying from 200 to 300 feet, and 2 miles distant.

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TRADE  MARK.

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Are confidently recommended as a simple but certain remedy for

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See Testimonial, selected from hundreds:—

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STEEL AND JONES, 4, Spring Gardens, Charing Cross, London, S.W., to whom Orders for Advertisements and Subscriptions may be sent. A Specimen Copy post-free for 10*d*. (stamps).

To Florists (First-class).—Partnership, Active.

A GENTLEMAN is prepared to treat with a First-class Florist, of known ability, with £1000 capital, with a view to PARTNERSHIP. Advertiser, having a fine Freehold Estate, with good Gardens, and a considerable quantity of Glass (and which he would be prepared to extend) would Let the same at a very moderate yearly rental to the Joint Partnership. Good Retail Shop for the Sale of the Produce already recently established in a flourishing town near London. Highest references given and required.—Principals only address, in confidence.
P. J., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W.C.

Cardiff Union, Ely Schools.—Gardener Wanted.

THE BOARD of GUARDIANS will at their Meeting on the 7th of SEPTEMBER, 1889, appoint an INDUSTRIAL TRAINER in GARDENING, at their Schools, at Ely, near Cardiff.
The duties of the Officer will be to Cultivate the Garden, which is devoted to Vegetables only; Instruct and Assist the Boys in Practical Gardening and Field Work, and make himself generally useful about the premises, under the direction of the Guardians and the Master.
Candidates must be Single, or Widower without children, and possess a competent knowledge of Gardening.
Salary £40 a year, with board, lodging, and washing.
Forms of Application must be obtained from me, and returned not later than Monday, September 2, 1889.—By order,
ARTHUR J. HARRIS, Clerk.
Queen's Chambers, Cardiff.—August 13, 1889.

WANTED, a good, general GARDENER. Will be required to take charge of a small place in the Colonies. Wages, £70 per annum. Unmarried man and teetotaler preferred. Will be by himself.—A. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a GARDENER, for small single-handed place, near town. Must be a married man, without family; steady, active, and thoroughly up to his work. Small conservatory, fernery, and greenhouse. Rooms, coals, and gas found.—Address, stating wages required, to T. R., Messrs. Street & Co., 30, Cornhill, E.C.

A GENTLEMAN, removing to Germany, REQUIRES a GERMAN GARDENER, familiar with Orchid Culture, to take Charge of Collection of Orchids and Small Garden.—OAKFIELD, The Avenue, Gipsy Hill, S.E.

Gardener.

WANTED, a steady young MAN, to do Jobbing Work, and fill his time up in the Nursery. State age, wages, and reference.—WM. WEED, The Nursery, Uppingham.

WANTED, a SECOND GARDENER, where five are kept. Must be fully competent both Inside and Out, willing and obliging, and have a good knowledge of Propagating and Plant Growing. Wages, 18*s*. per week, no bothy. Must have a good character.—E. R. WEBBER, The Garden, Henwick Grange, Worcester.

Under Gardener.

WANTED, a respectable, married MAN, without encumbrance. Must be a good Gardener, and competent to take charge of Conservatory, and well up in the Growth of Plants. Wages 16*s*., and house found.—Mr. BAILEY, Rosherville Gardens, Gravesend.

WANTED, a steady young man, as UNDER GARDENER, Inside and Out. Age about 20.—References to WM. PARTRIDGE, Cleadon Meadows, Sunderland.

WANTED, a FOREMAN, for Fruit Farm in Kent. Must have had similar experience, be well qualified, of good character, and a teetotaller. — Apply, The NORMAL MANURE COMPANY (Limited), 121, Bishopsgate Street Within, E.C.

WANTED, a thorough good allround FOREMAN and PROPAGATOR, to produce large quantities of Flowering Plants, Cut Flowers, the Forcing of Bulbs, &c., where a large trade is done in Wreath Making. State age, if married, also wages, and references, &c. (strictest confidence), A. K. J., Messrs. Hurst & Son, Seed Merchants, 152, Houndsditch, E.

Southend Local Board.

THE SOUTHEND LOCAL BOARD require an OFFICER to take the Management, under the Surveyor, and Assist in Enforcing the Bye Laws relating to the Cliffs and Pleasure Grounds under their control. He will also be required to attend to the Planting, Formation of Paths, and Drainage of the Grounds. A Uniform will be provided, and the wages will commence at 25*s*. per week.
Particulars of the duties required will be supplied on application to Mr. P. DODD, Surveyor, Southend.
Applications, with testimonials, and stating age and present occupation, to be sent to me on or before September 3 next.

Southend, August 16, 1889. WILLIAM GREGSON, Clerk.

WANTED, for a Garden of nearly 2 Acres, a competent SINGLE MAN, to Grow Produce for Market. Must have good character. Can sleep but not board on premises. A good percentage on all sold, with an allowance of 10*s*. per week for board.—ALPHA, Fitness, Horticultural Agent, Sellindge, Kent.

WANTED TWO Young MEN, one used to Roses, and one used to Soft-wooded Plants for Market. —CHILD'S Nursery, New Eltham, Kent.

WANTED, a good LABOURER, for a small Nursery. Must be a good Planter, Pruner, and have a knowledge of Propagating. Wages 18*s*. per week.—W. DALE, Hickmandias Nursery, Knockholt, Kent.

WANTED, a TRAVELLER, for the Wholesale Nursery Trade. None need apply unless thoroughly experienced in the Value of and Nomenclature of Nursery Stock, both Indoors and Out of-doors; also should be well-known on the road.—Reply, stating salary, experience, &c., to THOS. CRIPPS AND SON, Tunbridge Wells Nurseries, Kent.

Shorthand Clerk.

A VACANCY will shortly occur in the Offices of Messrs. LITTLE AND BALLANTYNE, Carlisle, for a SHORTHAND CLERK, who has been accustomed to the Nursery and Seed Trade.—Apply, by letter, giving full particulars as to age, experience, references, salary required, &c.

WANTED, a thoroughly experienced HAND for our City Shop, must be first-class at Wreaths, Bouquets, Sprays, &c.—Apply personally, after 1 o'Clock, to WHARTON AND CO., 55, Pall Mall, S.W.

Assistant Shopman Wanted.

WANTED, an ASSISTANT in the Seed Trade, and to Assist, when required, in the Office. Must have had three or four years' experience in a good Retail House.—Apply, stating age, wages expected, and where last employed, to JNO. JEFFERIES AND SON, Seed Merchants, Cirencester.

To Florists.

WANTED, a Young LADY, to Manage Branch Establishment. Good at Bouquets, Wreaths, and Sprays. — Apply, stating experience, salary, &c., to W. LEWIS, 24, The Triangle, Bournemouth.

WANTED, an experienced FLORIST and SALESWOMAN. Must be a good Wreath and Bouquet Hand. Good references.—J. DANIELS, 209, Oxford Street, Manchester.

GARDENING APPOINTMENTS.

Mr. HENRY SAWYER, late Head Gardener to the Dowager Marchioness of DOWNSHIRE, Wakehurst Place, Hayward's Heath, has been appointed Head Gardener to W. MORE MOLYNEUX, Esq., Loseley Park, Guilford.

Mr. JAMES ROSS has been engaged as Head Gardener to Mrs. CHARRINGTON, Burys Court, Reigate, Surrey.

Mr. THOMAS HERBERT, lately General Foreman at Castle Hill Gardens, Bletchingley, has been appointed Head Gardener to J. T. CHARLESWORTH, Esq., Nutfield Court, Nutfield, Surrey.

Mr. C. MARSHALL, late Head Gardener to General NEWDEGATE, Arbury, Nuneaton, has been appointed Head Gardener to Earl SYDNEY, Frognal, Foot's Cray, Kent.

Mr. W. OWEN, late Head Gardener to P. SAILLORD, Esq., of Buchan Hill, Crawley, Sussex, has been appointed Head Gardener to B. V. MELVILLE, Esq., Ford Manor, Lingfield, Surrey. His late Foreman has been appointed at Buchan Hill.

Mr. W. FARR, for fourteen years Gardener to Sir R. KNIGHTLEY, Bart., Fawsley Park, Daventry, has been appointed to succeed the late Mr. J. BAYNE as Gardener to Lord DARTMOUTH, Patshull House, Wolverhampton.

WANT PLACES.

Letters addressed "Poste Restante" to initials or to fictitious names are not forwarded, but are at once returned to the writers.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to W. RICHARDS, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.
N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 238, High Holborn, W.C.

ORMISTON AND RENWICK have on their Register a number of experienced SCOTCH GARDENERS and FORESTERS, which they can confidently recommend.—Nursery and Seed Warehouse, Melrose.

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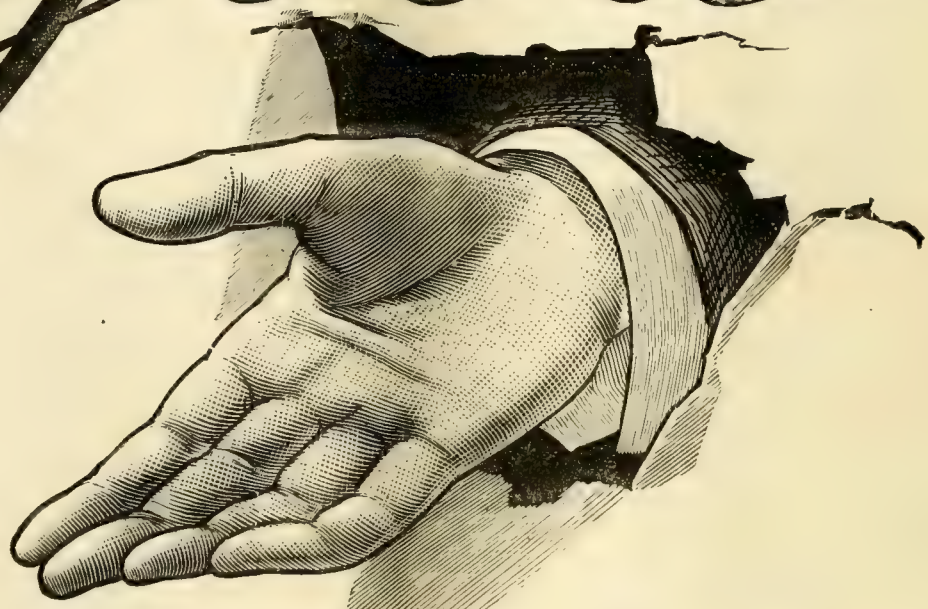
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MASSACHUS AGRIC

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2540.

No. 140.—Vol. VI. {Third Series.} SATURDAY, AUGUST 3, 1889. [Regt. as a Newspaper. {Price 3d. Post-Free, 3½d.

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LANDSCAPE GARDENING.—Our Mr. T. H. MAWSON (successful competitor) is prepared to Advise on, and submit Designs for all classes of Landscape Gardening, Estate Improvements. Highest testimonials from gentlemen for whom he has already carried out improvements, &c.
Address, MAWSON BROTHERS, The Nurseries, Windermere.

SALES BY AUCTION.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, September 12, at half-past 12 o'Clock precisely, and he will be glad if gentlemen desirous of ENTERING PLANTS FOR THIS SALE, will please SEND LISTS NOT LATER THAN THURSDAY NEXT.

Dutch Bulbs.

GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Friday next.

IMPORTED and ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 6, at half-past 12 o'Clock precisely, a large quantity of IMPORTED ORCHIDS, including 300 Oncidium undulatum, Odontoglossum Rœzlii, and many others, together with a very fine selection of various ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Hendon, N.W.

UNRESERVED CLEARANCE SALE, by order of Mr. Pounce, the ground being required for building.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Pounce's Nursery, Hendon, N.W., on TUESDAY, September 3, at 12 o'Clock, without reserve, 4000 CARNATIONS, mostly Gloire de Nancy; 1000 CHRYSANTHEMUMS, White and Yellow; 3000 FERNS, of sorts; large white LAPAGERIAS and AZALEAS, BOUVARDIAS, and other PLANTS. The erections of 7 GREENHOUSES, 1200 feet of 4-inch Hot-water PIPING, BOILERS, loose lights, horse, market VAN, and Sundries.

May be viewed the day prior and morning of Sale. Catalogues had on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

The Great Annual Trade Sales of Greenhouse and OTHER PLANTS.

IMPORTANT TO NURSERYMEN, FLORISTS, and OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to call attention to the GREAT ANNUAL TRADE SALES, which will take place as advertised in this day's paper. All Catalogues are sent free of charge, and will be ready for distribution in a few days. Copies forwarded on application to the Auctioneers, 67 and 68, Cheapside, London, E.C.

Swanley Junction, Kent.

GREAT UNRESERVED SALE of immense quantities of GREENHOUSE PLANTS, unusually well-grown.—Important to the Trade.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. P. Ladds, to SELL by AUCTION, without reserve, on the Premises, the Nurseries, Swanley Junction, Kent, adjoining Swanley Junction Railway Station, on WEDNESDAY, September 11, at 11 o'Clock punctually, in consequence of there being upwards of 1600 lots, immense quantities of remarkably well-grown GREENHOUSE PLANTS, including the following:—

22,000 Erica hyemalis and superba, in 48's, and 32's	50,000 small Heaths, for potting on
4,000 Erica gracilis, in 48's	2,000 Miss Joliffe Carnations
30,000 Genistas	2,000 Adiantum cuneatum
5,000 Ventricosa and other Heaths, in 48's and 32's	7,000 Tea Roses, all best varieties

Palms, Pandanus Veitchii, Adiantum Farleyense, and other Stock.

The Stock may now be viewed. Catalogues obtained of Mr. Ladds, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Sidcup, Kent.

About ten minutes' walk from New Eltham, (late Pope Street) Station, S. E. Railway.

GREAT ANNUAL TRADE SALE of winter blooming HEATHS, particularly well-grown and beautifully set with flowers.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Gregory and Evans to SELL by AUCTION, without reserve, on the premises, The Longlands Nursery, Sidcup, S.E., on THURSDAY, September 12, at 11 o'Clock precisely, in consequence of the great number of LOTS, an enormous quantity of unusually well-grown plants, comprising:—

25,000 Winter Flowering Heaths	2,000 Cavendishii
5,000 Ventricosa, of sorts	5,000 Mixed Ferns in 48's
2,500 small Ferns for growing on, including Pteris cristata, P. Mayii, P. compacta, P. Argyrea, Lomasii Gibba	1,000 Double Primulas
	1,000 Cyclamen
	2,000 Roses in 24's and 48's
	1,000 Poinsettias
	2,000 Solanums

Large quantities of Mixed Plants, including PALMS, FICUS, DRACÆNAS, &c.

May be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

Dyson's Lane Nursery, Upper Edmonton,

(about 10 minutes' walk from Angel Road, and 8 minutes from Silver Street Railway Station, G.E.R.)

FOURTH ANNUAL SALE of about 45,000 GREENHOUSE and OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May, to SELL by AUCTION, on the Premises, Dyson's Lane Nursery, Upper Edmonton, on MONDAY, September 16, at 11 for 12 o'Clock punctually, in consequence of the large number of lots, about 45,000 STOVE and GREENHOUSE PLANTS, remarkably well-grown and in the best possible condition, including:—

20,000 Ferns, all of the most useful market sorts, and many novelties.	Tea Roses in Pots, Maréchal Niel, Gloire de Dijon, and W. A. Richardson.
10,000 Tree Carnations, including a fine lot of Mrs. Reynolds Hole, Mdlle. Earl, A. Alegatierre, Andousia, Old Crimson Cove, &c.	10,000 Bouvardias, including President Cleveland, Mrs. Robert Green (new); Jasminoides, Candidissima.
	6000 Genistas, fine bushy stuff.

Crotons, Draœnas, Eucharis amazonica, Aralias, Statices, Euphorbia Jaquimæflora, &c., Ampelopsis Veitchii, Clematis, and Ivies, Cyclamen, Double White Primulas, English-grown Camellias, welset with buds; Azaleas, forward in, and for early forcing; Ficus elastica, Aralia Sieboldii, small Heaths, Genistas, Bouvrdias, &c., for growing on, and a great variety of other useful plants.

May be viewd any day previous to the Sale. Catalogues may be obtaine on the Premises; and of the Auctioneers, 67 and 68, Cheapsie, E.C., and Leytonstone.

Lee, Kent, S.E.

GREAT ANNUAL SALE, to commence punctually at 11 o'Clock, there being upwards of 1200 lots to Sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, S.E.R., on TUESDAY, September 17, at 11 o'Clock punctually, without reserve, a large quantity of remarkably well-grown WINTER BLOOMING HEATHS, and other STOVE and GREENHOUSE PLANTS, consisting of,—

20,000 Erica hyenlis	600 Cyclamen
5,000 ,, gracil	1,500 Epacris
2,000 ,, Cavenshii	800 Boronia megastigma
1,000 ,, coccin minor	5,000 Genistas
600 ,, caffra	3,000 Solanum capsicastrum, well berried
600 ,, melanera, all well set ith bloom-buds	2,500 Bourvardias
	1,000 Adiantum cuneatum
2,500 Grevillea rusta	500 Lomaria gibba
1,000 Ampelopsiseitchii	800 Tea Roses (in pots)
34 Camellias, scimens	500 Aralia Sieboldii

with a large quan y of young Erica hyemalis, E. Cavendishii, E. gracilis, and hers; also Genistas, all in 60-pots for growing on.

The Stock is n on view. Catalogues may be had on the Premises; at the ad Warehouse, 61, High Street, Lewisham, S.E.; and the Auctioneers and Valuers, 67 and 68, Cheapside, London E.C.

ea Bridge Road, E.

Annual Unreved Sale of fine Winter-flowering HEATHS, &c.

MESSRS. ROTHEROE AND MORRIS are instruted by Mr. John Fraser to SELL by AUCTION, on theremises, the Lea Bridge Nurseries, Lea Bridge Road, Leyt, E. (close to the Hoe Street Station, Great Eastern Raiy), on WEDNESDAY, September 18, at 11 o'Clock precisel in consequence of the large number of lots, a large quany of WINTER-FLOWERING and other PLANTS, includin—

12,000 Erica hyema	2,000 Maréchal Niel, Gloire de Dijon, William Allen Richardson, and other Roses, 8 to 10 feet
3,000 Tree Carnats	
4,000 Erica gracili	
6,000 Genista frag s	6,000 Clematis Jockmanii, and other best-named sorts
6,000 Ampelopsis eitchii, 4 feet	1,000 Deutzia gracilis, established in pots
2,000 Epacris	6,000 Bouvardias, including a lot of "President Cleveland"
2,000 Lapageria rosuperba	
6,000 Cyclamen ersicum (Fraser's superbrain)	5,000 Solanums, beautifully berried
2,000 Passiflora nstance Elliot and coeru	1,000 Clematis indivisa lobata
1,000 Variegated t other Ivies	

and a great numbof Araucaria excelsa, Erica perspicua erecta, Erica caffrarge-flowering white Jasmines, Honeysuckles, Stephano floribunda, Ivy-leaved Geraniums, Boronia megastigund heterophylla, Escallonia macrantha, Gum Cistus, Japar Honeysuckles, Ceanothus, and other plants. Also a larguantity of young Heaths and Genistas, for potting on.

The whole of the ck is in the best condition, and ready for immediate sale.

HOE STREET STON, on the Great Eastern Railway, is within a short dista of the Nursery. Train from Liverpool Street every half-ho

May be viewed. alogues had on the Premises; and of the Auctioneers, 67nd 68, Cheapside, London, E.C., and Leytonstone, E.

leld Highway, N.

The Brimsde Nursery, adjoining Brimsdown Station, G. E. R.

Twenty-first ANNL TRADE SALE of STOVE and GREENHOUSLANTS. The Sale to commence punctually at 11 o'C, there being upwards of 1200 Lots to Sell in one day.

MESSRS. PTHEROE AND MORRIS are instructed br. J. Maller to SELL by AUCTION, on the Premises, The asdown Nursery, Green Street, Enfield Highway, N., adjoi the Brimsdown Station, G. E. R., on THURSDAY, Septer 19, at half-past 10 for 11 o'Clock

Cnued on next column.

Continued from previous column.

punctually, in consequence of the large number of Lots, large quantities of remarkably well-grown STOVE and GREENHOUSE PLANTS, comprising:—

15,000 Winter-blooming Heaths, including hyemalis, gracilis, caffra, Wilmorea, ventricosas in variety, &c.	Vulcan, and other best varieties
	1,000 Grevillea robusta
	5,000 Genistas
	1,000 double white Primulas
5,000 Solanums, exceptionally well-grown and berried	1,000 Stove and Greenhouse Climbers
	Dipladenias of sorts
5,000 Ferns, Adiantums, Lomarias, Pteris, &c.	1,000 Passiflora
	2,000 Ampelopsis Veitchii
3,000 Tree and other Carnations, leading varieties, including 200 "Germania"	500 Crotons, beautifully coloured
	150 Chrysanthemum Mrs. Alphæus, hardy strong plants in 48's, Palms, Ficus, Camellias, and Azaleas for cutting
7,000 Epacris to name	
5,000 Bouvardias, including President Cleveland,	

Many thousands of small Ericas, Genistas, Ferns, &c.

Large quantities of Acacias, Gardenias, Euphorbia jacquiniflora, Geraniums, Chrysanthemums, Poinsettias, Euonymus ovatus aureus, &c., suitable for the Trade and other extensive Buyers.

May be viewed. Catalogues had on the Premises, and also at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone.

N.B.—The whole of the Stock is in first-rate condition, the Ericas being especially well set for flowers, and the Solanums unusually well berried.

TO BE SOLD, a bargain!!! A grand old NURSERY, in the West of England. Established upwards of a century, containing about 20 acres of rich fertile Soil, enjoying special climatic advantages, splendid young Stock, nearly 40,000 feet super of Glass, Trade Buildings, large and commodious Dwelling House. Held on lease. Incoming £3500.

Apply for particulars to Messrs. PROTHEROE AND MORRIS, Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

WANTED TO RENT, a GARDEN, one to two acres with Glass, near a railway station, within twenty miles of Covent Garden. Particulars and terms to A. F., care of Mr. Eydmann, 1, Holly Road, Chiswick.

Garden Wanted.

TO LEASE or BUY, an acre or acre and half of GROUND, Orchard with Cottage preferred, not more than forty minutes from London, on either Waterloo or Victoria lines, with or without glass.

GARDEN, 29, Ashley Place, S.W.

WANTED, TO RENT, a GARDEN and GREENHOUSES, or Small Nursery, South or West of England preferred, suitable for Growing for Market.

State particulars, rent, &c., GARDENER, Mr. Elliott, 2, Trinity Road, Jersey.

FOR SALE, £180, or offer, UPTON NURSERY, 6 Houses, the property of Lessee; 21 years' Lease; about an acre of Ground. Easy terms.

Apply, Upton Nursery, Upton Lane, Forest Gate, E.

TO BE SOLD, a NURSERY, with Residence, three-quarters of an acre, near the Clapham Road Terminus of the City and Southwark Subway. Apply to J. STANDEN ADKINS, Architect, 6, Upcerne Road, S.W.

FOR SALE, a Freehold NURSERY GROUND, together with Goodwill of Business, and the Plants, in consequence of a death. Price £575 for everything. Four long Greenhouses, 4-roomed Cottage, &c. Apply to WALFORD AND WILSHIN, Auctioneers, Anerley, S.E.

Extensive and desirable Nursery Business for Sale, at Annan, Dumfriesshire.

THERE IS FOR SALE, by Private Bargain, as a going concern, the Old-established NURSERY BUSINESS, so long and successfully carried on, under the firm of Messrs. John Palmer & Son, by the late William Palmer, Nurseryman, Annan.

The Nurseries extend to 54 acres or thereby, 8 acres being held on lease from Mrs. Clarke of Galabanks, which expires at Candlemas, 1890, and 46 acres belonging to the trustees of the late Mr. Palmer, with whom arrangements could be made for a Lease on very moderate terms.

The Nurseries are in the highest state of cultivation, and the Stock is exceptionally healthy and good. It consists of seedling and transplanted Forest Trees; seedling and bedding Shrubs of all sorts; and a fine collection of good growing Coniferæ; with ornamental Trees, and Roses of the finest and most varied sorts. There is also a fine and varied stock of Fruit and other Trees, all in excellent growth and in great demand. In connection with the Nurseries, there are Sheds and Grounds set apart and completely fitted up, for propagating and other purposes.

The Nurseries are situated close to the Station of Annan, on the main line of the Glasgow and South-Western Railway; and also near to the Station, on the line of the Caledonian Railway Company.

This excellent situation affords a very ready and advantageous outlet to all the English and Scotch Markets, and is one of the great advantages which these Nurseries possess. There is also a convenient outlet into Cumberland and the West Coast, by the Solway Junction Railway.

This is a most favourable opportunity for any party acquiring, on most advantageous terms, such an excellent Nursery Stock and Business, which has for so long held a prominent place among the Nurseries of Scotland.

Application for any further particulars may be made to Messrs. BROWN AND LITTLE, British Linen Company Bank, Annan, who will arrange for inspection of the Nurseries.

FLORISTS, FRUITERERS, and SEED BUSINESS, in a large town in Hampshire. Handsome frontage, splendid connection. Trade approaching £2500 a year, at high profits. Price, including Greenhouses, Stoves, Horse, Trap, Stock, and everything as a going concern, about £1100.

Full particulars can be obtained of Messrs. DAVIS AND BENNETT, 25, Portland Street, Southampton.

Great Attraction to Lovers of Fruit and Flowers.

RESIDENCE (pretty old-fashioned, large, detached), in excellent order, 16 Rooms (with every comfort), Drawing-rooms, Dining, Library, Kitchens, &c., all on ground floor, and 9 Bedrooms. Splendid views, Bathroom, 2 Fruit Orchards, extensive Gardens, abundance of delicious Fruit; Conservatories, Stables, Cowhouses, &c. Great bargain. £120 per annum; or with less ground, £95. Worthy immediate inspection. Might be let furnished.

Apply, A., Woodville, Welling, near Bexley Heath.

TO BE LET, for Christmas Next, the well-appointed family residence BAGOT MANOR, within a mile of St. Helier's, Jersey, with all its Vineries and Greenhouses and extensive Fruit Plantations of upwards of 50,000 choice Pear Trees now in full bearing. The property is divided into three sections, surrounded with high walls, extending over two miles, on which grow choice Fruit Trees also in full bearing.

SECTION 1.—Contains the family Residence, with Ornamental Trees, Flower Gardens, Conservatory, and extensive Outhouses, Coach-house and Stables, Packing and Fruit Rooms, walled Kitchen Garden, 7 Greenhouses and Vineries, and 7 acres of Fruit Plantation and Gardener's Cottage.

No. 2.—Contains 11 acres of Fruit Plantation laid out in squares, edged by Strawberry and Asparagus Plants, all of which is completely walled in.

No. 3.—Contains 3½ acres, most of which is also planted with choice Trees in full bearing, all completely walled in.

For particulars, apply to G. P. BENEST, House and Estate Agent, 18, Queen Street, Jersey.

To Nurserymen, Florists, and Others.

TO BE LET, at Brentwood, in the midst of a high-class residential neighbourhood, a large piece of LAND, upon which are a small House and Shop, and several Greenhouses. The rent is moderate, and to a practical man with a knowledge of the Cut Flower Trade, a first-rate opportunity offers itself for establishing a lucrative business. An allowance would be made by the landlord towards necessary repairs.

For particulars, apply to ALFRED RICHARDS, Auctioneer and Land Agent, 8, New Broad Street, London, E.C.

Channel Islands.

TO LET, Highfield, St. Saviour's, Jersey, delightful RESIDENCE, with 15 Green and Hot Houses, in full bearing.

Particulars, Mrs. BRAYN, on Premises.

GRASS LAND TO LET, 1 to 10 Acres, suitable for Nurserymen and others, on Lease, 7, 14, or 21 years. Rent £12 per acre, with the option of the Purchase of Freehold within the first seven years. No Tithe or Land Tax. Near the main road, Enfield Highway, about 9 miles from London, and ten minutes from Railway Station.

Apply HENRY MOORE, 59, Bishopsgate Street Within.

TO BE LET, at Michaelmas next, the PILTDOWN NURSERIES, Maresfield, Sussex, 2½ miles from Uckfield Station (L. B. and S. Coast Railway), and a little more from Buxted and Sheffield Park Stations.

These Nurseries were for many years owned and occupied by the late Mr. James Mitchell, one of the most successful exhibitors of Roses of his day, and they are particularly suitable for their growth. They are also well adapted for all kinds of Coniferæ and Flowering Shrubs, and Fruit and Forest Trees. They are about 15 Acres in extent.

The Nurseries are well stocked with Roses of the best kinds, Ornamental Shrubs, Fruit and Forest Trees, &c. It has been for five years, and is now in the occupation of Mr. G. W. Piper.

They are an easy distance from the Stations on the London, Brighton, and South-Coast Railway, on the direct Tunbridge Wells and Brighton Line, and are therefore in direct railway communication with these towns, as well as Lewes, Hastings, and Eastbourne.

For full particulars, and to view, apply to MARK SANDFORD, Estate Agent, Maresfield, near Uckfield, Sussex.

VALUATION.—Wanted a thoroughly competent Man to place a value for a probable Purchaser on a few acres of Land, a Residence, Out-buildings, and large Vineries, in Sussex. State terms to

W. GOULD, 13, York Buildings, Adelphi, W.C.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Make SPECIALTIES of the following:—

ORCHIDS, of which they have an immense stock, and they are constantly receiving fresh importations from various parts of the world.

ORCHID BASKETS, made of the best Teak and Copper Wire.

COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.

ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.

TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.

FERNS, a large and fine stock of the leading kinds.

GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.

ROMAN HYACINTHS, 1st size, 5 to 6½ inches circumference, 17s. 6d. p. 100; 2nd size, 15s. p. 100; 3rd size, 12s. 6d. p. 100.

The Company offer all the above at the lowest possible prices. New Illustrated LIST, post-free, on application to

THE VINEYARD AND NURSERIES,

GARSTON, LIVERPOOL.

Royal Parks.—Grass Seeds.

THE COMMISSIONERS of H.M. WORKS, &c., are prepared to RECEIVE TENDERS for the SUPPLY of GRASS SEEDS for use in the Royal Parks, &c., during the year 1890. Forms of Tender, containing full particulars, may be obtained at this Office any day excepting Saturday between the hours of 12 and 3.

Tenders are to be delivered before 12 o'Clock noon on FRIDAY, the 20th September, addressed to "The Secretary, H.M. Office of Works, &c., 12, Whitehall Place, London, S.W.," and endorsed "Tender for Grass Seeds, Royal Parks, &c."

The Commissioners do not bind themselves to accept the lowest or any Tender.

H. W. PRIMROSE, Secretary.

H.M. Office of Works, &c.—28th August, 1889.

GENISTAS.—For Sale, a few thousands, in 3-inch pots, at 9s. per 100; fine bushy plants, in 40-pots, 5s. per dozen.

Cash with order to be made payable at High Street, Leyton.

T. BALDWIN AND SON,
Edith Nursery, Burchall Road, Leyton.

The Best Present for a Gardener.

VINES and VINE CULTURE.

The most complete and exhaustive Treatise on Grapes and their Culture ever published.

New Edition.

Price 5s., post-free 5s. 6d.

A. F. BARRON, Royal Horticultural Society, Chiswick.

HARTLAND'S GOLDEN QUILLED DOUBLE PERENNIAL SUNFLOWER.—Now is the time to ask for a sixpenny box of Specimen Blooms, to prevent any hitherto implied imposition, and get orders booked for November delivery. Within the entire range of hardy perennials. There is nothing finer. Its colour and floret-formation in appearance like an immense bloom of Madame Domage Chrysanthemum, or the very finest form of orange African Marigold. Quite distinct.

Plants at fall, 1s. 6d. each, with 3d. extra to cover postage.

W. BAYLOR HARTLAND, Seedsman, Cork.

CHARLESWORTH, SHUTTLEWORTH AND CO., Orchid Importers and Growers, Heaton, Bradford, Yorks, and 191, Park Road, Clapham, S.W.—Mr. J. CHARLESWORTH, having purchased the Business and Stock of Messrs. Shuttleworth, Carder & Co., 191, Park Road, Clapham, S.W., begs to inform his Customers that he has taken into Partnership Mr. E. Shuttleworth, (and his Manager, Mr. R. Eichel. The Business will be carried on both at Bradford and Clapham, and will Trade as Orchid Importers and Growers in future under the name of "CHARLESWORTH, SHUTTLEWORTH AND CO.," trusting for a continuance of your favours.

August, 1889.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s. 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

ODONTOGLOSSUM ROEZLII.

HEATH & SON

Have a fine Importation of the above just arrived. Prices on application.

SPHAGNUM MOSS,

picked to order, 5s. per sack.

ROYAL EXOTIC NURSERIES,
CHELTENHAM.

STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto, in large pots, 25s. per 100. Descriptive LIST free.

RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

GENUINE GARDEN REQUISITES, as supplied to Royal Gardens, &c.

SPÉCIALITÉ TOBACCO PAPER, the best and strongest in the market, 10d. per lb., 28 lbs. for 21s.

SELECT ORCHID PEAT, 8s. per sack, 5 for 35s.

SOILS and MANURES of finest quality, and GENERAL SUNDRIES. Price list free.

W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

CLIBRAN'S EUCHARIS MITE KILLER.

A CURE AT LAST FOR THIS DREADFUL PEST.

Eucharis, treated according to the directions, and grown with ordinary cultural care, become healthy in a short time, as a trial will convince. *Numerous Testimonials.*

Prices:—½ pint, 1s. 6d.; 1 pint, 2s. 6d.; 1 quart, 4s. 6d.; ½ gallon, 7s. 6d.; 1 gallon, 12s. 6d.

Ask your seedsman for it, or apply to

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

COCOA-NUT FIBRE REFUSE.—Newly made, the same as supplied to the Royal Horticultural Society. Truck-load of 2 tons, £1; free on to Rail, L. B. S. C. and S. E., £1 5s.; in Bags, 20, 15s.; 40, £1 8s. Cash with order.

J. STEVENS AND CO., 153, High Street, Battersea, S.W.

LEMON OIL INSECTICIDE.—The best of all preparations for easily, cheaply, and effectually cleaning Plants from Green-fly, Thrip Scale, Bug, &c. Follow the directions, and you will always use it.

Pint, 1s. 6d.; quart, 2s. 9d.; ½ gallon, 5s.; 1 gallon, 9s.; 4 gallons, 34s. Ask your seedsman for it, or apply to

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

Wasps and Flies.

Protect your Fruit from these pests by using

DAVIS'S WASP DESTROYER, Post-free, 1s. 9d. and 2s. 9d. per bottle, with full directions—a certain remedy.

BEGONIAS (a Specialty) are now in full bloom, and will continue until the frost. A sight once seen never to be forgotten.

B. R. DAVIS, Yeovil Nurseries, Yeovil, Somerset.



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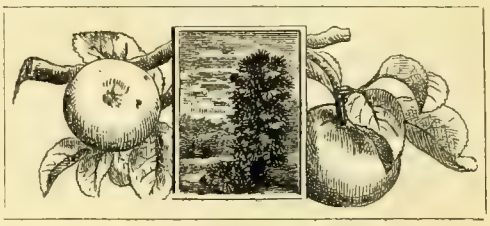
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THE

Gardeners' Chronicle.

SATURDAY, AUGUST 31, 1889.

ORCHID CULTURE PAST AND PRESENT.*

THE first tropical Orchid that became established in the hothouses of Great Britain seems to have been the Vanilla, which was known to Miller, the second edition of whose *Dictionary of Gardening* was published in 1768. Miller also enumerates several species of Epidendrum, some of which must have been known to him in a living state, for he says:—"The plants cannot by any art yet known be cultivated in the ground, though, could they be brought to thrive, many of them produce very fine flowers of uncommon form." Three species sent from America, which he planted with care in pots, and placed in a stove, produced flowers, but the plants soon after perished.

A few years later, Dr. John Fothergill brought home from China, among other plants introduced for the first time into British gardens, some Orchids, including Phaius grandifolius (Bletia Tankervilleæ), and Cymbidium ensifolium; these were cultivated by him prior to 1780. In 1787, Epidendrum cochleatum flowered for the first time in this country in the Royal Gardens at Kew, and E. fragrans in October of the following year. Seven years later, fifteen species, chiefly West Indian Epidendra, are recorded as being cultivated in the Royal Gardens, "in very great heat, and with fragments of half-rotten bark at their roots."

As a consequence of the political circumstances of the times, the first epiphytal Orchids received in England were brought from the West Indies, chiefly from Jamaica, by naval officers, and by captains in the merchant service, who gave no certain information respecting the habits of the plants and their environment in their native country beyond the bare fact that they grew on trees. They were thence believed to be parasites, like the Mistleto of our woods and orchards—a belief that became so firmly rooted that it held its sway for many years even after

* Read by Mr. H. J. Veitch, before the Royal Horticultural Society, June 11.

their true character had been determined by Dr. Robert Brown and Dr. Lindley. The prevalence of this belief was prejudicial to the progress of Orchid culture, for it induced attempts at cultivation that were necessarily futile. The editor of the *Botanical Register*, under tab. 17, Epidendrum nutans, which was first brought to England from the West Indies by Admiral Bligh in 1793, quaintly remarks that "the cultivation of tropical parasites was long regarded as hopeless; it appeared a vain attempt to find substitutes for the various trees each species might affect, within the limits of a hothouse."

Nevertheless, Orchids continued to be imported, and even in those days, when a voyage to or from the West Indies occupied two months, their extraordinary tenacity of life after removal from the trees on which they were found growing was observed.

Of the treatment the plants received we can only here and there catch a glimpse from the occasional notes that appeared from time to time in the *Botanical Magazine*, which had been founded by William Curtis in 1793. Thus, under tab. 387, Cymbidium aloifolium, which had been received from India by Mr. Vere, of Kensington, a few years previously, it is stated that this plant was placed in a pot of earth and plunged into the tan-bed of the stove, where it grew but did not flower. This species was also cultivated at the same time by Messrs. Greenwood & Wyke, nurserymen, at Kensington, who, instead of plunging the pot into the tan, placed it on the floor of the stove; it then flowered. From other notes we gather that the usual treatment of Orchids at this period was to pot them in a mixture of loam and peat, and keep them constantly plunged in the tan-bed of the stove. That they should soon succumb to such treatment seems to us but a very natural consequence; nevertheless, it seems to have been generally persisted in for many years.

The first fifteen years of the present century were overshadowed by the Napoleonic wars, which retarded every art that can only flourish in times of peace. Nevertheless, in the very throes of that tremendous struggle, the Horticultural Society of London was founded, and obtained its charter of incorporation in 1809. From that time horticulture may be said to have entered into public life, and to have received an impetus it never could have had from the isolated efforts of private individuals. Orchids, till then regarded more as curiosities than as subjects to be seriously taken in hand culturally, began to come more to the front, for the Messrs. Loddiges began to cultivate them for sale in their Hackney nursery about the year 1812; and about that time, too, or a little later, Dr. Roxburgh sent from India the first Vanda, the first Aërides, and the first Dendrobium that were seen alive in England. In the same year, too, Messrs. Loddiges received a plant of Oncidium bifolium from a gentleman who brought it from Monte Video, and who informed them that "it was hung up in the cabin without earth, and continued to flower during a great part of the voyage home;" a statement that was then regarded as a traveller's tale, and beyond the limits of credulity.

The "air plants," as the Vandas, Aërides, and Saccolabiums were then called, were a puzzle to the horticulturists of that time, and how profound was the prevailing ignorance of their true character may be judged from the following extract from the *Botanical Register* for 1817, under tab. 220, Aërides (Sarcanthus) paniculatum: — "Air plants possess the faculty of growing when suspended so as to be cut off from all sustenance but that derived immediately from the atmosphere. Plants of other genera of this tribe, and even of a different tribe, are endowed with a like faculty; in none, however, can such insulation be considered as the state of existence which suits them best, but merely as one they are enabled to endure, as a carp is known to do, that of being suspended out of water in a damp cellar."

To keep alive an air plant for any length of time, and to flower it, was regarded as a feat of extraordinary interest. The first who seems to have accomplished it was Mr. Fairbairn, the gardener at Claremont, who flowered Aërides odoratum in 1813. How he succeeded may be related in his own words: —"I put the plant when first received into a basket with old tan and moss, and hung it up in the Pine-house, where it was exposed to the summer sun and to the fire-heat in winter. A tub of water was placed near it, so that I could plunge the basket six or seven times a day, or as often as I passed it." Some years later the same excellent gardener flowered Renanthera coccinea for the first time in this country.

Towards the end of the second decade of this century, Sir Joseph Banks had devised one of the most successful modes of treating epiphytal Orchids then known, and which he practised in his hothouse at Isleworth:—"He placed the plants separately in light cylindrical wicker baskets or cages of suitable width, of which the framework was of long slender twigs wattled together at the bottom, the upper portion being left open that the plant might extend its growth in any direction and yet be kept steady in its station, the ends of the twigs having been tied together by the twine that suspends the whole to the woodwork of the stove. A thin layer of vegetable mould was strewed on the floor of the basket on which the rootstock was placed, and then covered slightly over with a sufficiency of moss to shade it and preserve a due degree of moisture." This was the first rude forerunner of our modern Orchid-basket, and the first instance I find recorded of moss being used for surfacing.

Loddiges at this time made their compost of rotten wood and moss, with a small quantity of sand. Their Orchid-stove was heated by brick flues to as high a temperature as could be obtained by that means, and by a tan-bed in the middle kept constantly moist by watering, and from which a steamy evaporation was arising at all times without any ventilation from without. Their method was, of course, imitated by probably all cultivators. To these hot steamy places Orchids were consigned as soon as received, and into which, it was occasionally remarked, it was as dangerous to health and comfort to enter as it was into the damp close jungle in which *all* tropical Orchids were then supposed to have their home.

The want of success that attended the preservation of the plants in such places for any length of time was supposed to be due to some peculiar difficulty in their cultivation, and it was resolved that an attempt should be made in the garden of the Horticultural Society to overcome it. A stove was accordingly set apart for their exclusive culture, and when subsequently Mr. (afterwards Dr.) John Lindley was appointed assistant secretary to the Society, the chief direction of it fell into his hands. "The first experiments were unsuccessful; the plants were lost as quickly as they were received." This led Lindley to inquire more closely into the conditions under which Orchids grow in their native countries, and which, if accurately ascertained, would, he believed, supply data for a more successful cultivation of them. The results of his inquiry, and the inferences he drew from them, are contained in a paper which he read before the Society in May, 1830. It is evident from this paper that the information he obtained was far too restricted, and held good only for a limited area; hence from such imperfect premises the conclusions could scarcely be otherwise than fallacious.

For example, Mr. William Harrison, a merchant residing at Rio de Janeiro, and who for some years previously had sent many fine Orchids to his brothers at Liverpool, informed him that in Brazil "they *exclusively* occupy damp woods and rich valleys among vegetation of a most luxuriant description, by which they are embowered." The word *exclusively* was unfortunate, for we now know that most of the finest of the Brazilian Cattleyas and Lælias occur at considerable elevations, and often in exposed situations. And Dr. Wallich, to whom we owe the first introduction of many fine Dendrobes, told him that "in Nepaul, the thicker the forest, the more shady the trees, the richer and blacker the natural soil, the more profuse are the Orchids." From such data Lindley concluded that high temperature, deep shade, and excessive humidity, are the conditions essential to the well-being of the plants, and he framed his cultural recommendations accordingly, including among them good drainage for the plants, which appears hitherto to have been generally neglected, but making no mention of ventilation.

So predominant had Lindley's influence at that time become in all matters pertaining to Orchids, whether as the chief botanical authority on them, or from the position he held in the Society, that the unhealthy *régime* of cultural treatment approved by him became, as it were, the only orthodox one, and was generally persisted in, in all its essential points, for upwards of thirty years after the publication of the paper just now mentioned; so that when thirteen years later Mr. Bateman formulated a course of cultural treatment for tropical Orchids in the introduction to his *Orchidaceæ of Mexico and Guatemala*, it differed but little from Dr. Lindley's recommendations, except the important direction to give the plants a season of rest. It is, however, only just to the memory of Dr. Lindley to add that, when later, as more correct information came to hand respecting the habitats of Orchids and their environment *in situ*, he was one of the first to note the fact, and to give cultivators a friendly warning—thus, in the *Botanical Register* for 1835, under tab. 1,697 (Oncidium ampliatum), we find the following remarks:—"It is well known that the most considerable part of the epiphytal Orchids is found in the greatest vigour in damp, sultry woods in tropical countries, and accordingly we endeavour, in our artificial cultivation, to form an atmosphere for them as nearly as possible that which they would naturally breathe in such stations. That this is attended with very great success is obvious from the numerous splendid specimens which are from time to time appearing in various collections. But it is sufficiently evident that, although this kind of treatment is admirably suited to a considerable number, there are others that grow most unwillingly, or scarcely survive, under such circumstances. If a great majority of epiphytal Orchids swarm in damp tropical forests, there is a considerable minority which live in an entirely different climate." And during his long editorship of the *Gardeners' Chronicle* he constantly published such items of information as came to hand that he believed would afford useful hints to cultivators.

But what were the splendid specimens he speaks of? Chiefly Brazilian Maxillarias, West Indian Epidendra, Cataseta, Mormodes, and the like; not the grand Cattleyas, elegant Odontoglots, and brilliant Masdevallias of our time; for such of these as were then imported were doomed to certain destruction in the hot, steamy, unventilated stoves to which they were consigned on their arrival in England, and to the temperature of which they were as great strangers as to our severest winter frosts. And thus perished, within a few months, most of the earliest introduced Cattleyas, Lælias, Odontoglots, and Oncids, but not without a protest from men who had seen them and other sub-tropical Orchids in their native wilds. So early as 1835 Allan Cunningham reported to Dr. Lindley how different were the conditions under which Australian Orchids grew in their native country from those to which they were subjected in the hothouses of England, and that they should soon perish in them seemed to him but a very natural consequence. Then followed Gibson, who had collected Orchids on the Khasia Hills for the Duke of Devonshire, Gardner on the Organ mountains, William Lobb on the Peruvian Andes, Mr. Ure Skinner on the Cordilleras of Guatemala, and Mr. Motley on the mountains of Java. These, one and all, gave utterance to monitory warnings against the folly of subjecting Orchids which naturally grew in a temperate climate to the stifling heat of an Indian

jungle. In fact, it was high time that such warnings should be given, for, as private collections were being formed and multiplied, and as high prices were being paid for the choicer kinds, epiphytal Orchids were poured into the country in a continually increasing stream, only too often to tantalise the purchasers with a sight of their lovely flowers and curious forms, and then to languish and die. For more than half a century England was, as Sir Joseph Hooker once observed, "the grave of tropical Orchids."

(To be continued.)

New or Noteworthy Plants.

PHAIUS PHILIPPINENSIS, *N. E. Br.* (*N. sp.*)

This novelty is interesting as being the first species of the genus Phaius, so far as I can discover, that has been recorded from the Philippine Islands, whence it has been introduced by Messrs. J. Veitch & Sons, who have kindly sent a plant to Kew.

The pseudobulbs are 1½ to 2 inches long, cylindrical, with 5 or 6 rings, where the sheaths have fallen from, dull green, procumbent and rooting, with the apex upturned. Leaves two to four to each growth, petiolate, the petioles 4 to 7 inches long, three-keeled on the back, deeply channelled down the face; the blade 6 to 12 inches long, 1½ to 2 inches broad, lanceolate acuminate, plicate, bright green. Scape about as long as the leaves, in the plant seen, arising from the axil of the lowest leaf, slightly compressed, slightly keeled on one side, the keel alternately on different sides of the stem with the different internodes, bearing four or five, equally distant, acutely keeled, tubular-spathaceous sheaths. Bracts not seen, deciduous before the buds have attained half their full size. Ovary an inch long, whitish with three green ribs; flowers 2½ inches in expanse; sepals and petals oblanceolate-oblong, subacute, the petals a little narrower than the sepals, all flat, spreading, and directed upwards, of good substance; white outside, reddish-orange-brown inside, with a narrow yellow edge. Lip 1 to 1¼ inch long, trumpet-shaped, with a truncate mouth; the margin recurved, crenate and more or less frilled, but not three-lobed inside, with some scattered hairs, the disc with three keels, the middle one reaching to the apex, the lateral keels much shorter and more elevated, converging at their apices; spur almost wanting, reduced to a very small blunt chin, about 1 line long; when the flower first opens the lip is white, with a very faint and delicate tinge of pink, marked inside between the keels, and on the sides with rosy streaks, afterwards the white changes to a pale yellowish hue, and the rosy streaks become fainter and less bright; column white, yellow at the base, a little longer than the minutely pubescent anther, which it partly covers, and having broad rounded wings; rostellum quadrate, light blue.

The distinctive characters of the plant appear to be that the lip is not three-lobed, but has a nearly truncate mouth with a slightly frilled, recurved margin; the emarginate apex is not in the least produced, and there is no spur. *N. E. Brown, Herbarium, Kew.* [The plant was exhibited at the last meeting of the orchid committee. Ed.]

Masdevallia coccinea, *Linden.*

A query has recently been addressed to me, as to what is Masdevallia coccinea, "a charming thing, with flowers as red as a soldier's coat?" On looking the matter up, I find the species to be involved in much confusion, which the present note is intended to clear up. I may also point out that a similar query was asked in these columns in 1884 (vol. xxi., p. 736), but was apparently never answered. There we read—"We cannot close our note on these plants without asking, what has become of the true M. coccinea? . . . Perhaps the original species has been lost, and if so there is another prize to be obtained by our keen Orchid importers."

Masdevallia coccinea is a species discovered and named in MSS. by Linden, and published by Lindley in 1846 (*Orch. Linden*, p. 5). It is No. 1262 of the collection. The specimen, which is preserved in Lindley's herbarium, bears a note to the following effect:—"This magnificent species grows on the ground on the southern slopes of the high mountains near Pamplona, at the height of 95,000 feet, flowering in April. Its brilliant flowers resemble at a distance those of the Bejarias, Vacciniums, and other plants of these lofty regions." It is identical with what was afterwards called M. Lindeni, André, and bears a note by Reichenbach to this effect. Lindley afterwards obtained from Warscewicz a coloured drawing and dried flowers of a species which he failed to distinguish, and therefore wrongly labelled M. coccinea. A few living plants from one of Warscewicz's sales appear to have passed into the hands of the late Mr. Rucker under this name, and for a long time were cultivated as such, though they appear to have been eventually lost to cultivation. Reichenbach, however, in 1854, correctly described this species as new, under the name M. militaris (*Bonplandia*, ii., p. 115). A third element of confusion now appeared. In 1865, a so-called M. coccinea is figured in Regel's *Gartenflora* (vol. xxv., p. 193, t. 870), but which is really M. ignea, Rchb. f.

A dried specimen of the true M. coccinea, Linden, probably passed into the hands of the late Professor Reichenbach, for it is correctly represented by him in *Xenia Orchidacea*, i., p. 197, t. 74, figs. 1 and 2, the shape and purplish-crimson hue showing it to be a brightly coloured form of what is now called M. Lindeni, André. The same author gave an account of the plant in these columns in 1868, p. 75, and the woodcut there given evidently represents the same plant. (See also n.s., xvi., p. 236, fig. 49, and xxi., p. 736, fig. 138, for reproductions of the same.)

The confusion is unfortunate, because its rectification involves certain changes which are unavoidable, unless the law of priority is to remain a dead letter. Thus, M. coccinea, Linden, must be retained, for M. Lindeni, André, which latter must be reduced as a synonym. And I suppose M. Harryana, Rchb. f., must be considered as M. coccinea var. Harryana, for I do not think the two can be satisfactorily distinguished. M. militaris, Rchb. f., must be retained for the plant which Lindley afterwards confused with the true M. coccinea. This is a very rare species in gardens; one or two plants are known, but I have not seen living flowers. It seems to be a shy bloomer for some reason, but the colour is represented as exceedingly brilliant. M. ignea, Rchb. f., is very closely allied, and may yet prove to be a variety of the same, for the dried flowers are very similar, though not quite identical. In any case, M. coccinea, Regel, belongs to M. ignea, which is a very handsome and free-flowering species. It will thus appear that M. coccinea is not a lost plant, but one whose identity has been unfortunately masked by the confusion here pointed out. *R. A. Rolfe.*

NEW ZEALAND FLAX.

This most useful fibre-producing plant wherever tying, bundling, and hauling have to be done, has, I notice, and will continue, I am confident, to be the subject of continuous discussion. Your correspondent "R. A." is making inquiry about it at the present time (p. 200, August 17, 1889), and others will follow suit. Fibre-producing plants are and will continue to be in request; the textile characteristics of this, in particular, make it the subject of attention on the part of those who are interested in the manufacture of cordage and textile fabrics, in their great variety of forms and innumerable uses.

Experience proves your opinion to be well founded as to its not being a remunerative crop to grow for manufacturing purposes. The difficulties attending cleansing the fibre are not so great as is generally supposed; boiling it in water removes the gluten; careful combing makes it soft and pliable. I dare say especial machinery may be requisite for the preparation of large quantities economically, and, when prepared, it is not comparable to Hemp for durability, although in a fresh or half-dried state it is the stronger fibre of the two, and will bear the greater strain. It will not bear exposure, and is subject to decay, when it is so friable that it is easily broken. Ropes manufactured from it, subject to alternating heat and moisture, cannot be depended upon after they have been in use for a short time.

But it is not as a textile or manufacturing plant that I regard it as most useful. I am a practical gardener and farmer. It is more as an useful and necessary plant on the farm and garden that I regard it. Manufacturers will, of course, look at it from a different and equally legitimate point of view, and I trust they may realise their hopes and wishes.

Grown in a moderately rich soil, damp in preference, Phormium tenax produces leaves from 3 to 6 feet long, which may be cut for use at any period of their growth. These leaves may be stripped in bands as long and as strong as may be required, and are useful for tying plants, trees, vegetables, Wheat, Hay, faggots, &c.; I use them for all these purposes, and find it very convenient to have them always at command.

The plants are hardy, resisting many degrees of frost without injury. The old leaves do not suffer if allowed sufficient room and air to prevent excessive moisture from hanging about them during the winter months, which causes them to rot.

Compared with Russian matting and raffia, the leaves and ties are stronger and more economical in use, as there is less waste. It is self-evident that it is cheaper to grow than to buy; and a perch of ground devoted to the purpose produces a large supply, and lasts many years when established.

It is easily propagated, either from seed or the division of the crowns. The plants, in a young state, require care, but when sufficiently strong for planting out, they grow rapidly. The plants are impatient of removal, and should be planted in some spare corner, avoiding the drip of trees. It grows quite as freely in the shade as when fully exposed. I forward you specimens of the green leaf and the dressed fibre. *C. B. S., Jersey.*

HARDWICKE HALL, BURY ST. EDMUNDS.

This fine old mansion, the seat of George Gery Milner-Gibson-Cullum, Esq., lies about a mile from the town of Bury St. Edmunds, the approach being off the main road, by the side of which the handsome entrance lodge is situated, and leading on from this the carriage-drive sweeps, in graceful lines, through the well-wooded park and along under fine spreading trees up to the Hall. The flower garden is on the other side, and is bounded by a haha, so that the eye runs across the lawn without seeing any dividing line from the park beyond, or distinguishing where one ends and the other begins. How much better is all this than the masonry, with its balustrading and stone-ware or terra-cotta so often witnessed; and it is satisfactory to think that we are again going back to the more natural style in the art of laying-out grounds, and eschewing the stone yard. On the lawn there are several arboreal ornaments, a grand old Cedar of Lebanon; a deep, richly-coloured Copper Beech, and a magnificent Wych Elm. The Beech referred to stands high, on raised ground, which adds to its importance, and shows it off to the greatest advantage. The flower garden lies to the left of the mansion, and the beds are very large and cut out on the turf, so as to leave plenty of grass between, which forms a suitable setting to the gay plants, with which the beds are well filled The glare of colour is also toned down by avenues or lines of Irish Yews, and there are also rows of the rich golden, which contrast well with the sombre hue of the first-named. Another feature in the flower garden is the Roses, Clematis, and Honeysuckle on tall iron arches, pillars, or rods, up and over which these plants have climbed and clothed with rich beauty.

The houses are mostly lean-to's, and form almost a continuous range, that are approached from the Hall through a conservatory and corridors. These two latter are well furnished with suitable plants, the conservatory having roof climbers, Tacsonia Van Volxemii being very effective and showy; the corridors have Camellias and Heliotropes, and one has Cereus speciosissimus in pockets on the back wall, which looks very quaint, and affords pleasing variety.

The interior of the fernery is built up for most of the plants to be planted out and grown naturally, and trailing about is a huge Dolichos, the leaves of which and its whole contour are most striking. In the adjoining house there are some fine old Brugmansias, and on the back wall Citrons and Camellias are trained, while overhead along the front some Vine rods are running longitudinally, and yielding a good crop of Grapes. Peaches are planted and grown on trellises side by side at a distance, to afford full light and sun between, instead of under the roof in the usual way, which gives more surface, and no doubt answers well in houses where there is little wood to obstruct the solar rays.

The vineries are in full bearing, the borders being chiefly outside, and the fronts of these are supported by a wall, along in front of which are numbers of Tea Roses and plants of Helleborus niger, which are looking the very picture of health. It is generally supposed that these Hellebores require shade, but here they are fully exposed to the sun, and must afford a fine lot of bloom during winter, and this without more protection than the situation affords.

The pleasure-ground at Hardwicke is one of the finest in the kingdom, as of late years it has been added to and much improved by Mr. Fish, whose taste and ability in landscape matters is well known. The first point of interest one comes to, on going from the lawn, is the Yew walk, which is in a straight line, and fine plants of Taxus baccata are growing along each side, and meeting so as to form a canopy with their branches overhead. From this walk we pass on to the new part, which used to be the orchard, but which is now transformed; broad expanses of turf have been laid, and bold clumps of shrubs formed, with raised borders in front, and in these varied herbaceous and other suitable plants are making a very fine show. Conspicuous among the shrubs the dark-leaved Hazel Nut stands out, and this, with the variegated Acer here and there, affords rich contrast, and the evergreens are quite lit up by the big bushes of Œnothera biennis growing in front. Passing on, we now come to the Memorial Avenue, which has recently been formed, and is planted with Cedrus atlantica by eminent men who have visited the place. In front of the trees are low shrubs, and near the line of grass down the middle are rows of Azalea mollis, which, when in bloom must make a magnificent show. Turning from this avenue, or looking to the left in going to it, the view is most charming, as the country beyond has been opened up, and miles of picturesque rolling ground, with handsome trees, lies fully before one. In the Pinetum, one of the most conspicuous trees is a Cedrus atlantica, which, though not of extraordinary size, is unique in colour, the hue being remarkably rich and glaucous, as the best varieties of this Cedar are when they get age, at which period the Lebanon looks dull and poor beside them. The next to command notice is Sequoia sempervirens, a perfect specimen, standing at least 70 feet high, and clothed down to the ground with healthy spreading branches and foliage. Near by is a Wellingtonia, 65 feet high at least, and some 9 to 10 feet round the trunk, and several Abies Douglasii, over 70 feet. Abies Pinsapo, Picea morinda, Pinus insignis, Cedrus deodara, and Araucaria imbricata, are all in fine condition, and show how well the soil and shelter suit them. Adjoining the Pinetum is the "Dell," or hardy fernery, which was once a chalk-pit, but has been skilfully handled and arranged by carrying walks down and about it, and studying it with suitable plants, that it is now an interesting spot, and forms an attractive addition. The kitchen garden is a walled-in enclosure, and lies beyond the pleasure-grounds and Pinetum, through which flowering walks lead to it.

The fruit trees are mostly pyramids and cordons, and both and all show the unfavourableness of the season by having but little fruit on them, but Gooseberries, Currants, and Strawberries have been plentiful and good.

Vegetables are in great abundance, and Asparagus is grown in beds with pigeon-hole brick-sides, for the purpose of forcing the plants without taking them up. This exhausts my notes made during a very hurried visit. *J. S.*

DAFFODIL SIEVE.

The illustration, fig. 32, shows in the foreground Mr. B. Hartland and some workmen engaged in lifting and sorting the bulbs of Daffodils in his nursery at Temple Hill, Cork. The implement is of simple construction, and in form a combination of hand-barrow and cinder-sifter, the frame of wood and the sieve of wire, the bulbs when dug up in dry weather with a six-tined steel fork being shaken lightly about by hand, the adhering soil falling through, and all the bulbs remaining on the sifter. Where much ground has to be gone over, the work would be much expedited by the use of several such sieves. Mr. Hartland, in the note accompanying the photograph, stated that the foliage of Ard Righ Daffodil had quite decayed by May 20, and lifting began on the 27th of that month. He is standing on the left, with a bunch of the May flowering double white Narcissus in his hand. The picture shows parts of Mr. Hartland's nursery, with growing crops of Callas, Peas, Potatos, &c., and the matured foliage of various Narcissi. The house, ivy-covered, it will be observed, is pleasantly situated, besides affording a view from its windows of the various operations going on in the nursery.

HARDY PLANTS AT KEW.

It would be impossible to visit the hardy plant department at Kew on any day in the year without seeing something of interest, or new or rare, and particularly now that the rock garden has become so well furnished; and although I cannot regard the end of July as the best time for observing the greatest number of plants in flower, yet there were plants in flower at that period for which there is space in many of the best collections of hardy plants. Meconopsis Wallichi is one of these, and as there seen, 5 feet high, it has been a thing of beauty for some weeks past, its stately heads of sky-blue flowers being produced in great profusion, always rendering it conspicuous. It should be treated as a biennial, and grown on quickly from seed, ultimately planting it out in groups in cool, rather moist spots, in sandy or peaty loam, if possible.

Another attractive rockery plant is Polygonum affine or Bruononis; the only condition essential to its proving its successful culture is that of space to develop. It is very telling in the mass, when hundreds of flower-spikes of rosy-lilac are visible. In dry sunny spots, and rambling over rocks, this plant is perfectly at home, and it is well suited for a front-row plant in a border; but, unfortunately, not a tithe of its beauty is seen in this position.

In boggy nooks were Spiræas of the palmate section, both crimson and white. I confess to being somewhat disappointed with the latter; for, though a distinct variety, and a good white, there is nothing attractive about it, nothing that can ever make it half so popular as the type has become.

Monarda didyma was making a good show in company with these, while in a similar spot the vermilion spikes of Lobelia cardinalis were displaying themselves to advantage.

Among those with handsome foliage the Acanthuses were conspicuous, several kinds being represented by large clumps. Scolymus grandiflorus, though a little coarse for a choicer border, is nevertheless a fine plant for shrubberies, where its yellow heads would produce a good effect. Among the more select plants were Gentiana septemfida var. cordifolia, with rather small light blue flowers, densely bearded internally; and Campanula grandiflora pumila, a very fine herbaceous perennial, which all growers of hardy plants should obtain if they have it not. This plant is of Japanese origin, is rather more than a foot high, and has numerous stems thickly studded with flowers of a deep blue colour. Alstrœmerias were on the wane, but the large number of spikes still standing showed how rich the harvest of flowers had been. These are among the finest of hardy perennials, and their requirements are a good depth of sandy loam, rather rich; 3 feet deep is not any too much; plant 6 inches deep in October, giving plenty of sandy grit about the tubers; accord them a position with a southern aspect, where disturbance for many years will be unnecessary, and they will be the admiration of all. These plants are rather slow to establish, it is true, though few perennials produce better results when they once become so. Among Primulas, P. suffrutescens, a Californian species, is remarkably distinct and free-flowered, one also that may be increased with less care and loss than many others of the genus, and of which those who cultivate them are well aware. In flower the plant under notice partakes of the colour of P. Rusbyi, which is of a purplish-violet hue. It is so very distinct in habit that it might readily be mistaken, but for the presence of its flowers, for a form of Iberis gibraltarica; another distinct characteristic is its free growth, and the freedom with which it emits roots from the under surface when pegged to the soil, and, therefore, it is not easily increased, but a handsome patch is soon formed. Another striking plant is Podophyllum pleianthum, from Hong Kong, with blackish crimson flowers; it is new, and was flowering for the first time. It will certainly, by reason of its handsome foliage and flowers, prove to be an acquisition, and especially if it should prove as hardy as P. Emodi and P. peltatum, both of which produce very handsome scarlet fruits; these are excellent plants for a sheltered nook, and should be given sandy peat. *J.*

PARIS.

THE GARDENS OF PARIS.

The following notes are written to give an idea of what there is to see in the places mentioned, and to show how they may be visited, one with another, without loss of time. It is possible that enough may be said to determine or set aside a visit. They may supplement the use of plans and guides, but it should be said that they are written roughly and in great haste to assist those who are about to go over the ground. If the Rouen route be chosen, I recommend a visit to the Jardin des Plantes of that town, especially for what it contains in the herbaceous department. It is on the opposite side of the town from the station, over the stone bridge across the Seine, and trams run after 8 o'clock. If the stop should be made in the morning, much of interest in the town may be seen, and Paris reached the same evening. The herbaceous ground, or l'Ecole de Botanique, as it is called, is made to receive during summer a variety of plants from the houses, whether fit or unfit for the exposure, and this method of showing relationship, known also in some other continental gardens, is assisted sometimes with labels alone, or with plants that could not possibly exist on the spot. Though this may be, as I think, a mistake, and even misleading, it detracts nothing in interest from the plants that are grown. I found many that are quite uncommon, and among them not a few that are attractive and ornamental. Annuals are well kept up, and some of the genera are exceptionally well represented. Various kinds are of interest in representing the French

flora. Out of numerous notes I am at a loss to specify. Gomphrena aurantiaca and Cuphea miniata struck me as among the prettiest of annuals. Richardia albo maculata forms a fine clump, and appears to be perfectly hardy. Among the aquatics, Alisma grandiflora (Echinodorus grandiflorus), is one that we do not grow, though I found it in several French gardens. Echinops græca is very distinct and worth having, but examples of this kind are numerous. Sesamum indicum, with tubular white flowers and interesting processes at the base of each leaf, was doing well in a little greenhouse of its own, and decidedly pretty. A new range of iron houses was built five years ago, and, as pointed out by M. Joly, on the plan recently adopted at Cambridge, but the idea is not so well carried out. The houses contain various plants of interest. Æchmæa Luddemanniana was remarkably pretty, with a panicle of

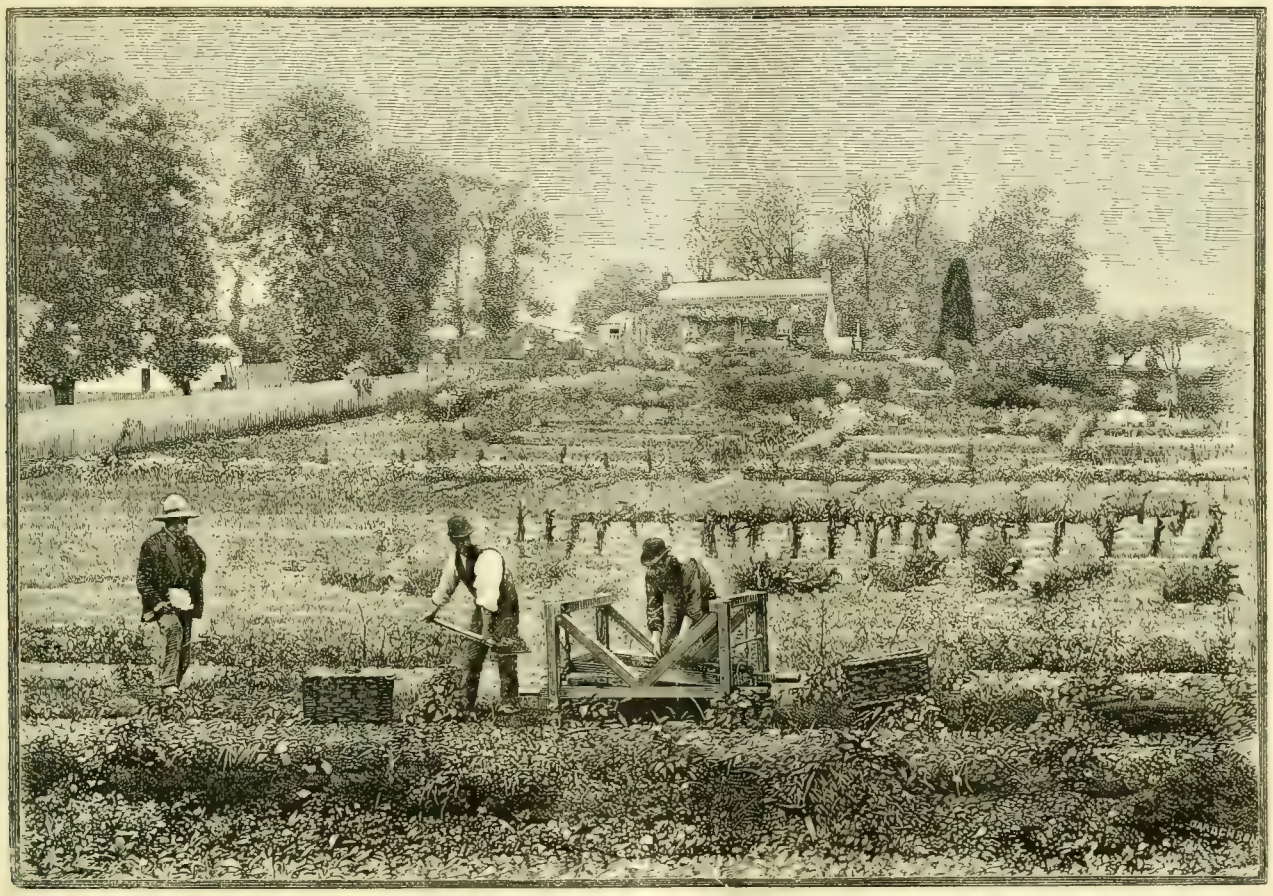


Fig. 32.—Lifting daffodil bulbs in Mr. Hartland's nursery. (see p. 240.)

blue berries; and among Begonias nothing was ever more effective than B. corallina, growing 8 or 9 feet high against a wall, and laden with scarlet flowers. A portion of the garden and some of the houses are devoted to decorative work, and there are some good features of this kind. In visiting the houses, it must be remembered that the breakfast-time is from 11 to 1 o'clock, when it may be impossible to gain admission. But the herbaceous ground, though carefully fenced in, is not shut up. It is said that the French public are more destructive than the British, and therefore the fence exists.

The Jardin des Plantes.

Arrived in Paris, the botanist-gardener, at least, will think first of the Jardin des Plantes, the French Kew, where all horticulturists are certain to find interest. Improvements have been made since I saw it last, but, for the credit of French taste—often more perfect than ours—it requires entire reconstruction, with more space. It is easily reached by omnibus or tram from almost any point, and boats on the Seine are both rapid and convenient for stations along the banks. Again, it is necessary to remember that the breakfast time is from 11 to 1 o'clock, when almost everything worth seeing is shut up, and, to save repetition, I may say that the same hours obtain in all the municipal gardens. A morning may be recommended for general inspection, in order to see what there is to study in detail, after which all available time may no doubt be occupied. A feature of fresh interest will be found in the new Winter Garden, quite recently planted and formally opened to the public. It is of the ornamental order, built on a heavy basement of stone buildings, designed by the official architect. In it a novel feature may be found in the pipes, which are provided with flanges or wings, by which the radiating surface is largely increased. At the end is a successful piece of rockery, and before it is a fine group of choice Tree Ferns. All the houses require careful inspection for the interesting plants they contain. Fine branching specimens of Vellozia plicata, the stems chiefly formed of overlaid roots, were most charming from a botanical point of view, though the flower, which resembles that of a Crinum, must add beauty to these curious plants. Various fine Palms are worth particular note. Trachycarpus Griffithi is now in flower; a magnificent Pritchardia filifera has been brought from the South of Europe; Brahea Roezli is striking and new to me. I found a Chamædorea, not at all unlike a Sobralia at first glance, with numerous slender stems, bearing furcate leaves, and growing about 5 feet high; it is called C. fragrans, and is probably the plant so named by Martius, but it is not Morenia fragrans of Ruiz and Pavon.

In the sunk garden, Xanthoceras sorbifolia, the parent of all we have, is bearing numerous fruits; so also is Pistacia vera. Rosa Haryi seems here to flourish perfectly. Less known than the historic Cedar of Lebanon, on the herbarium side of the garden, is an old Robinia Pseudacacia, said to be the parent of all first planted. It was planted in 1636 by Vespasien Robin; and now the old trunk, in its decay, is so mended with mortar and cement, that little of it can be seen; but there is life in the branches, and it may last for years. In the herbaceous ground, various points of interest will reward a careful inspection, and as it is difficult, in a few words, to give even a small idea of such a garden as this, I recommend, in short, that no part be missed.

Having seen, at the Herbarium, some of the really wonderful plants collected by the missionary Delavay in the province of Yun-nan, I was greatly interested to learn that a number have been raised from seed. Various Rhododendrons and several good plants have thus been introduced. The Primulas and Rhododendrons have already received notice in the *Gardeners' Chronicle*, but without seeing the specimens it would be almost impossible to conceive the striking character of some of the species. The extreme richness of the comparatively limited district from which the specimens were gathered is shown by several new and beautiful species of Cyananthus; by a remarkable Musa, M. lasiocarpa, only 1 foot high, and said to present the appearance of birds sitting on the rocks; and to give one more instance, by Thalictrum Delavayi, which has showy flowers with rosy-coloured sepals.

Close to the Jardin des Plantes, at No. 12, Rue Cuvier, is the Botanic Garden of the Faculty of Medicine, superintended by the well known *savant*, Prof. Baillon, and which, though small, is of great interest. Here, for instance, is a plant which the Professor believes to yield the true Mate or Paraguay Tea, quite distinct from the plant known as Ilex paraguayensis. The garden contains some very interesting economic plants, and here some time ago,

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Coffea liberica was in flower. There are fine specimens of Citrus trifoliata, which often forms a handsome shrub about Paris; and of Cedrela sinensis, which delights in the poorest soil. Among other things, there is an interesting set of hybrid Rhubarbs crossed between R. Bollingiana and R. officinale. Sarcococca pruniformis here is quite hardy. *R. J. L.*

(To be continued.)

Orchid Notes and Gleanings.

MR. MEASURES' ORCHIDS.

Many rare species are in flower in this fine collection, in addition to the show of Odontoglossums and other things met with in most places. The high state of culture to which the plants are brought at the Woodlands present things at their best, and many plants which are not in good repute, by reason of their being difficult to grow, appear here in quite another aspect. Among these may be noted a fine specimen of Eulophia guineense, with a spike of numerous, large, bright pink flowers a yard high; Cattleya Schroderiana, a rare and probably natural hybrid, with flowers nearly as large as those of C. Mossiæ; C. Schofieldiana, of extra merit; C. velutina, and C. Eldorado Wallisii, with eight fine white flowers; C. Hardyana, the largest known specimen; C. Dowiana aurea, with five flowers on a spike; some large masses of Lælia crispa; Saccolabium Hendersonianum, S. cœleste, with six spikes; Brassia antherotes, and other rare and handsome species. Among the Cypripediums the most unique was the Spicerianum cross, C. Seegerianum ×, which has the dorsal sepal as showily marked with crimson, on pure white, as the favourite, C. œnanthum superbum; C. Morganæ ×, C. Harrisianum brunneum ×, C. Curtisii, C. conchiferum ×, C. calophyllum ×, C. calurum ×, C. marmorophyllum ×, C. polystigmaticum ×, and about two dozen other rare species and varieties are in bloom, one of the most attractive being a large mass of the true C. Sedeni candidulum ×.

Not until quite recently did Orchid growers, by the aid of larger importations, discover the wonderful beauty and variety to be found in the section of Orchids named Lælia elegans. Quite a show of them is to be found in the extensive collection of R. H. Measures, Esq., every year at this season, and each year adds new beauties to these favourite flowers. In addition to the fine L. e. nyleptha previously illustrated by us, many others, of what is generally denominated the "Turneri" class, are in flower. L. e. Tautzianum has glowing, richly tinted flowers, with most ornate crimson-purple lip; L. e. Houtteana has the front lobe of the lip projecting and flat, suffused with violet; L. e. melanocheilos and L. e. hæmatocheilos are two superb varieties, the general appearance of the former being like the fine L. e. Blenheimensis, but the flowers, which are uniformly of a soft rose, are thicker and more wax-like in texture; L. e. blanda and L. e. incantans have yellow petals and intensely rich crimson labellum; L. e. Morreniana is a superb form, a great improvement on that originally known as L. e. Turnerii; L. e. Measuresiana, L. e. prasiata, L. euspatha, and many others, are still in flower, and likely to last some time yet. Those who wish to see these fine plants in perfection should take the opportunity.

Lælia superbiens Quesneliana.

This variety requires to be treated in a similar manner to Lælia superbiens. It is a strong-growing plant, and will thrive either in a basket or in a pot, suspended, if possible, about 2 feet from the roof-glass, where it may obtain full exposure to the sun's rays. We have also grown the species on a large block or raft of wood, but when treated in this manner, more attention is required to the supply of moisture during the season of growth, and we much prefer the pot or basket system. Fibrous peat, from which all the fine particles have been shaken (a process which is easily performed when the peat is dry), is the material this plant delights in having about its roots; to this may be added, with advantage, some nodules of charcoal, which help to keep the material sweet and in free and open condition. This is a point of the greatest importance, as these plants do not like anything stagnant about their roots. The pot or basket must be well drained, and should be filled three parts up with some charcoal or broken potsherds, whilst the soil should be elevated in a cone-like manner above the rim of the pot. Upon this the plant should be placed, thereby enabling the roots to work either inside or outside, the latter being more congenial to the requirements of the plants. It requires an abundant supply of moisture to its roots during the time of active growth, but when dormant the quantity must be considerably reduced; indeed, just sufficient to maintain the pseudobulbs and leaves from shrivelling is all that is necessary, but should they be overdried, it frequently requires a considerable length of time to restore them to a healthy condition. When the flower-spikes begin to appear, a little more moisture becomes essential, and the quantity should be increased as the spikes advance.

The Cattleya-house suits this plant well, and although Mr. Skinner records the fact that hoar-frost was on the ground when he found the species first, it has always thrived best with us under cultivation in a warmer temperature. Mr. Skinner also observes that where the plant is most numerous, the finest examples existed in situations sheltered from the north wind. It also enjoys all the sun and light it is possible for us to give it, but as it must be remembered that all our plants are under glass, and with a considerably reduced circulation of air to the open atmosphere, it will be necessary to shade lightly from the hottest sun in the height of summer. Treated in the above manner there is little to fear, and the plants will bring forth their showy blossoms in due season. "*Orchid Album*," *June*, 1889.

Lycaste costata.

The treatment we have found this plant to thrive under is to grow it in the cool-house; but the warmest end of the Odontoglossum-house should be selected for it. It should be grown in well-drained pots, and the best material to use for potting is a mixture of fibrous peat and sphagnum moss. During the growing season the plant enjoys an abundant supply of water. This must, however, be considerably reduced when growth is completed, giving at this time just sufficient to keep the bulbs and leaves in a healthy condition. The flowers begin to appear soon after growth is completed, when a slight increase of the water supply will be advantageous. "*Orchid Album*," *June*, 1889.

Renanthera coccinea.

It may interest many readers of the *Gardeners' Chronicle* to know we have a plant of the above in flower at the present time. When I took charge of the gardens here, three years ago, the plant was about 18 inches high, and it now stands 7 feet in height, with healthy foliage down to the rim of pot. It carries one fine spike of 100 beautifully expanded flowers. The plant has been grown at the cool end of one of our plant stoves, and the treatment afforded seems to have suited its requirements. The last notice in your paper of it having flowered, was by my old respected master, Mr. Reid of Possingworth, Sussex. *D. Cromble, Powerscourt, August* 20.

Phaius maculatus.

This plant is easily grown into a good specimen, and it requires only the ordinary care bestowed upon stove plants. It enjoys an abundance of light and sunshine, yet as its leaves are somewhat thin, it should be shaded through the hottest part of the day in summer, in order to preserve its foliage intact, for the leaves present a very bad appearance when scorched. If the plant is grown with other Orchids, it will thrive best at the cool end of the East India-house, or the warmest end of the Cattleya-house. It is a terrestrial plant, and should be potted accordingly; the soil we have found it to thrive best in is rough fibrous peat, good turfy light loam, and sharp sand thoroughly incorporated. The drainage must be good, and should be covered with a layer of sphagnum moss, to prevent the mould running into and choking it. A liberal supply of water is necessary during the growing season, which must, however, be considerably curtailed during winter, when, although much less is necessary, it should never become quite dry, or the leaves will suffer, and the plant become disfigured. At the time the spikes begin to appear the supply of water may be increased, as these require strength to develop their beauty. When the blooming season is over, the plant begins to renew its growth, and this is the best time to repot; if this is not necessary, the upper portion of the old soil should be removed and renewed. "*Orchid Album*," June, 1889.

Dendrobium MacCarthiæ.

This Ceylon Orchid has such noble flowers that it is a pity it is not a better grower, or rather that its peculiarities are not better understood. A fine form of it is now open in Mr. Sydney Courtauld's collection at Bocking Place, Braintree. The flowers on this plant are 4 inches across, white; the sepals and petals delicately tinged with lilac; the base of the slipper-like labellum is violet-purple on pure white; the front portion is tinged and veined with rose.

Odontoglossum Schroderianum.

This species requires similar treatment to O. Pescatorei, and those of its class which come from about the same altitude. Many of these species grow at different altitudes in their native countries, and it would greatly assist the cultivator at home in determining the exact position in which to place the plants, if collectors would give strict records of the conditions under which the plants exist, the altitude at which they grow, and the conditions of the atmospheric surroundings. It will thus be seen that no one can successfully cultivate plants without exercising care and forethought, bestowing every needful attention at the proper time, and in any case of failure a remedy should be applied at once, for procrastination—that "thief of time"—is also the cause of many failures in Orchid-growing, which, if taken in hand in time, might have "led on to fortune." Again, many people who have been successful growers of plants often treat them in an indifferent manner, and then express surprise if the plants fail, or are not to be found in first-class condition; indeed, this system of neglect is too prevalent with superficial observers; but let it be ever kept in mind that plants always require care and attention to keep them healthy, presentable, and in a proper state of development. "*Orchid Album*," *June*, 1889.

Notices of Books.

Darwin's Journal.

A peculiar interest attaches to this work. Few who read it when it first appeared, in 1839, could have foreseen what is so obvious now, that it contains the germs and much more than the germs of the now generally accepted doctrine of evolution, or the modification of species in course of time by means of an innate power of adaptation to varying conditions. It seems no more strange now to consider a species as derived from some pre-existing species of slightly different aspect and attributes than it does to note the descent of a child with characteristics derived from both parents, but altered by circumstances. The descent and the change are obvious; in the one case they are less so than in the other, because the period of time in which they have occurred is inconceivably great, the greater part of the record has been lost, and what we have is only imperfectly deciphered. The story of the five years travel is still full of interest to the naturalist. The retrospect, showing the march of improvement and civilisation as witnessed fifty years ago, and consequent on the introduction of

Christianity into the South Sea Islands, and the progress which even then Australia had made, is most interesting; the more so as the progress must have been far more pronounced since that time, in spite of the opinions of Lord Tennyson to the contrary. Prefixed to the present volume is an excellent portrait of the author in later days. The work is issued by Mr. Murray uniformly with other of Darwin's works published by him, and many naturalists will be thankful to the publisher for the opportunity of making the set complete.

Journal of the Bureau of Agriculture. Adelaide.

The circulation of practical information calculated to be useful to agriculturists and gardeners has largely increased of late in our colonies, and, inasmuch as the leaflets and bulletins presumably supply exactly what the cultivator requires, the benefit should be great. A few circumstances, however, stand in the way: one is the inertness and disinclination of the cultivators to do anything out of the ordinary routine, or even to read with attention what is put before them; and another is the defective education of many even experienced cultivators. It is quite astonishing to note how little business men of standing often know of the general principles of their business, and how little observation and reflection are called into play outside a very limited range. Although experience is the best teacher, yet great is the loss from the inability to turn that experience to full account, especially when new conditions and altered circumstances come into play.

BEDDING VIOLAS.

The season of 1889 has, taking it all round, been a good one for Violas, and here at Solihull, which is close to Birmingham, they have for a long time been, and still are in great beauty; and great headway has this year been made in convincing many persons that the Viola is not only an easy plant to grow, but is also a decorative plant. Early autumn planting is recommended, for late spring planting so often ends in failure and disappointment. Well-manured ground, where the soil is light and poor, and moderate manuring when the soil is stiffer and more retentive, and planting in October or November—the earlier the better—so that the plants may get a firm root-hold before winter sets in; a slight mulching of light material about the plants—these are the conditions by which success is almost assured.

With me, Violas are still giving masses of flower, although they suffered somewhat during six weeks of very dry weather and hot days, but they never gave out, and since we have had rain occasionally, they are as bright and beautiful as ever. I not only grow a large collection, but flowers of kinds I do not grow, and other people's seedlings are frequently sent here for my opinion. Many of these are no doubt very showy *en masse*, still I am rather hard to please, for in all self colours, such as yellows, whites, blue, lilac, lavender, &c., I oppose any blotch or rays in the centre of the flower, unless these markings are almost imperceptible.

White Varieties.—We have no markings whatever in Countess of Hopetown, a sterling decorative variety, which it will be difficult to displace, and in Virginalis, two superb whites; also in Mrs. Gray, a very useful free-growing white for masses, which is almost free from any central markings, although in hot weather the snow-white colour of this variety becomes flushed with lavender, but even in that state it is a most pleasing variety, and is sweetly scented. Mrs. Smith is another excellent bedder, snow-white, with very faint markings, and, like Countess of Hopetown, of close compact habit; Virginalis, like Mrs. Gray, is a strong grower, and wants room; Marchioness of Tweedale is very like Virginalis, and I discarded Pilrig Park long since.

In *yellows*, Ardwell Gem stands in the front rank, pale yellow or straw, with faint yellow markings, of compact dwarf habit, good constitution, and a great bloomer. Golden Queen of Spring is of dwarf compact habit, good constitution, and is a thoroughly good useful bedder—colour deep yellow without markings. Bullion is a grand deep yellow, with faint markings, and grows stronger than the two preceding varieties; but, after all, clearness of habit, combined with a freedom of blooming and good constitution, is what we want. Long-jointed varieties, which grow somewhat wildly, are objectionable. Golden Prince Improved is another valuable bedding yellow, of a light shade, and with very few rays—a closer habit of growth than some sorts, good constitution, and a very free bloomer. Golden Prince is another very useful yellow, and has more of a varied centre, and is paler in colour than Golden Prince Improved, and is rather a strong grower, but fine for large beds. Goldfinder is a newer variety, of Ardwell Gem habit, pale yellow, with a distinct margin of deep lilac, and free from central markings. It is a pretty and distinct variety.

In *Purples*, Old Cliveden Purple is still good, but is rather long jointed, still a very free bloomer, and invaluable for large masses; but in Cliveden Purple compacta we get a more robust, closer habit, with deeper coloured flowers of rich violet-purple, and very free blooming. Queen of Purples and Queen of Violets are both seedlings from Cliveden Purple, but with much closer, compact habit of growth, and very free bloomers. For small beds or in ribands a compact style of growth is preferable.

In *Blues*, Dean's True Blue must take the place of honour, as it is of dwarf compact habit, very early and continuous in flower, very free in blooming and of good constitution, and blue in colour and a first-class bedder. In Archie Grant we have a very fine blue shaded violet, and it has a good deal of the Pansy breed in it; it ceases to flower in July and onwards. Still, it is a fine variety. Holyrood is another with the Pansy breed in it, fine and attractive early in the summer, but ceases blooming when we get into July. Owen Cameron is very like it. As a rule, all bedding Violas which have the cross breed of the Pansy in it, such as Holyrood, Archie Grant, Lord Darnley, Owen Cameron, and others of that habit are not such early blooms as such Violas of the Viola type as Mrs. Gray, True Blue, and others. Next to True Blue, for general usefulness and attractiveness, I place Queen of Lilacs, having light blue lower petals, with deeper coloured top petals, and of good habit—very free blooming, early, and continuous; and it has a decided blue shade of colour in it, and stands hot weather well. This variety takes the place of Blue Bell, as it is more blue in colour, and equally floriferous.

In *lavender and lilac* colours, elegans is distinct and most effective, pale greyish-lavender, flower small but a wonderful bloomer, but wants room. It is of a decided self colour, quite free from any marking. Duchess of Sutherland and Fairy Queen are of a most pleasing shade of silvery-grey or lilac, and are beautiful varieties. Duchess of Albany is a combination of grey-lilac and pale lilac-purple, a telling variety in a mass, and a decided acquisition in these shades of colour. The Duchess is a capital showy variety, and stands hot weather well, and is in every respect first-rate.

In *white* with blue margin, Skylark and Blue Cloud are very much alike, the latter a seedling from the former, both white, with a margin of azure-blue, rather deeper and broader in the latter than in Skylark. Both are very pretty, and very effective, but in very hot weather the azure-blue margin becomes very faint in colour.

Fancies.—I have thus far dealt with leading self colours, but we are getting a very large number of what may be called fancy varieties, that is, parti-coloured or blotched or striped varieties, at the head of which stands Countess of Kintore, a grand variety, the centre light purple, with a large blotch of greyish white on each petal. This is now a very popular variety, and well known, and most effective. "The Mearns" will also take a high position as a fancy variety for its excellent habit, freeness of blooming, and it is early in bloom and continuous. The lower petals are rosy-violet, with a large greyish-white blotch in each of the top petals. It is a very beautiful variety, and a great acquisition, and should be in every garden. Pytho is a free grower of close habit and very fine as an exhibition flower, of a very rich violet, the top petals margined with greyish-blue, superb in form and substance, but I cannot report it to be a first-rate bedder. John Burn disappoints as a bedder, but it is beautiful as a flower, prettily blotched and marked. Dawn of Day is a large flower, white clouded with blue tinted grey, and effective in masses. Rosebud is very like Ethel Baxter, and with me, not so good. Ethel Baxter is a lovely flower, distinct and most pleasing, pale rose striped with a deeper colour. Spotted Gem is also very pretty, rosy-purple with light blotches. Lady Amory is very like The Mearns in colour and habit; it is not so white in the blotch, but it is a charming variety. Mrs. Baxter is a grand telling flower, very large, with much of the Pansy breed in it, rich violet-purple with a broad white margin in the top petals, but it is not floriferous enough to say it is a valuable, continuous blooming bedder. York and Lancaster is a distinctly striped variety, the ground colour white, with stripes of rosy-lilac and maroon, distinct and pretty. Bronze Queen is a bronzy-purple with an orange shade of colour, and is very distinct and pretty. Mrs. Brodie is another very pretty variety, with grey-lilac top petals veined with purple.

These kinds are selected as the best from a large collection, and I say nothing, at present, of the quite new varieties of Viola, as these have, so far as I am concerned, to undergo a further trial; but I think I may safely say that Mrs. Dranfield, raised by Mr. Dranfield, of the Valentine Gardens, Ilford, will prove to be a valuable variety.

In all new varieties, to be really valuable for bedding purposes, we want telling, distinct colours, good habit of growth, early, continuous, and free bloomers. Those I have indicated as good may be relied upon. Many others will also be prized when a collection is wanted, and for exhibition purposes, but after all, telling bedding varieties are most wanted. Beds of mixed Violas are very lovely when the shorter growing kinds are kept in the outside portion of the bed.

In *Bedding Pansies* some of the best are in blues. Adonis, dark blue with black blotch, and Blue Bonnett, a lighter shade of blue with a dark blotch; Uncle Sam, very dark, black violet; George Rudd, deep yellow; Grassmere, rich shaded violet; and Thomas Granger, rich orange-shaded brown, are amongst the best, but as bedders Pansies must give way to Violas, for they do not stand hot weather as Violas do, and are not so continuously in flower. The old George Rudd, however, is an exception. *W. D.*

CULTURAL MEMORANDA.

KALOSANTHES.

These are among the most useful and showy of greenhouse plants, and may be had in all sizes, from the large specimens down to others in 4-inch or 6-inch pots. If it is desired to have the first-mentioned, keep the plants growing on from year to year, and, as soon as they have done flowering, cut them back to a moderate extent, and then stand them outdoors in some open, sunny spot until they break, keeping them nearly dry till that time. As soon as fresh shoots appear they should be partially shaken out and repotted. When doing this it is as well to drop them, so as to bring the side branches low, as then they will root where they touch, and form better furnished plants; but for exhibition purposes objections are sometimes raised to having more than one stem. To obtain the smaller plants, take off any of the strong shoots which have not flowered, and make them into cuttings about 6 inches long by stripping off the leaves at the bottom; pot singly in

sharp sandy soil, and stand in a cold frame till they root, which they will soon do if kept partially shaded and only just moist. They may then be shifted into larger pots, and should then be stood out in the open in full sunlight till the autumn; the most suitable place for them then and during the winter is a light airy shelf. The soil that answers best for growing Kalosanthes is a sandy loam, in which they should be potted firmly; do not over-water, but keep rather on the dry side till the spring, when they may be supplied more freely till flowering is over, and may be assisted now and then by applications of liquid manure. Although there are several Kalosanthes, K. coccinea is perhaps the brightest and best, the flowers of this being very large and exceedingly brilliant. *J. S.*

Poinsettias.

For many purposes dwarf plants are preferable to tall ones, and various methods have been adopted to attain this end; we have found it best to root the tops of well-developed shoots. Make them into cuttings in the usual way, removing no more leaves than is actually necessary, and taking care not to allow the others to flag before they are put in, nor afterwards, if it can be avoided. Sometimes a little difficulty is experienced in rooting the cuttings, but can this often be traced to wrong conditions? An easy and excellent method is to prepare a gentle hotbed, over which an ordinary garden frame may be placed. When the heat has settled down to a gentle warmth, prepare the cuttings, inserting them singly in small pots, and tying up the leaves loosely, then plunge them into the bed; tree leaves form a good plunging material; shade carefully from bright sunshine, and dew them over as often as may be necessary to maintain a humid atmosphere, but the moisture arising from the fermenting materials will go a long way towards keeping this matter right. No more air than is just required for ventilation should be given, a small chink usually being sufficient, until the cuttings are well rooted, when less shading is required. As they get well rooted shift into the 5-inch pots for flowering in, using a rich soil, and pot firmly. Stand them in a mild airy temperature as close to the glass as possible. *F. R.*

Chrysanthemums.

Dwarf plants may easily be procured by rooting cuttings about 5 inches long obtained from the points of any strong shoots which may be spared. Where old plants were planted out there will be no difficulty in getting an abundance of cuttings. They may be grown on singly or more may be put into one pot. Three in a pot is a convenient number. Put them in a frame and treat as recommended for Poinsettias, being careful not to allow them to get drawn. Give plenty of air immediately they are rooted, and shift the single ones into 48's and the others into 32's as soon as they require it, using rich loam, and stand them in cool pits, the lights of which are only to be used in case of heavy rains or frost. *F. R.*

Primula japonica.

This plant is the best of all the Primroses, with its six tiers of flowers on each stalk, and its hardy nature. In the herbaceous border here, these plants have been very effective. It is an easy plant to grow and increase, which latter is done by division, and by sowing the seed as soon as it is ripe. The seeds soon germinate if sown in pans of light loam and leaf-mould in equal parts, and mixed with silver-sand, and placed in a cold frame. When large enough, the young plants should be pricked off into pans, and placed again in the frame, and as soon as they are strong enough planted out in rich soil. They soon grow into large masses. *W. Smythe, Basing Park, Hants.*

Lobelia cardinalis Queen Victoria.

I have a bed of this plant now just in full bloom, and a grand bed it is, with its tall scarlet flower-spikes and dark foliage, and an edging of Centaurea candidissima. The ground underneath the Lobelias is planted with Lobelia speciosa compacta, which makes an harmonious whole. We propagate Lobelia cardinalis by dividing old plants in the spring, or by seeds sown at that season in pans, under glass, employing a light soil and a little heat. The plants are best taken up after they have done flowering, potting them, and keeping them dry in a cold frame throughout the winter; to be again planted out in spring, with or without division. *W. Smythe, Basing Park, Hants.*

DENDROBIUM POLYPHLEBIUM, AND VAR. EMERICI,

This pretty species (fig. 33) was described by Reichenbach in these columns in 1887, vol. i., p. 702, and in the same year in vol. ii., p. 242, he added to it the variety Emerici. Both forms are represented in the accompanying woodcut, which was drawn from flowers supplied by Brigadier-General E. S. Berkeley. D. polyphlebium is closely related to D. Pierardi, to which it is very similar in habit, and somewhat in the form of the flowers, but the latter are larger, and the colour is quite different. The sepals and broad petals are of a bright rosy-mauve, a little darker along the borders. The lip has the tubular part of the same light rosy-mauve tint, veined with darker; on each side of the disk of the front part is a large dark brownish-madder blotch, and the border is whitish or pale sulphur-yellow. The variety Emerici differs from the type only in having a broader white or pale sulphur-yellow border to the lip, and lighter coloured blotches; therefore, the lips only of this variety is represented in my drawing. *N. E. Brown, Herbarium, Kew.*



Fig. 33.—Dendrobium polyphlebium and variety, D. p. Emerici.

Abutilon vitifolium album.—Mr. Gumbleton (Belgrove, Queenstown, co. Cork) kindly offers seeds of this very beautiful shrub, figured at p. 157, August 10th last, to those who care to send him a stamped and addressed envelope. In most parts of England it would require the shelter of a greenhouse in winter, but would form an admirable plant for the adornment of the flower garden in summer.

Plant Notes.

Nægelia (Gesnera) cinnabarina.

This handsome winter flowering plant, with red and yellow flowers, is deserving of any little extra attention it may require. The foliage of itself is very characteristic and ornamental. The leaves, which are produced in pairs along the main axis, are rather long-stalked, broadly ovate, cordate, and thickly covered with light reddish hairs, giving them a velvety appearance. The roots usually begin growing about July; but before they have made much progress they should be shaken out of the old soil and repotted; but before doing this it is well to examine them, and see that they are free from insects, as if they require cleaning afterwards, it cannot be done without damaging the woolly foliage, nor should syringing be practised at any time. An intermediate house with a position close to the glass, suits them, especially if they are shaded just enough to prevent scorching. Single plants in from 4 to 6 inch pots are the most effective; and the soil best suited to their requirements is a light rich compost of about half loam and leaf-mould, with enough sharp sand to render it porous. The plant is easily increased by cuttings or by dividing the stolons. *F. R.*

Begonia socotrana.

The introduction of this species, some nine years ago, gave us an entirely new and distinctly winter-flowering plant of great merit, but which even now seems to be but little known to many cultivators. Probably, at first, the fact of its only being a winter plant was not sufficiently understood, and attempts to grow it in summer ended in failure; but now we know its requirements, it is found to be as easily grown as any of the tuberous section, and with many of which it would compare favourably. It is true it has not the large flowers of some, but what it has are produced more abundantly, are of a charming bright rosy colour, of good form, and as much as 2 inches across, in individual flowers. The inflorescence is a loose, much branched cyme, thrown well above the foliage, which latter is characteristic and ornamental; the round, thick, fleshy stems, and petioles of the leaves, together rarely exceed 8 or 9 inches in height; the leaves are of an intense green colour, peltate, and almost round, instead of being obliquely heart-shaped, as in the case with many Begonias. Moreover, it further differs in producing around the base of the stem a number of small scaly bulbils, by which the plant is propagated and perpetuated, as well as by seeds. Plants which have been resting since last spring are now showing signs of fresh growth, and should be potted up before much progress is made. Shake away the old exhausted soil, and repot in a rich, light compost of loam and leaf-mould, with sharp sand; and drain efficiently. Being a stove species, it is no use expecting satisfactory results in a cool greenhouse. A low-roofed moist warm pit, or similar conditions near to the glass, is the best. Be careful not to over-water, and, if possible, avoid watering them overhead — it is apt to cause decay. As the sun loses power, expose more fully to its influence, and maintain a temperature of about 60°; when towards the close of the year they will be very attractive objects. There has been several hybrids raised by Mr. John Heal, of Veitch's, Chelsea, the best of which are John Heal, Adonis, and Winter Gem, all of which bear a certain amount of resemblance to the original parent, socotrana, being more or less rose-coloured; and certainly all are valuable acquisitions and additions to our stock of winter-flowering plants. *F. R.*

Plants and Their Culture.

The Inmates of the Greenhouse. — It will be advisable, in view of the heavy rains, to house the more tender plants, especially such as may be deficient of roots. Every attention should be given to these plants after housing them, plenty of air being

afforded, and a sharp look-out for mildew maintained. By placing the Boronias and hard-wooded Ericas at one end of the house, they can be treated more in accordance with their needs than when they are interspersed with the other plants. It will be advisable to leave plants of Erica Cavendishii and E. ventricosa, and similar varieties, out-of-doors as long as possible, exposing them to full sunshine. It is good to examine these plants occasionally, the larger Ericas and Azaleas getting dry at the centre of the ball, and the matter is aggravated by the large head of foliage throwing off the rain even when it is very heavy; but means should be taken, by probing with a sharp spiked rod, or by forming a basin with soil round the dry portion, so as to confine water over that part of the ball that has become dry—no water being given, for a time, to the damper part. Mildew will soon disfigure the plants, and if it should appear, weekly dustings with flowers-of-sulphur should be given.

Before housing any plants all painting and repairing should have been done. Where no painting or repairing are required, the houses should have a thorough cleansing with soap and water. Creepers on walls should be overhauled and cleaned, and if mealy-bug or scale be present, employ proper insecticides to get rid of them.

Camellias requiring it should be top-dressed, and plants not shifted before, may now safely be done. Many excellent cultivators prefer shifting their plants at this season, but in the case of small plants, or small houses, the spring-time, after blooming, is generally the more convenient time. Over-potting at this season must be avoided, and watering carefully done. A potting compost was given in one of the early spring Calendars. The plants after repotting should be syringed during bright weather.

Azaleas.—Any late flowering plants which may have been indoors will now have completed their growth, and should be placed in the open for a short time, standing them on tiles or other materials, to prevent soddening of the soil. Should thrips infest them, give thorough syringings with tobacco-water; and, if very badly infested, add a small quantity of soft-soap to the tobacco-water. This operation should be repeated before housing the plants.

Acacias that have been in the open air, if infested with white-scale, should be painted over with an insecticide, using the mixture stronger than is advised for syringing purposes. Boronias and Pimeleas should also be treated in a similar way. Statices require much the same kind of treatment if dirty, and should now have the flower-spikes removed if these are getting past their best, and the foliage kept clean and free from greenfly and mildew. The flower-spikes of S. Halfordii will be found useful in the winter for filling large vases, when intermixed with grasses.

Greenhouse Rhododendrons which may be in want of shifting, may be at once put into pots one size larger than those they have occupied, syringing them in fine weather. Indian Azaleas, having now finished their growth, should get all the sun and light possible. Cytisus will be growing freely, and should get weak liquid-manure occasionally. Epacris should at this date be fully exposed to the sun, but do not let the plants get soddened with rain, and this may be prevented by placing lights over the plants, or by tilting the pots when it rains. *G. Wythes, Sion House, Brentford.*

The Orchid Houses.

Work in the Houses.—The necessary painting, cleaning, and repairing of the houses having been finished, no time should be lost in overhauling the heating apparatus, special attention being given to remedying any defects made apparent last winter; and when these are not of a very simple nature, it is better to call in the assistance of a competent hot-water engineer. Often, however, the piping is rendered difficult to heat by reason of it having got out of the proper level, by the sinking of the supports, or from other causes, and such defects are usually set right without difficulty. Air taps and valves should be oiled, the boiler seen to, and where proper sluice-plugs are at its lowest point, sufficient water ought to be run off to make sure of the sediment being cleared out. After all is in proper order, the whole of the iron work, piping, &c., should be painted with lamp-black and oil; but all ordinary paints, varnishes, and especially tar, should be most carefully eschewed. The application of gas-tar to the hot-water pipes has, to my knowledge, brought destruction to several good houses full of Orchids, and, when once it is applied, its poisonous influence on vegetation is so subtle that nothing less than the removal of the pipes to which gas-tar has been applied will make the house a safe habitation for the plants.

The heating apparatus will now want keeping at the requisite pressure in all the departments, even the cool-houses being all the better for a little artificial heat to keep the air in motion; but now, as at all times, special care should be taken to keep down the night temperature, for, of all forms of excessive heat, a too high night temperature is the worst—better 10° excess in the day than 5° at night.

During dull weather careful watering is imperative, nothing so injures plants as a routine of watering heavily in bright weather and dull weather alike; but after the restricted waterings given during a protracted cloudy time, extra vigilance is required on sunny weather setting in, for in a few hours the plants which were previously wet enough, will become very dry; and to such, if growing and rooting freely, a thorough soaking should be afforded.

The temperature for September should be:—Warm-house, 75° to 80° by day; 70° at night. Intermediate-house, 70° to 75° by day; 65° at night. Cool-house, 60° to 65° by day; 60° at night. Degrees Fahrenheit. *James O'Brien.*

The Hardy Fruit Garden.

Strawberries.—Plants which were forced early and planted out on a warm border for a chance crop of fruit will by this time have set their berries, which, to get of fairly good size, should be thinned early, leaving from seven to nine of the forwardest on each plant; some clean straw should be placed about the plants to prevent the fruit getting splashed. But a much better plan for this late crop is to tie up the trusses to sticks well above the foliage, as by this means the fruit gets the fullest sunshine, and consequently becomes a much better colour and flavour, and it is not so apt to rot in wet weather. Viscountess Hericart de Thury is well suited for this kind of work; for later use some of the plants which are well set may be potted, taking care to preserve as much soil as possible with the roots, and being careful not to bruise the berries. After potting, the plant should be placed in a shady position for a time, and gently syringed four or five times daily till they have taken to the new soil, when they may be put into a frame or on the shelves in the houses to ripen when required. The hoe should be freely plied amongst the beds of Strawberries, and between the rows of bush fruit, during the next month.

Figs.—Trees on which fruit is swelling off must not be allowed to suffer from want of water at the roots; but as ripening approaches much less will be required. It may here be noted that where an unlimited root-run exists, the Fig very seldom requires water. Remove as they appear all suckers, and keep the shoots neatly secured to the walls; but do not overcrowd the wood. A medium-sized, short-jointed growth should be the aim of the cultivator in this and other fruit trees. No further pinching of the points will be necessary in the case of Figs. *H. Markham, Mereworth Castle, Kent.*

Fruits Under Glass.

Grapes now Colouring.—The vineries where these are, should have a little artificial heat in dull weather, and at the same time a little ventilation; and should pot plants be growing in the houses, these should be removed, and as little water as possible sprinkled about. Should it be necessary to water the inside border, a top-dressing of dry Mushroom dung or other like material should be spread on the soil. Let the laterals be pinched regularly, and the bunches looked over for bad berries.

Keep the wasps at bay by putting close-meshed netting over the ventilators in all the houses where fruit is hanging, and on sunny days give air at the front and top of the houses, so as to dry the houses, and when the weather is favourable, a little ventilation may be afforded at night. Keep a look-out for red-spider and thrips.

Muscats should be very gradually exposed to full sunlight, and especially where the foliage is thick, should this not be done suddenly; I have very often seen scalded berries as the result of suddenly exposing the bunches of this variety. The borders of houses, where the fruit has been cut, may be top-dressed, thus giving the roots a chance of occupying the fresh soil this season; removing all the top soil down to the old roots, and put on a mixture of loam and Thomson's manure, making it quite firm.

Early Pot Vines when ripe enough for removing out of the house, that is when the stems are brown and firm, should be placed against a south wall, and have all lateral shoots trimmed off, taking care not to injure the base leaves, but leaving them to fall naturally. Young, strong-growing Vines of this season's planting, with wood not yet ripe, should have some fire-heat applied, a free circulation of air, with full exposure to the sun—thinning the laterals, and gradually shortening them.

Figs.—Trees bearing a second crop should be liberally watered with manure-water, putting a little Mushroom dung or other dry material on the border afterwards, so as to prevent evaporation. Ventilate freely, and employ a little fire-heat given night and day. Those trees from which the fruit has been gathered should have all the useless weak shoots removed, and be heavily syringed on fine days. Water the soil when necessary; afford the plants free circulation of air, with a little fire-heat when the weather is dull. The early plants in pots should be placed out-of-doors in full sunshine. *W. Bennett, Rangemore.*

The Kitchen Garden.

Treatment of Cress.—A few rows of American, Australian, and Normandy Cress should now be sown; these being much esteemed, and taking the place of Watercress in the winter. The plants should be in such a position that they can be covered with glass in hard weather. The leaves should not be cut like curled Cress, but the outer ones should be picked at short intervals, and the plants will then continue to push forth fresh ones. There is little danger of it running to flower at this season of the year.

Radishes.—A good sowing of these should be made on well-prepared soil. Slugs are partial to these, and unless measures are taken to prevent their ravages, the roots will be much injured. Dustings with soot, powdered lime, and wood-ashes will be found good preventatives; but it is best to catch them, which is not a difficult task if a few Cabbage leaves be laid about, and every morning examined and the slugs killed.

Parsley.—The rougher leaves should be cut off, in order to induce robust growth, the better to enable the plants to withstand the rigours of winter. Transplant the thinnings into blank spaces in the lines, &c. Dust the plants with soot, and keep the hoe plied amongst them. No time should be lost in potting up some of the plants, so that, in the event of hard weather, there may be some leaves to pick. When Parsley is swept clear of snow to obtain a picking, it is generally ruined, and many of the plants perish. A sowing on a warm and rich border may yet be made, and should it withstand the winter, it will be found of much use in the early part of the summer.

Chicory and Whitloof.—Some of the largest of these may be lifted, and placed in a dark place to blanch, cutting off the leaves, and planting the roots in boxes or a bed of light mould; a good watering should then be given, and cocoa-nut fibre or leaf-soil put over the crowns.

Turnips.—In favoured districts, these may still be sown. Thin out the plants of earlier sowings, and ply the hoe amongst these and all other crops until they cover the ground.

Cauliflowers which are turning in, should have the leaves turned over the heads. Those heads which are fit for use should be cut in the early morning, and any which are commencing to open should have the leaves tied over them. If they are coming in very fast, a portion of the crop may be lifted with some soil adhering, and hung head downwards in a cool shed. Broccoli which is growing too rapidly, may be partially lifted.

Capsicums growing out of doors, when the fruits are of full size, may be pulled out of the soil and hung up indoors to mature. Egg plants should have protection by means of glass sashes.

Artichokes.—Remove old flower heads, as these by remaining impoverish the plant. *W. M. Baillie, Luton Hoo Gardens.*

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	SEPT. 2	Cercle Van Houtte, Ghent (four days).
WEDNESDAY,	SEPT. 4	Glasgow and West of Scotland, Kelso. Bath Floral *Fête* (two days).
THURSDAY,	SEPT. 5	Stirling (two days). Paisley (two days). Dundee (two days).
FRIDAY,	SEPT. 6	Great Fruit Show, Crystal Palace. National Dahlia Society, Crystal Palace (two days).
SATURDAY,	SEPT. 7	—Dalkeith, N.B.

SALES.

MONDAY,	SEPT. 2	Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.
TUESDAY,	SEPT. 3	Clearance Sale of Greenhouse Plants and Glass Erections, at the Hendon Nurseries, Hendon.
WEDNESDAY,	SEPT. 4	Dutch Bulbs, at Protheroe & Morris' Rooms Dutch Bulbs, at Stevens' Rooms.
THURSDAY,	SEPT. 5	Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	SEPT. 6	Imported and Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	SEPT. 7	Dutch Bulbs, at Protheroe & Morris' Rooms. Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—59°.5.

Fruit Culture.

THE lamentable deficiency of our fruit-crops this season will, we trust, induce the over-sanguine to exercise due caution, before embarking on what may turn out a disastrous enterprise. We do not, indeed, hear quite so much this year of the enormous profits to be derived from fruit culture on a large scale, nor on the amount of compensation for agricultural losses and depressions to be obtained from the extension of the cultivation of fruits. The low prices obtained by the growers generally should serve to instil prudence into the minds of would-be fruit-farmers, while a reference to our annual reports of the fruit crops for a quarter of a century will show that a really good fruit year is the exception rather than the rule. In any case the prices are, generally speaking, not very remunerative, though doubtless, under certain circumstances, a good return can be obtained, especially from soft fruits, which often, indeed generally, give a crop even when Apples fail, and with which should be combined the culture of vegetables and hardy flowers.

Of course there are exceptions, and no practical man would dream of discouraging the judicious attempts made in various quarters to turn the land to good account in the growth of fruit. The horticultural press has indeed not lent itself, during the recent outcry, to exaggerated anticipations, but has throughout advocated the judicious employment of all methods to increase the resources of the land, and fruit culture, among them. Specially has it insisted on the necessity of growing good and suitable sorts, on careful packing, and the acquisition of the difficult art of marketing. To put all the eggs into one basket is notoriously impolitic—but British farmers have too often failed to recognise this truth, while as a class they show a lamentable want of enterprise and initiative. On the other hand, it must never be overlooked that fruit-farming, like other departments of agriculture, is a business which must be learnt not from books or papers, or popular lectures, but from the teachings of long, and often depressing, experience. It is not the mere preparation of the land, nor the selection of suitable sorts, that have to be considered, but many other conditions, such as climate, seasons, insect marauders, fungus pests, land tenure, rent, rates, tithes, taxes, labour, markets, distribution, the ubiquitous middleman, foreign competition, and a vast number of other controlling agencies. All these have to be reckoned with if the business of fruit farming is to pay.

The frequent gluts in the market have, indeed, to a very considerable extent been met by methods of preserving on the spot; and jam-making, though often ridiculed, has become a great, and, it is to be presumed, a profitable undertaking. To Mr. GLADSTONE, no doubt, much of this success is due, but would-be fruit growers must not be led away even by the eloquence and financial insight of the great statesman. It is one of the misfortunes of a man holding a position like his to have to speak at times on subjects of which he has little practical acquaintance. He may, indeed, be "coached"—and fortunate it is when it is so—by some persons of greater practical responsibility, knowledge, and experience than himself, and when this is so, the influence or eloquence of the speaker are exerted to excellent purpose. With much of Mr. GLADSTONE'S late address to his neighbours at the recent Hawarden Flower Show, no exception can be taken. His utterances on that occasion, of the subject of cottage gardens and allotments, were so singularly like those which were written in our columns at the very time the great statesman was speaking, that they might almost have been taken as the basis of our own remarks. This, however, was a mere coincidence. We are sure, however, our readers would not endorse, any more than we should, his crude remarks on grafting. Grafting the Apple on the Pear has, no doubt, been tried, but never on a large scale, and the results that have been obtained have not been such as to warrant the general adoption of the process, which must be looked on as a mere curiosity. Still, we never know till we try. The mysteries of grafting are very far from being probed to the bottom. What seems the most unlikely result sometimes happens. An instance of this occurs to us in the case of the Witch Hazel (Hamamelis) and the common Hazel (Corylus). There is, as far as we can see, no relation at all between the two shrubs but that of the name. A certain superficial resemblance in foliage to the common Hazel has led to the application of the popular name, Witch Hazel, to a shrub which otherwise we should have said, had not even a remote relation to the Filbert or Hazel, and yet we are assured that the Hamamelis has, for purposes of propagation, in one of our leading nurseries, been successfully grafted on the Hazel. We say successfully, because adhesion has resulted, and even a certain amount of growth, but how long the union will last is another matter; we imagine not long. The graft in this case lives for a time on the resources stored up in its own tissues, aided, of course, by the light, air, and moisture it can derive from the atmosphere; and it must, we presume, obtain the larger quantity of water it requires through the roots of the stock whereon it is grafted. Be this as is may, the tendency of all experience goes to show that grafting between stock and scion of such varied nature is not permanently successful. Again, it is by no means always the case that graft and stock, even when nearly allied by family relationship, will unite. These are matters on which we have almost everything to learn. A necessity of the times as pressing in its way in its demands as the establishment of allotments and the multiplication of cottage gardens, is the establishment of a properly equipped experimental garden, one not dependent on the requirements of caprice or fashion, but sufficiently well endowed to be independent of casual support. The future prospects of fruit culture would be much enhanced by such an institution. In the meanwhile, every intelligent cultivator might make tentative experiments for himself before rushing into business on a large scale, and by these means would infallibly obtain an amount of knowledge and experience which would not only prevent him from embarking on hazardous enterprises, but would afford him most valuable hints for their successful prosecution.

THE QUEEN'S WELSH JOURNEY.—The *Times* correspondent, who seems to have a larger acquaintance with flowers than most journalists, thus notices the decorations at Wrexham:—"At the bottom of the slope, a highly elaborate triumphal archway, erected, I believe, by the committee, reflected great credit on its authors. It took the form of a large central arch with two side archways, and the background was composed of Heather and Portugal Laurel, cunningly intermingled from rock turrets. On each side projected at the top trophies of flags, some 3 feet from the top of the lesser turrets, surmounting the side archways. On each side was a wreath of Asters, and at about the height of the eyes of a passer-by were, what for lack of a better word may be described as circular bosses of Marigolds. The top of the structure at the centre was surmounted by a floral crown, upon one side, and the other of the central archway, high up, were the letters V. R. in white Japanese Anemones and Phloxes of a soft lilac and pink colour. Below were bosses of Zinnias, and the line of each archway was marked with gorgeous Dahlias. The legends were on the side nearest to the station, 'Welcome to our beloved QUEEN,' and on the far side, a Welsh rendering of the same sentiment in the words 'Croesaw ein hanwyl frenheinas.' I linger over this because out of many triumphal arches, it was far and away the most graceful that has ever come within my notice.—At Bala, magnificent bouquets, supplied by Messrs. DICKSON, of Chester, and designed and arranged by their skilled specialists in this department of their business, were presented. Messrs. DICKSON, seeing they hold the appointment of nurserymen to her Majesty, presented the committee with the elegant bouquet for the QUEEN herself. This bouquet was composed of choicest Orchids of varying shade, prominent amongst which were Cattleya Gaskelliana, Disa grandiflora, with Odontoglossum (varieties), and gracefully introduced Tea Roses, Stephanotis, Eucharis, and Allamandas were added charms of perfume and beauty; delicate Ferns completed the choice arrangement, which was mounted on an elegantly-made lace and satin holder. The bouquets for Princess BEATRICE and Princess ALICE were of slightly different form, but to the uninitiated they seemed equal in beauty and delicacy with that prepared for Her MAJESTY. Princess BEATRICE'S bouquet was daintily rounded off in a flower circle perfect in form, full of fresh fragrance, and mounted on a beautifully-worked cream-coloured lace and satin holder; and the bouquet for the Princess ALICE was equally beautiful.

The Botanic Society of France. — On the 25th, M. H. L. de Vilmorin, as President of the Botanic Society of France, entertained the foreign botanists attending the Botanical Congress, at dinner, to the number of about sixty at the Restaurant Champeaux, Place de la Bourse. Among the guests present we noticed M. Goltz, of Luxembourg; O. Penzig, Director of the Botanic Gardens at Genoa; C. Hansen, Danish Vice-President; C. Timiriazeff, Russian Vice-President; M. Glaziou of Rio Janeiro; Dr. Hartog, English Vice-President; P. L. Simmonds, Ed. André, Editor of the *Revue Horticole;* Professor Edward Bureau, Museum of Natural History; and J. Poisson, Aide Naturaliste; G. Roux, Dr. E. Cosson, Paul Maury, Dr. P. Veuillemin, and others.

Railway Smoke, Soot, and Cinders.—Mr. Bailey Denton has published in pamphlet form the report of an unsatisfactory trial before the County Court Judge at Hitchin. The pamphlet details the nuisance and injury to which Mr. Denton has been subjected on the part of the servants of the Great Northern Railway Company. The jury were unable to agree upon the point as to whether there had been negligence on the part of the Company, although the injury to Mr. Denton's garden appears to have been proved, and Mr. Denton appears so far to have gained his point, inasmuch, as since the trial "he has had nothing to complain of," owing to the great improvement as regards the smoke from the engines. The following passage from a printed circular of Mr. Denton's, sums up the case from his point of view, and will be read with interest by those placed under similar circumstances :—

"In the case of Bailey-Denton *v.* The Great Northern Railway (1889) it is made manifest (1), that properties adjacent to railways may be considerably depreciated by the carelessness of railway servants; (2), that complaints may be made and habitually acknowledged yet practically disregarded by railway officials; and (3), that injuries to properties immediately adjoining railways may be caused by the indifference of both officials and servants to any complaints made by sufferers, although the injuries may be obvious to any disinterested practical man.

"The attention of all persons interested in the proper regulation of railways is called to the great efforts made by the Great Northern Railway Company, in this case, to prove, through experts from a distance (who are always available), that the injuries complained of were not caused by the smoke, soot, cinders, or coal-ashes, which were positively seen and tasted on the affected fruit and leaves by local witnesses, and that if the injuries were done as alleged, they were the result of a fair exercise of the statutory powers possessed by all railway companies!

"Since the trial no damage has been done!"

M. Lemoine's new Hybrid Gladioli.—These are the offspring of G. gandavensis, crossed with G. purpureo-auratus. The parentage is evidenced by the large, deep-coloured spots on the flower segments. Crossed again with G. Saundersianus, a race has been produced known as G. nanceianus ×, some specimens of which were exhibited at a recent meeting of the Royal Horticultural Society, and which have been described in our columns by Mr. Gumbleton. Their beauty and hardiness are great points in their favour.

A New Cherry.—There was a fine display of fruit at the annual exhibition of the Taunton Deane Horticultural Society, held on August 15, and in a collection of ten dishes, shown by Mr. R. Nicholas, gr. to Earl Fortescue, Castle Hill, South Molton, appeared a very fine-looking late Cherry, under the name of Castle Hill Seedling, a large shining black fruit, of the Black Tartarian type; very handsome,

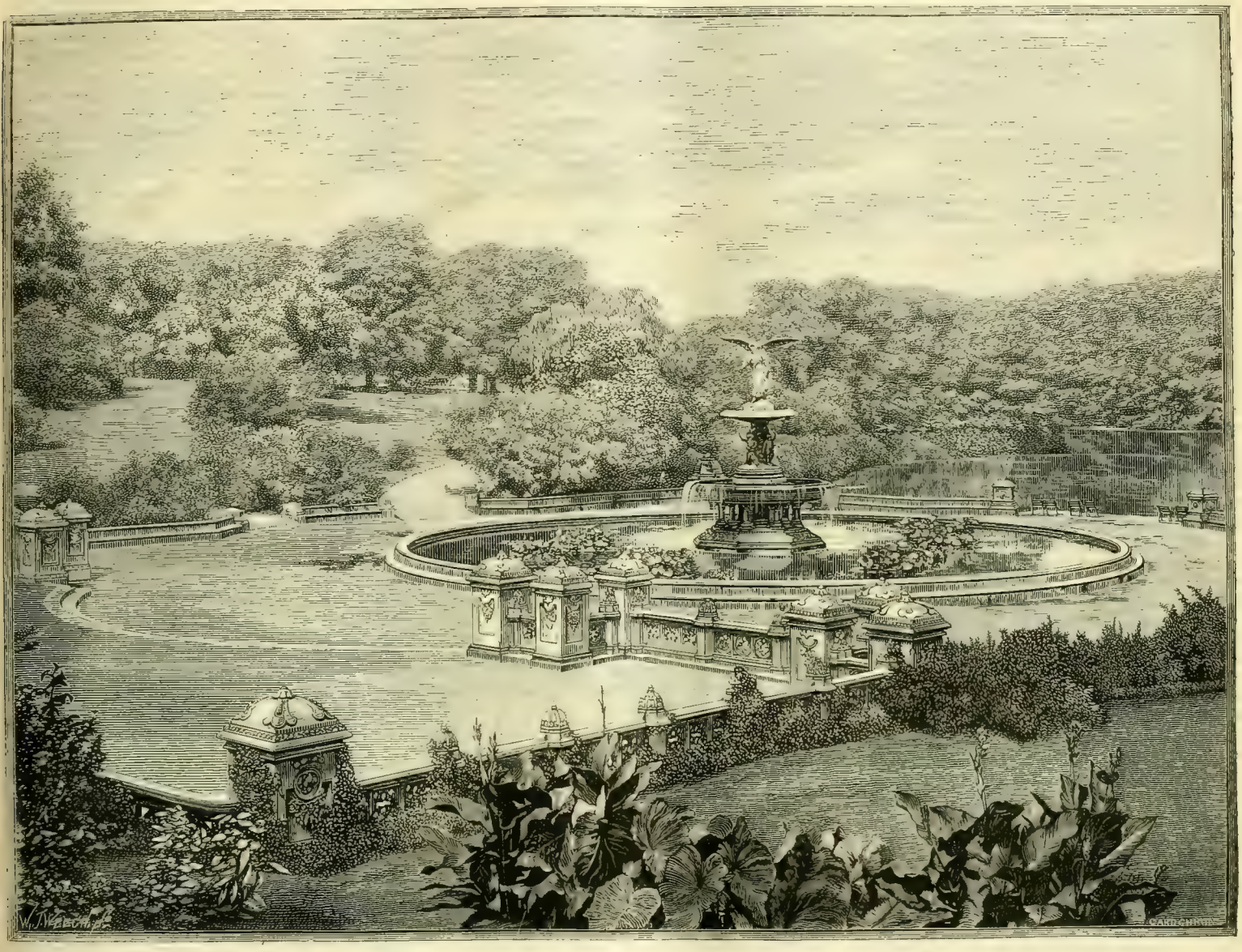


Fig. 34.—view in the central park, new york. (see p. 248.)

and of agreeable flavour. Our correspondent took them at first sight to be unusually fine Morellos, but a closer examination revealed a wide difference. It is undoubtedly a very fine late variety, and in its size and plumpness was in marked contrast with Governor Wood and Florence, which found a place in other collections. This fine variety came up as an accidental seedling, and at Castle Hill there is a tree of it trained against an east wall, where it does well, and it is a great favourite with Earl Fortescue. The stock of this Cherry appears to be entirely in the hands of Mr. Nicholas. It would afford an excellent opportunity for comparison, if a dish of this Cherry were submitted for the opinion of the Fruit Committee of the Royal Horticultural Society.

Presentation to Mr. James Huntley.—On the occasion of the fortieth exhibition of the Trowbridge Horticultural Society, on the 21st inst., a presentation was made to Mr. James Huntley, the popular hon. secretary, in commemoration of his having served the Society in this capacity for the space of twenty-five years. The gift consisted of an elaborate over-mantel, a handsome clock, and bronze ornaments to match, together with an illuminated address from the Society, signed by the President, on behalf of the members. The presentation, which was made by Mr. Stancomb, took place at the luncheon, after the prizes were awarded.

Window Plant Competition.—The annual competition for prizes for window plants grown by children—members of the Christ Church Band of Hope, Chelsea, took place on Wednesday last, in the parish room adjoining the schools. It is gratifying to notice the growing popularity of childrens' flower shows, especially in the metropolis—the idea is worthy of every encouragement—for apart from teaching the little ones the art of gardening, and the reason why certain things are done, it is the means whereby the life of children may be made pleasanter than it often is in towns.

Flowers in Season—Mr. Wolley Dod sends us flowers of the large white fleshy-leaved Chrysanthemum lacustre, *alias* latifolium, and a single-flowered Helianthus raised from seed of H. doronicoides, but greatly resembling H. rigidus. The leaves (upper) are broadly lanceolate, tapering to both ends, entire, and the flower-heads 3 inches across, rich deep yellow, surrounded by an involucre like that of rigidus. Mr. Ware sends a fine bunch of perennial Sunflowers, among which we note H. multiflorus major, stems greenish; leaves broadly ovate-acuminate; flower-heads 3½ inches across, bright canary yellow. H. m. maximus, similar to the preceding; but the flower-heads measure 4½ inches across, and the rays are broader—a superior variety. Helianthus multiflorus plenus is similar to H. m. major, but the interior or disc florets are ligulate, like those of the ray but shorter. H. multiflorus grandiplenus has the ray florets ligulate, and of the same length as those of the disc. H. rigidus semiplenus has stems reddish, slender; upper leaves linear; flower-heads 3 inches across, semi-double. From Messrs. Kelway & Sons we have received a most beautiful hybrid Gladiolus purpurea auratus × G. Gandavensis. The spike was of moderate dimension, but the colour, that of claret, when held up to the sunlight, differs from anything we have before observed in Gladioli. It is named Leonard Kelway.

Rosa pomifera.—Mr. Burbidge sends us foliage and fruit of this Rose, figured in *Gardeners' Chronicle*, 1886, vol. xxv., p. 237. The foliage is bold and handsome, and has the fragrance of the Sweet Brier. The fruits are globose, the size of those of the Siberian Crab Apple, scarlet, and covered with stiff bristles.

Hong Kong Botanic Garden.—From the annual report we learn that the Siberian bear has again given considerable trouble. He made several attempts to pull his house down, on one occasion he succeeded in ripping the iron roof, and another time he made considerable progress in demolishing the brick walls. He also succeeded in squeezing to death the Siamese bear, which had been his associate for the last two years. The house has been very much strengthened, and there is now no fear of the bear being able to effect his escape. Young gardeners proceeding to colonial gardens should ascertain whether the charge of a bear-pit is likely to fall to their share, and be cautious accordingly. Meantime the conduct of a pelican in our national garden at Kew is stated to be not altogether free from reproach. The following are the kinds and numbers of trees planted, reared *in situ*, and reared from broadcast sowing, as detailed in the annual report of the Botanic Garden:—

Pinus sinensis	379,621
,, ,, *in situ*	250,997
,, ,, broadcast	50,600
Tristanea conferta...	4,297
Camphor	7,658
Bamboos	320
Ficus repens	400
Miscellaneous	32
	682,325

Gardeners' Royal Benevolent Institution.—We are given to understand that Mr. Edmund Yates, of the *World*, has expressed his willingness to take the chair on the occasion of the annual friendly dinner, after the general meeting, on or about January 17 next. He will be supported by the Very Rev. the Dean of Rochester, Sir Robert Peel, and others.

The Gardeners' Season.—It often happens that, for long months, "the family is away from home," and then much of the gardeners' work is devoted to the production of garden supplies to be sent to a distance. In the autumn, however, it generally happens that the gardener has the pleasure of showing his handiwork to his employer, while large demands are made upon him for floral decorations and the supply of the table. Then is the value of the gardener's foresight and labour put to the test. Among many migrations we note the following:—

Culford.—Lord Cadogan has recently purchased this place near Bury St. Edmunds.

Baron's Court, Tyrone.—Lord George Hamilton is about to visit this place.

St. Mary's Tower, Birnam.—The Duke of Rutland is about to proceed to this place.

Whittinghame, Preston Kirk.—Mr. A. J. Balfour is about to proceed to his seat at this place.

Welbeck.—The Duke and Duchess of Portland will entertain friends in September.

Raby Castle.—The Duke and Duchess of Cleveland are at Raby.

Foston Hall, Leicestershire.—The Hon. George Allsopp has taken this place on a short lease.

Dunrobin.—The Duke and Duchess of Sutherland are in residence.

Tarbat House.—Lord and Lady Cromartie are at their family seat near Tain.

Idsworth Park has been, says the *World*, let to Mr. Matthews, the Home Secretary.

A Case for the Nomenclature Committee.—"Begonia hybrida gigantea carminata semperflorens"—very convenient, isn't it?

The Culture of Flowers in Roumania is very general. Not only every peasant's house in the country has its corner of the garden reserved for flowers and odoriferous plants, but also in the towns the houses are all surrounded by gardens, and the ladies raise in their rooms a great variety of flowers. Large proprietors have also in the town and country pleasure-gardens, greenhouses, and Orange groves. In nearly all the towns there are also public gardens very picturesquely laid out, where a great variety of flowers and plants are to be seen.

THE CENTRAL PARK, NEW YORK.

Central Park, now one of the finest and most beautiful in the world, is so called from its situation, the centre of Manhattan Island, upon which New York stands. It was little else than an uneven, rocky wilderness till the year 1857, when the city authorities determined to form a park and recreation-ground on it. The landscape design was by Frederick Law Olmstead, and the work as carried out is one of the greatest achievements of its kind in modern times.

The idea throughout has been to imitate Nature, and to move as little soil as possible in carrying out the design, rather emphasising favourable and pretty spots. In this way the land has been most successfully treated.

The scenery imitated approaches in style that of the banks of the Hudson River. The area of the Park is 840 acres, 400 of which have been planted with 500,000 trees and shrubs. A striking feature is found in the large amount of table rock which is scattered over the Park, from the banks of the lakes to the highest point called Belvedere, from which the great extent of the park may be seen, stretched below, as in a panorama, and over which trail native Vines and the pretty Ampelopsis Veitchii. There are nineteen entrances, to which such popular names as Children's, Hunter's, Woman's Gate, &c., have been given.

Besides the many walks, terraces, and valleys, the Mall is one of the finest in New York, with its grand avenue of American Elms, leading to the terrace and Bethesda Fountain, shown in our figure (fig. 34). The idea is suggested from the Bible story, the Pool of Bethesda.

Monuments are dotted over the Park, including an Egyptian obelisk. The requirements of the public generally have been studied, and to this end places for baseball and other games have been provided, besides a handsomely fitted casino. The "Zoo," one of the finest in America, is free to all. The "Lily" pond is of much interest to horticulturists, and during the summer it holds most of the choicer Nympheas, including the Sacred Lotus of the Nile. In the springtime the Park appears to the greatest advantage, with its gay parterres of Tulips, the beauty of the tree foliage, and the numerous deciduous shrubs then blooming, noticeable the lovely Cercis canadensis and Magnolia soulangeana.

Twenty million dollars have already been expended on the Park, and improvements are still going on. We are indebted to the genial superintendent of the Park, Mr. S. O. Parsons, for the information supplied to us, and to whom great credit is due for the excellent state in which this, and the whole of the other New York parks of which he has charge, are maintained.

PLANT PORTRAITS.

Anthurium Andreanum var. atropurpureum.—Spathe rich crimson; var. Louisæ, pale pink. *Revue de l'Horticulture, Belge*, August.

Apple Wax (Cire), *Bulletin d'Arboriculture*, July.

Begonia peltata var. President de Boureuilles.—A variety with obliquely lanceolate, denticulate leaves, pink above, with dark veins, rich crimson beneath.

Canna indica.—1, Victor Hugo, crimson; Guillaume Coston, yellow, with red spots. *Gartenflora*, August.

Cattleya Trianæ, Popayan variety, *Orchidophile*, July.

Passiflora triloba, *Illustration Horticole*, t. 83.

Pear Calabasse Abbé Fetel, *Bulletin d'Arboriculture*, June.

Primula cortusoides, *Journal of the Japanese Horticultural Society*, June, 1889.

Prunus Simoni, *Canadian Horticulturist*, July.

Restrepia antennifera, *Illustrierte Monatshefte*, July.

Vriesia Magniniana × (Bareilleti × fenestralis), *Gartenflora*, July 1.

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

BIRDS AND FRUITS.—We have never seen small birds—in general—more plentiful than they have been this season, especially starlings, swallows, sparrows, thrushes, and chaffinches, and never saw less inclination of the feathered tribe to molest fruit crops and seeds—probably there is a tangible reason for this—as we do not remember having been visited with such shoals of aphis and slugs, the food of many species. We are never willing to disturb birds, and use, as far as circumstances will allow, nets, wire protectors, and other means to keep them from fruits and seeds; but to attempt to protect all would entail more expense than the produce was worth. Birds soon get used to noises when often repeated to scare them; the noise of a gun becomes familiar in course of time. Two cats brought up in the garden—and which they will not leave when their home has been established among fruit bushes and trees, form profitable servants. A small hutch for shelter, as often used for rabbits, to which they can go and come, completes their domestic comfort, and no harm is done by the cats, but they themselves are a continual terror to the birds, and the latter are by them kept at safe distance from the crops. Tame hawks and owls, too, are capital workers, and their presence saves much in the way of nets, powder and shot, and shouting by the voice. These birds get very tame, and become attached to the men who are invariably kind to them. We lately saw a magpie sitting chattering on a workman's shoulder while he was plying his hoe. Speaking of tame birds, at Canon House, Stirlingshire, there is at present (August 14) a swallow's nest with five young ones, built on a Peach-house door, which is being continually opened and shut. *Birds' Friend.*

TOPPING PEAS.—It appeared at one time during June that Peas were likely to prove a failure from drought, and watering *ad lib.* seemed to do more harm than good, but the rains came in good time in superabundance, causing the haulm to break out afresh—showing a second crop, and by careful topping them to the level of the stakes, capital crops of extra quality are being gathered. Many object to the practice of topping Peas, but when judiciously done, with a good watering with liquid manure immediately afterwards, it causes a vigorous growth to start, and abundance of pods set and turn in for use. If there is a cessation of rain, good Peas may be expected very late this season; among a number of kinds on trial, we observe that the good old Ne Plus Ultra still holds its own. Its worst fault is the height it attains, and the best gatherings are from the top—so stopping is not of so much advantage with this kind as with some others. Dr. McLean has done first-rate—and not being a tall grower, its value is thus enhanced. Multum in Parvo among dwarfs has distanced all others—and is a profitable kind to grow—a row can be sown where ground would not be of much service for any other crop; Champion of England is bearing an excellent second crop, after being well-topped some weeks ago—but on poor shallow ground "topping" is better left alone. *T.*

FUCHSIAS OUTDOORS.—Although not definitely stated, the paragraph by "A. D." (p. 195) would lead one to the inference that Mr. Paice removed his Fuchsias to warmer quarters in the winter, and this is no doubt the best plan where the necessary accommodation is available; any dry shed that is perfectly frost-proof will be all that is required to keep them alive through the winter. But Fuchsias of many kinds form beautiful objects in the summer months if treated as herbaceous plants, by cutting down the stems as soon as the leaves are cut by frost in the autumn, and covering the old stools with a plentiful supply of coal-ashes [or fine leaf-mould, or even tree-leaves]; treated in this manner they require no staking or tying, and look more natural and pleasing than when the old stems are preserved. I have noticed Venus de Medici and Maid of Kent as being more hardy than some of the newer varieties, and among the species, F. corallina, F. globosa, F. gracilis, and F. Riccartoni, are some of the hardier kinds; the two latter will often stand the winter without any protection whatever. I noticed two beautiful rows of F. Riccartoni at Rufford Abbey a few days since; each row was about 200 feet long, and, being close to the lawn, the plants were shown off to perfection, and formed quite a remarkable feature in the garden. I think Mr. Doe said they stood the winter there without any protection. In cold localities they may be planted in corners near the walls of the mansion, and similar positions, where their roots will be drier and warmer than they would in the open border. *W. H. Divers, Ketton Hall, Stamford.*

HARDY FRUITS IN NORTH YORKSHIRE.—Since I wrote to you on the fruit crops in this part of Yorkshire, I have had time to frame out a more correct account than I was able to give in the early part of July. Bush fruit had a good promise, and where care was taken, either with mulching or watering, and in some cases both, the crop was heavy, and very fine. In many places where this was neglected, the crop was entirely lost, having been burnt up, so that it was not worth gathering. This happened in many places with farmers and cottagers. Strawberries scarcely lasted more than ten days or a fortnight, where they were not well cared for in mulching and watering; where these were attended to the crops were abundant, and good in quality. The Apple crop is not so good as one was led to expect; trees that had a fair good set of fruit went on falling until August; in some cases the crop is all gone. This happened before my own eyes. The falling process went on longer than I ever remember. In some counties the old saying is that Apples get christened on St. Swithin's day, and they are then safe. It was not the case in North Yorkshire this year. Another saying in Somersetshire is, after setting, the Apples go off to sheep-shearing, and will return at harvest—meaning, they will show themselves; with us they are like Halley's comet—a long time returning. Plums fell off in very dry places very much, but not to the same extent as did the Apples. Pears generally have not that tendency to drop as Apples have, but from the absence of sun last summer they have been as fickle as they can well be; some of the trees, instead of blooming at the proper time, have been in flower more or less all the summer. This will show what an unripe state the bloom-buds were left in last autumn. Some few Pear trees on the south wall have heavy crops on them, and had to be thinned severely; others are disfigured by caterpillars, and without fruit. Peaches and Nectarines are not much grown outside; where they are, failure is complete, and the trees are damaged considerably from the want of sun last summer, and the early severe frost on October 2 last autumn, gave them the finishing stroke. Apricots are a failure generally, but here and there we hear of a fine crop of fruit growing at the end of a cottage, where it is warmed by the chimney. The trees suffered very much last spring from canker and loss of branches; since then the bright sun in July seems to have put new life into them. *William Culverwell, Thorpe Perrow, North Yorkshire.*

HEAVY PEACHES.—I observe in the *Gardeners' Chronicle* of August 10, a case of extraordinary weight of Peaches Noblesse and Gladstone. I may say that I have just gathered six Albatross Peaches which weighed 4 lb., the largest of them being 14½ oz. in weight. *Thomas Oldham, Malvern Hall, Solihull.*

PENTSTEMONS IN THE OPEN IN WINTER.—It is found that few of the hybrids of which P. gentianoides is one of the parents, are sufficiently hardy to stand the rigors of an ordinary winter. Will some readers of the *Gardeners' Chronicle* give their experience of this matter. We know that P. gentianoides will live and flower abundantly if in winter it is covered with coal ashes, leaf-mould, or tree leaves to the depth of 8 inches. The plant is more graceful in habit than the hybrids, and makes a pretty bed or row. *M. W.*

ECHINOCACTUS PUMILA.—I have been in the habit of growing a few succulents, and amongst them the above species, which has produced buds, but as yet I have not seen the flower, unless what I call the bud is the flower as well; it is like a small camel's-hair pencil more than anything I can compare it to. I have watched it day after day, and night also, to see it, but to no purpose; but finding it swollen as if it had seed, I was curious to cut one of them, and found it was full of ripe seed, which is to me a mystery as yet; it has many buds or flowers, or both, if it is a flower at least. The plant is 1¼ inch high and three-quarters of an inch in diameter, with nine or ten buds. I should feel obliged to any readers of the *Gardeners' Chronicle* if they could enlighten me on this matter, as I am quite at a loss. It must be a very short-lived flower, if it opens at all, or else have a particular time of doing so. *J. S. C.*

AMERICAN BLIGHT.—During the dry and hot weather of June this pest assumed its perfect form, and in unprecedented numbers flew far and wide over the country. Many gardeners did not recognise the plague, as, although mealy in appearance, it was without the woolly covering peculiar to the more familiar larval stage. The serious character of the invasion, however, soon betrayed itself in white tufts on the branches and twigs of Apple trees which previously had been clean and healthy. Wherever the winged woolly aphides had settled, small colonies of young ones in the usual form of American blight speedily appeared in the axils of the leaves, until old wood and young were alike affected. In a very short space of time the bark was eaten through, and, in some cases, the branch so weakened as to be no longer able to support its load of fruit. There was no time to lose; so old paint-brushes and various insecticides were looked up, and various experiments were tried upon the sensitive backs of the woolly aphides. I found that the chief merit was in the brush, for the least touch of the bristles disagreed with them. Gishurst Compound, soft-soap, paraffin, linseed oil, methylated spirits, tobacco-juice, and decoction of quassia chips, all are good; but one application does not suffice, as, although all die that are touched, one is sure to miss some of the less conspicuous tufts, and at this season of the year the woolly aphis breeds at a surprising rate. It should be followed up now whilst it is visible, for by-and-bye it will go into winter quarters, and be less easy to find. So seemed to think a fine white-throat last Sunday, which I watched making a hearty meal off American blight on a standard Apple tree that had not been cleaned. When he had finished he wiped his beak with an air of having done his duty, and found it agreeable! *W. R., Streatham Hill.*

ROSCŒA PURPUREA.—There can be no doubt of the hardiness of this plant (p. 186). I have grown it without protection for many years. It was killed by the drought of 1887; but I have another plant which has been in flower now for more than a month. *Rev. Canon Ellacombe, Bitton Vicarage.*

CALYSTEGIA PUBESCENS FLORE-PLENO.—This pretty and useful twining plant, is apparently rarely met with. It will adapt itself to almost any aspect, is perfectly hardy, and will thrive in ordinary garden soil. The Calystegias are known as Bindweeds, or Bearbind, as are some other members of the Convolvulus family, and come from China. Just now, there are several fine specimens in flower at the Fulham Road entrance to the West Brompton Cemetery, trained in pairs on bean-sticks, tied with a view to forming arches. The notion is certainly a good one, and very suggestive of the habit of the plant, but I think that they would have an infinitely more pleasing effect when growing on strings against a wall or bank, or on wire trellises. A box full of its blossoms accompanies this notice, which were given me by the gate-keeper there, and you will observe that they are of a particularly soft and mellow tint, very double, of somewhat similar size and colour to an ordinary flower of the Lady Hume's blush Camellia, or a small La France Rose. Unfortunately, the old flowers soon close up (characteristic of this order), but are continually replaced by young blooms, for the Calystegia pubescens flore-pleno is a prodigious bloomer. *W. Napper, Chelsea.* [Large blooms of the usual soft blush tint. The plants look best in a mass against a wall; and when once planted in suitable soil, and in a warm position, it is not readily eradicated. Ed.]

YUCCA ALOIFOLIA.—The photograph herewith sent is that of two plants of Yucca aloifolia variegata growing in the conservatory of Kinbury House, the residence of John Paterson, Esq., Provost of St. Andrews. They are plants about twenty years old, and have never been cut down. One of them has previously flowered twice, and the other once. The height of the plants from the surface of the pots is 9 feet, the flower-spikes measuring 2 feet.

The flowers are creamy-white, and have continued in good condition for nearly a month. These plants, with their lanceolate variegated leaves, surmounted by the tall graceful spikes of flower, have a most unique and stately appearance. I am indebted to Mr. D. Dewar, who has the management of the gardens, for the photograph and details. *James Wilson, jun., Greenside Nursery, St. Andrews, N.B.*

PELORIA IN LARKSPUR.

For the specimen whence our illustration (fig. 35) was taken, we are indebted to Dr. Conwentz, of Dantzig. As will be seen, the flower is destitute of the usual spur, and is thus rendered regular; while the parts of the flower are all more or less leafy. Such degenerations are curious and useful, as indications of the plan upon which such flowers are formed, and of the modifications they usually undergo during their growth and development. In them the development has been, from some cause or another, checked, and the result is a regular and more or less leafy flower. The five carpels, even, are represented by small green leaves, with rudimentary ovules on their margins.

CURLED LEAVES.

The accompanying illustration (fig. 36, p. 251) represents, on a reduced scale, a branch of Banksia marginata, for which we are indebted to Baron Von Mueller. It will be seen that the upper surface of the leaf is rolled back from the tip towards the base. Other cases of the kind are sometimes seen, as in the Salix annularis of gardens, which is merely a variation of the common Weeping Willow, as is proved by the occasional appearance of a shoot bearing leaves of the ordinary character. At Mr. Turner's nursery at Uxbridge, amongst a very choice and well selected collection of trees and shrubs, we lately noticed a whole quarter of the Laurel-Cherry, Cerasus Lauro-cerasus var. camelliæfolia with leaves of this character, forming a very desirable variety to the usual monotony of the common Laurel so called. The appearance is apparently the result of the disproportionate growth of the cellular and the fibrous part of the leaf, so that the midrib acts as a bridle and check. At least, this is the only explanation we can give, though that does not help us to the reason why.

SOCIETIES.

ROYAL HORTICULTURAL.

August 27.—The usual meeting of the Floral and Fruit Committees took place in the Drill Hall, James Street, Westminster, and was the occasion of a cheerful display of flowers in season, chiefly Gladioli, Dahlias, Asters, and herbaceous perennials, by nurserymen.

Of Orchids, there were but few, but some pretty Ferns and Bouvardias assisted the display. Fruit was represented by, chiefly, a collection of Plums; also a nursery exhibit. The professional gardener and the amateur were, as is too often the case, conspicuous by their absence. They will have a fine chance to redeem their character at the vegetable conference.

Floral Committee.

Present: Shirley Hibberd, Esq., in the chair; and Messrs. R. Dean, C. Drewry, W. Goldring, W. H. Williams, R. B. Lowe, W. Ingram, C. Noble, T. Baines, B. Wynne, H. Turner, M. T. Masters, J. Fraser, and L. Castle.

Of Dahlias, we remarked a goodly exhibit of show flowers from Messrs. Keynes, Williams & Co., Salisbury, to the number of five dozen, generally large, fine blooms, showing the master hand in preparation. Taking the certificated blooms first, there were Alice Emily, a pure yellow with a salmony-bronze centre—a massive, globular bloom; Reliance, a buff-coloured bloom with a tinge of purple in the centre; it is of medium size. Other nice flowers were—John Hickling, a clear bright canary-yellow; Crimson Globe, an exquisite tint—these, and the others shown, were seedlings of recent date. Cactus Dahlias worthy of mention—Honorie, yellow; Panthea, cinnabar-red; Asia, a pretty blush; Empress of India, claret (not new); Hy. Patrick, a white. Pompons were also shown, of which Fairy Tales, of a primrose-colour; and Eden, a crimson colour, were the prettiest.

Messrs. Kelway & Son, Langport, made a brilliant array of spikes of Gladioli, amongst which were many fine spikes and beautiful colours; Vulso, a rosy-red flower, with a white throat, and Duke of Fife, a flower with rosy-crimson flakes on a white ground, met the approbation of the committee. In many instances the flowers individually equalled in size those of an ordinary Amaryllis. Gaillardias and show and fancy Dahlias formed part of the exhibit of this firm. A Silver-gilt Banksian Medal was accorded the exhibitors.

Seedling Dahlias of the Cactus section were shown by Messrs. H. Cannell & Sons; and of the show class by Mr. S. P. Haines.

A varied display of hardy flowers came from Mr. T. Ware's nursery, Tottenham, the more prominent subjects being Cactus and single-flowered Dahlias, Lilies, Iceland Poppies, Satyriums, &c. In the former, mention may be made of Beauty of Brentwood, a fine purplish-crimson, and Professor Baldwin, a scarlet flower. In single varieties there were Florrie Fisher, purple and white; Isaac Pitman, lilac speckled with crimson; and Miss Kennett, yellow,



Fig. 35.—PELORIA IN LARKSPUR.

speckled and striped with scarlet. Pompone Dahlias formed a part of the exhibit. A sulphur form of the Iceland Poppies is a novelty; it was named Papaver nudicaule sulphurea. The variety is said to come true at the nursery from seed. Satyrium carneum, and S. carneum roseum, a brighter form of the first-named, were shown in robust examples; also S. aurantiacum, an orange-coloured species. A fine strain of Scabious, named Snowball, apparently a great improvement on any white of German origin, and bunches of flowers of Watsonia rosea were shown in this collection.

Hardy perennials and "picture" trees and shrubs formed an interesting exhibit from Messrs. Paul & Son, The Old Nursery, Cheshunt. Amongst the best flowers of the season are Aster, A. Shortii has a dense head of blue flowers; A. bessarabicus has large purple flowers and a stiff, less dense habit. Several forms of Anemone japonica, viz., A. j. rosea; A. j. elegans, were noticed, also two handsome Rudbeckias, Neumannii, yellow rays and black disc, and purpurea light purple rays and black disc; Rosa rugosa and R. r. flore-pleno (Comte d'Empresnal), the latter a darker shade of purple, and with two or three rows of petals, whilst in other respects it resembled the type. The deep blue-flowered Clematis Hendersoni; shoots of many variegated-leaved shrubs and trees were shown; several robust decorative grasses, and Arundo conspicua, and Paul's New Rose Cheshunt Scarlet, a bright coloured Noisette, were found in the group.

Messrs. Fisher, Sibray & Son, Sheffield, showed a quite new Yew in Taxus adpressa, a plant with golden variegation, quite distinct and likely to prove of value in the garden. Another variety, shown probably for sake of comparison, was a variegated Irish Yew. Two forms of Lapageria rosea were likewise shown; L. r. maculata, with white marbling in the throat, of a conspicuous character; and L. r. profusa, in which this is much less marked, and which possesses the greater substance in the flowers.

Several new plants came from Mr. B. S. Williams' Nursery, Upper Holloway, these included three new Anthuriums, with large leaves and paleish spathes, their value, therefore, depending more on the former than on the latter. A. gandavense has a salmon-pink spathe, A. Paradise has a blush-pink spathe, and A. candidum a white one. Sarracenia decora is a plant whose pitchers stand 9 inches high, and are of a bright brown colour, with numerous circular, white tesselations. Dracæna indivisa variegata is a good decorative plant; a panful of Cypripedium œnanthum exhibited the good points of this species well. A sturdy bushy-habited Carludovica palmifolia was the finest plant of the collection; excellent for subtropical gardening and general decoration.

Messrs. J. Veitch & Son, Chelsea, showed Phaius phillipenensis, a species with a slender spike surmounted with four flowers, whose petals are fawn coloured, sepals and tube white, the latter being 1 inch in length, and with a circle of rose-coloured stripes, showing in the interior at about halfway down (see p. 239). Warmhouse Rhododendron Ophelia, a salmon colour, with a suffusion of purple over it, was admirable, and is one of the prettiest they have yet raised. Many others were shown, of which we may mention Thetis, a yellow; and Balsaminæflora rajah, orange and scarlet, with the rudiments of a double flower. The fine new Lily, Nepalense, was shown, a plant of 5½ feet, surmounted with one of its rich-looking flowers.

Many fine seedling Ferns in Pteris and Adiantum came from Mr. May's nursery, Upper Edmonton; Pteris serrulata densa is of a neat dwarf habit of a density not usual in Pteris, and with fronds so much divided at the ends as to resemble moss. P. leptophylla princeps is a desirable variety, with a dark green edge to its pinnæ.

Some very fine Bouvardias came from this exhibitor, including the best of the old varieties, and B. Hogarth, fl.-pl., rose coloured. Many well-coloured small Crotons formed part of the exhibit, as did Carnation Mrs. H. B. May, a deep cerise with a continuous flowering habit.

Mr. Stevens, St. John's Nursery, Putney, showed a sport from Pompone Chrysanthemum Precocité, named Maude Pitman; it is of an orange colour, and very free to bloom.

Messrs. Paul & Son, Cheshunt, exhibited standards of Hedera latifolia maculata; and Mr. G. Jackman & Sons, Woking, Clematis Baron Veillard, for Baron Veillard, Orleans. It is a puce, five-petalled flower, and very free, flowers 4 inches across.

A few fine Hollyhock blooms of a variety named Delicata, came from Messrs. Webb & Brand, Saffron Walden; Mr. R. Dean showed Dwarf German, and New Victoria Asters.

Mr. J. T. West, Cornwall, Brentwood, showed Cactus Dahlia Marchioness of Bute, white, tipped with purplish-rose—the flowers 6 inches across, very effective, either cut or on the plant.

A strain of Chrysanthemum flowered Aster, termed New Queen, came from the establishment of Messrs. J. Carter & Co. All have nice well-formed flowers, and are of compact dwarf habit, some very much so. The exhibit was divided into groups of various colours. A pretty selection of bedding Violas was shown by Mr. T. F. Dranfield, Valentines, Ilford.

Orchid Committee.

Present: Maxwell T. Masters, in the chair; and Messrs. H. Williams, H. M. Pollett, J. Dominy, C. Pilcher, E. Hill, J. O'Brien, and L. Castle.

But few Orchids were shown, and, with regard to one of the plants, the question was raised, whether Orchids of early importation, but which are still scarce, are entitled to a certificate. The Secretary stated they were, if the committee decides that they merit the distinction. A small specimen in flower of Phaius phillipinensis was shown by Messrs. J. Veitch & Sons, a full description of which will be found in our new plant column (p. 239).

Mr. Cullimore, gr. to Malc. Cook, Esq., Kingston, Hill, exhibited Cook's variety of Lælia elegans, a flower possessing a larger and finer-coloured lip, and sepals and petals differing in colour somewhat from

the type, of which several plants were likewise shown by him.

Mr. Whillans, gr. to the Duke of Marlborough, Blenheim, also showed several varieties of Lælia elegans; and one, The Duchess, was considered sufficiently distinct to obtain a Certificate.

H. J. Hollington, Esq., Forty Hill, Enfield, received a Vote of Thanks for a fine Cattleya crispa var., the lip deep crimson, and petals and sepals pale mauve.

A small and pretty Angræcum Chailluanum, with two spikes of white blossoms, was shown by Mr. Cowley, gr. to F. G. Tautz, Esq., Studley House, Hammersmith. The plant, although at present it is scarce, is not unknown to collectors. It is of slender growth, the raceme 9 inches long, clothed with numerous flowers, with white, acute, recurving, narrow petals and sepals; the tail 4 inches in length, and green.

Fruit Committee.

Present: R. D. Blackmore, Esq., in the chair; and P. Crowley, J. Cheal, W. Bates, G. W. Cummins, J. Willard, T. G. Saltmarsh, G. Bunyard, G. Wythes, J. Hudson, F. Lane, J. Smith.

A collection, consisting of nineteen varieties of Plums and a few dishes of early Apples, came from Messrs. J. Veitch & Sons. Messrs. J. Cheal and A. H. Smee, Esq., Wallington, sent sixteen dishes of Apples. W. Roupell, Esq., Streatham, showed an Early Russian Apple of a taking colour and fair size; and the Petite Marguerite Pear. Melons were shown by various growers, but no comments are necessary.

Awards were made as follows:—

By the Floral Committee.

First-class Certificates.

To Taxus adpressa variegata, from Messrs. Fisher, Son & Sibray.

To Pteris serrulata divisa, from Mr. H. B. May.

To Carludovica palmifolia, from Mr. B. S. Williams.

To Sarracenia decora, from Mr. B. S. Williams.

To Satyrium carneum var. roseum, from Mr. T. S. Ware.

To Watsonia aurea, from Mr. T. S. Ware.

Awards of Merit.

To Dahlia (Cactus) Marchioness of Bute, from Mr. J. T. West.

To Bouvardia Hogarth, fl.-pl., from Mr. H. B. May.

To Rhododendron Ophelia, from Messrs. J. Veitch & Sons.

To Chrysanthemum (pompon) Maud Pitcher, from Mr. J. Stevens.

To Hollyhock delicata, from Messrs. Webb & Brand.

To Dahlia F. K. Temple, from Mr. T. S. Ware.

To Papaver nudicaule sulphurum, from Messrs. T. S. Ware.

To Gladiolus Duke of Fife, from Messrs. Kelway & Son.

To Gladiolus Vulso, from Messrs. Kelway & Son.

To Dahlia Panthea, from Messrs. Keynes, Williams & Co.

To Dahlia Crimson Globe, from Messrs. Keynes, Williams & Co.

To Dahlia John Hickley, from Messrs. Keynes, Williams & Co.

To Dahlia Reliance, from Messrs. Keynes, Williams & Co.

To Dahlia Alice Emily, from Messrs. Keynes, Williams & Co.

Strain Commended.—Dwarf German Scabious, to Mr. R. Dean.

Medals.

Silver-gilt Banksian Medal to Messrs. Kelway & Son, for collection of Gladioli.

Silver Banksian to Mr. T. S. Ware, for collection of Dahlias.

Silver Banksian to Mr. H. B. May, for collection of plants.

Bronze Banksian to Messrs. Paul & Son, for collection of cut flowers.

Bronze Banksian to Mr. Malcolm Cooke, for group of Orchids.

By the Orchid Committee.

First-class Certificates.

To Lælia elegans Duchess, from the Duke of Marlborough.

To Lælia elegans Cook's var., from Malcolm S. Cooke, Esq.

To Angræcum chailluanum, from F. G. Tautz, Esq.

Botanical Certificate.

To Catasetum tabulare var., from Mr. B. S. Williams.

By the Fruit Committee.

Cultural Commendation.

To A. H. Smee, Esq., for a Collection of Apples.

Bronze Medal.

To Messrs. James Veitch & Sons, for a Collection of Plums, &c.

DEVON AND EXETER SHOW.

August 14.—This exhibition took place on the Northernhay Pleasure Grounds, Exeter, by the kind permission of the Town Council. The entries were numerous, and though some of the old and principal exhibitors were absent from the lists, a great number of new names appeared, whose exhibits well sustained the reputation of the Society's exhibitions.

Vegetables were very good, the collections especially so. The fruit classes were well contested, and showed no signs of falling off in quality, as compared with former exhibits.

Messrs. Veitch & Son, Royal Exotic Nursery, Exeter, had a grand display, extending one side of

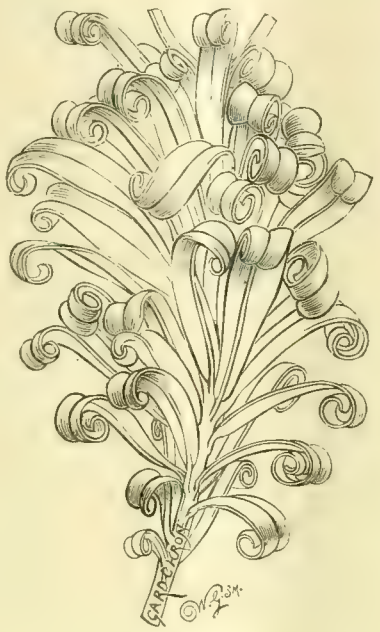


Fig. 36.—Curled leaves in Banksia marginata.

the centre table of one tent, nearly 100 feet in length. Beautiful varieties of Japanese Maples, graceful Palms, Dracænas, and Tree Ferns in variety, formed a background, while in front were staged boxes of handsome Gladioli, Roses, Hollyhocks, Asters, Penstemons, Dahlias, &c., with a variety of well-grown plants of Orchids, Lilium auratum, several varieties of the new greenhouse Rhododendrons, and a fine collection of single and double-flowered tuberous Begonias; boxes of Carnations contained remarkably fine and well-shaped flowers. This was about the best display ever made by this firm at an Exeter show, and attracted much attention. Mr. S. Randall, nurseryman, of Exe Bridge, exhibited a nice collection of stove and greenhouse plants, including Palms, Dracænas, Aralia Veitchii, Begonias, Orchids, Ferns, &c. Messrs. Garman & Co., of Chard, staged a fine lot of blooms of Gladioli, four boxes of prime blooms of Carnations, Double and Cactus Dahlias in variety, and a box of flowers in variety. Mr. C. S. Sclater, Heavitree Nurseries, staged three boxes of Cactus, pompon and double Dahlias, of good blooms. Mr. Davis, Yeovil Nurseries, put up a magnificent lot of cut blooms of single and double-flowered Tuberous Begonias. Mr. W. B. Smale, of Torquay, exhibited fine boxes of blooms of Gladioli, pompon Dahlias, and zonal Geraniums.

Open.—Forty-eight Dahlias, Double, Distinct—1st, Mr. J. Nation, with a very fine lot of blooms, including H. Walton, General Grant, W. G. Grace, Colonist, Buttercup, Peacock, Gaiety, W. Rawlings, A. F. Barron, Herbert Turner, Artiste, Hon. S. Herbert, Modesty, H. Keith, Ronald. J. Goodwin, Mrs. W. Dodds, Rev. J. B. Camm, Yellow Boy, S. Hibberd, Crown Prince, G. Dixon, Mrs. Saunders, Imperial, Mrs. Gladstone, Jessie McIntosh, Ovid, Queen of the Belgians, Prince Henry, Professor Fawcett, Goldfinder, George Smith, Mr. S. Hibberd, Prince Bismarck, W. Dodds, Mrs. Harris, J. L. Toole, J. Cocker, T. J. Saltmarsh, John Bennett, Wizard, Walter, Mrs. Langtree, Mrs. D. Saunders, Prince of Denmark, and R. T. Rawlings.

Gladioli were well shown by Mr. Poynter, of Taunton, and Mr. Rowland.

General Prizes.—Nine stove and greenhouse plants in flower, distinct.—1st, Mr. Rowland, whose collection included Allamanda Hendersoni, Ixora Williamsi, Anthurium Andreanum, with seventeen spathes; Dipladenia amabilis, Bougainvillea glabra, Eucharis, good; Ixora princeps, Lapageria rosea, and Stephanotis floribunda, all fresh and healthy-looking plants.

Miscellaneous collection or group of plants arranged for effect in a circle 12 feet diameter.—1st (Silver Cup), Mr. Rowland again taking 1st place with a charming group, very tastefully and artistically arranged. He had a fine Cocos Wedelliana in the centre, with Eulalias, Crotons, and graceful Ferns, mingled with Gloxinias, Bouvardias, Ixoras, Francoas, Lilium auratum, &c.; 2nd, Mr. A. C. Williams, gr. to W. C. Sim, Esq.

Miscellaneous ditto, with a diameter of 8 feet.—1st, Mr. W. Snell, gr. to Colonel Garratt, who had a very pretty group, which included a fine Phœnix reclinata in the centre, with well-coloured Cyperus alternifolius variegatus, and Dracæna terminalis, Crotons, and Ferns, with Begonias, double and single, Gloxinias, Achimenes, Celosias, &c.; 2nd, Mr. F. Prothero, gr. to T. Knapman, Esq.

Fuchsias, Cockscombs, Begonias, Pelargoniums, and Dahlias, were all well represented.

Fruit.—Collection of ten kinds of fruit.—1st, Mr. Iggulden, with a splendid lot of fruit, including large bunches, fine berries, and well coloured, Black Hamburgh Grapes, Smooth Cayenne Pine-apple, fine and highly-coloured Bellegarde Peaches, Hero of Lockinge Melon, Moor Park Apricot, Jargonelle Pear, and Muscat of Alexandria Grapes, Oullin's Golden Plum, Lord Napier Nectarines, and Brown Turkey Figs; 2nd, Mr. J. Ebbutt. In this class several exhibitors were disqualified, through having too many fruit in their dishes, otherwise they would have been prize-takers, having in each case excellent fruit.

Collection of six kinds of fruit, Pines excluded.—1st, Mr. Crossman, gr. to J. Brutton, Esq., comprising Black Hamburgh Grapes, Moor Park Apricot, Dymond Peach, Hero of Lockinge Melon, Greengage Plum, and Pine-apple.

Other collections of fruit, such as Grapes, Pines, Peaches, Nectarines, and Melons, were well shown by Mr. Iggulden, Mr. Crossman, Mr. Bull, Mr. Copp, and others.

Vegetables.—Collection of vegetables, twelve kinds.—Mr. G. H. Copp won the 1st place easily, with a splendid collection, each dish being remarkably good. It contained Veitch's Autumn Giant Cauliflower, Sutton's Intermediate Carrot, Elcombe's Improved Parsnip, Snowball Turnip, Veitch's Main Crop Onion, Sutton's Perfection Tomato, Duke of Albany Pea, Pragnell's Beet, Sutton's Seedling Potato, Ne Plus Ultra Runner Beans, Lyon Leek, and Wright's Grove White Celery; 2nd, Mr. Mairs, who also staged an excellent lot; 3rd, Mr. W. R. Baker. This show is noted for the excellence of the vegetables, but there has never been a better lot than those staged this year, each competitor staging first-class lots.

Other exhibitors were Mr. Mairs, Mr. Baker, Mr. Sparks, and others.

Several collections of wild flowers were staged, and were quite a novel feature of the show. *D. C. Powell.*

BASINGSTOKE HORTICULTURAL.

August 20.—The annual exhibition was held on the above date, in the Vicarage grounds. The entries—more than 600—outnumbered any previous year by eighty. The show was remarkable for the number and very good quality of the vegetables exhibited.

Fruit was shown in large quantities, and was of first-rate quality. Plants were staged in large numbers, and in good taste, the ladies' classes making a feature of great interest. The exhibits were arranged in four tents, in which there was ample

space to promenade. The arrangements reflected much credit on the Hon. Sec., Mr. A. Wallington, and his assistant, Mr. H. Weeks. Amateurs' and cottagers' vegetables were capitally staged.

For a collection of twelve distinct varieties, there were four entries, and close competition. First honours fell to Mr. R. Lye, gr. to W. H. Kingsmill, Esq., Sydmonton Court; Mr. J. Bowerman, gr. to C. Hoare, Esq., Hackwood Park, Basingstoke, was a good 2nd, the exhibits in both instances being remarkable for good quality.

Messrs. Sutton & Sons, of Reading, offered prizes for six distinct varieties of vegetables sold by them, and which brought four entries, Mr. Bowerman and Mr. Kneller securing 1st and 2nd prizes.

Messrs. Webb & Sons, Stourbridge, likewise offered prizes for the same number, and again there were four entries, Mr. Bowerman and Mr. Kneller again taking the leading awards.

Mr. Kneller and Mr. Bowerman showed the best Onions. Mr. Kneller's twelve bulbs weighing 30 pounds.

Mr. Lye easily won the 1st prize for nine varieties of Potatos.

Fruit.—Mr. T. Osman, gr. to L. J. Baker, Esq., Ottershaw Park, Chertsey, was the winner in the collection of six dishes. Black Hamburgh Grapes were shown by seven gardeners, the 1st honours falling to Mr. Bowerman.

Plants.—This class was for twelve specimens in or out of bloom, which brought three competitors. Mr. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, was 1st, with well-grown examples of the usual species; Mr. J. Currey took honours for six good specimens, and Mr. T. Russell for a specimen flowering plant. Mr. Currey, with a capital Croton Prince of Wales, was 1st in the specimen foliage class; and Mr. Wills was 1st for six exotic Ferns, and Mr. Kneller took the leading prize for eight hardy Ferns. Mr. T. Russell staged Fuchsias 7 feet in height, freely flowered, and not too stiffly trained. Mr. Wills won a special prize of £5, for a group of plants.

Cut flowers from the stove, greenhouse, and open air formed a notable feature. The Roses in some cases were fine for the time of year, but there was nothing very noteworthy in any class, and there were the usual instances of good and bad setting up.

Mr. G. Trinder, gr. to Sir H. St. John Mildmay, Bart., Dogmersfield Park, Winchfield, exhibited (not for competition) cut blooms of Ivy-leaved Pelargoniums in twenty-four varieties, that were much admired. Messrs. Sutton & Sons, Reading, staged a capital collection of cut blooms of herbaceous plants and annuals. *Correspondent.*

SHREWSBURY FLORAL FÊTE.

The fourteenth annual exhibition was held in the Quarry Grounds, Shrewsbury, on the 21st and 22nd inst., and, taking the exhibits throughout, there was a wonderfully fine display. A schedule of £400, with many large leading prizes, is calculated to bring leading exhibitors, and Shrewsbury has a well-earned reputation for its exhibitions, and both quantity and quality is the rule throughout.

Plants.—One large spacious tent was devoted to plants and groups, one side of the centre being taken up by the three lots of twenty stove and greenhouse plants, not less than ten in bloom, and a bank of finer specimens is rarely seen. Mr. Finch, gr. to J. Marriott, Esq., Coventry, was 1st, with grand specimens of Cycas circinalis, Latania borbonica, Kentia Forsteriana, and Kentia australis, a grand Croton Mortii, and Crotons angustifolius and Victoria, well coloured, with the following in bloom, viz.:—Dipladenia regina, Miltonia spectabilis in a pan, the plants 3 feet high, and 2½ feet through, and well flowered; a fine Lapageria alba, Ixoras Williamsii and Fraseri, Ericas Lindleyana, Thompsoni, and Marnockiana; Allamanda Hendersoni, Stephanotis floribunda, Dipladenia amabilis, Rondeletia speciosa major, and Tabernemontana coronaria, fl.-pleno. Mr. Cypher, Cheltenham, was a very close 2nd, with plants of his usual style. Flowering plants, Ericas Thompsoni, Ewersana, a fine exhibition variety, bright in colour; ampullacea Barnesii, a grand plant; and Irbyana, very fine; Allamanda nobilis, a wonderfully-flowered Bougainvillea glabra, Clerodendron Balfourianum, Statice profusa, Ixora Williamsii, Stephanotis floribunda, Crotons Sunset, superbly coloured; angustifolium and majesticum; Cycas revoluta, a very fine Latania borbonica, Cycas circinalis, &c. Mr. Roberts, gr. to A. Nicholson, Esq., Leek, was a good 3rd, with four fine Crotons, four Ixoras, a good Lapageria alba, and other plants.

Nine stove and greenhouse plants, not less than five in bloom.—1st, Messrs. Pritchard & Son, Shrewsbury, with a fine Davallia Mooreana, and Erica ampullacea major, and other plants; 2nd, Mr. E. Flock, gr. to the Marquis of Cholmondeley—in this lot was a good specimen of Cattleya Gaskelliana.

Six stove and greenhouse plants, for gentlemen's gardeners residing in Salop.—Lord Berwick's gardener was 1st.

Exotic Ferns were well represented in both classes, and generally very fine. In Col. Wingfield's lot were fine examples of Neotopteris australasica and Davallia Mooreana.

Three excellent lots of six plants in flower were staged.—1st, Mr. Cypher, with Statice profusa, Ericas Ewersiana and Marnockiana, Clerodendron Balfouriana, Bougainvilleas glabra and Allamanda grandiflora.

Palms, Dracænas, Caladiums, and Fuchsias were shown in good form all round, as were also zonal Pelargoniums, but some of the plants greatly overpotted. The Hon. Mrs. Herbert's 1st prize doubles were a well done lot; and the 1st prize lot of six Tuberous Begonias, exhibited by Gen. Jenkins, Cruckton Hall, were well-grown plants and well flowered.

In the class for groups 100 square feet, there was a close competition, and some very meritorious groups were set up. Exhibitors at Shrewsbury are allowed to win two prizes in a class, and S. Burlieu, Esq., Didsbury, near Manchester, was both 1st and 2nd, with artistically worked out groups.

Six stove and greenhouse plants, not less than three in bloom, for amateurs only.—There were four entries, Henry Owen, Esq., The Cedars, taking the 1st position, with an excellent lot, even in size, and well done. The other plants staged throughout the amateur classes were very creditable to the growers of them.

Cut flowers.—These were a strong feature, Dahlias especially so, and there was a very close competition.

For thirty-six blooms, 1st, Messrs. Heath & Son, Cheltenham.

For twenty-four blooms, the prizes fell to the growers just named, and in the same order. The amateurs also showed well in the Dahlia classes in their division. Some good Roses were staged, and in the class for twenty-four blooms, Messrs. Perkins & Sons, Coventry, were both 1st and 2nd, and in their lot was a very fine bloom of the new variety, Gloire de Margottin, bright rosy-crimson.

For eighteen Roses, Messrs. Heath & Son were 1st.

Mr. Burrell, of Cambridge, took 1st and 2nd prizes for two fine lots of eighteen Gladioli. Snowdon, a very beautiful light variety, and a variety, L'Africaine, novel in colour, cream and chocolate, with light throat, attracted much attention, were the finest blooms.

Asters were numerous, and some good blooms were staged.

In the class for twelve bunches of stove or greenhouse cut flowers, Mr. Blair, gr. to the Duke of Sutherland, Trentham, was 1st, with a superb lot, well set up.

Six bunches.—S. Baerelis, Esq., Didsbury, was 1st, with a well-mounted lot; Messrs. Pritchard & Son 2nd, and would have been 1st, had the flowers been better set up.

For twelve bunches of hardy herbaceous cut flowers there was keen competition. Messrs. Burrell & Co., Cambrian, were 1st, for a superb lot.

Some very fine bouquets were staged, the 1st prize in each class falling to A. Heine, Esq., Fallowfield, Manchester, for exquisitely finished bouquets; 2nd in each class, Messrs. Perkins & Sons, Coventry, who showed in their usual first-class style.

Fruit.—The fruit department of the show was a strong one. In the class for twelve varieties, Mr. Goodacre, gr. to the Earl of Harrington, was 1st, with Black Hamburgh, Gros Maroc, Muscat of Alexandria, and Foster's Seedling Grapes, Cayenne Pine, Hero of Lockinge Melon, Peaches, Nectarines, Plums, Apricots, and Cherries; 2nd, Mr. Dawes, The Gardens, Temple Newsam, with Brown Turkey Figs, Pitmaston Orange Nectarines, very fine Royal George Peaches, Roman Apricots, a good Queen Pine, and good Grapes, but not so fine as Mr. Goodacre's.

For a collection of nine dishes (open to Salop only), 1st, Mr. Milner, Sundorne Castle Gardens, Shrewsbury, with a first-class lot.

Six bunches of Black Grapes, three varieties.—Mr. Goodacre was 1st, with two bunches each of Madresfield Court, Black Hamburgh, and Gros Maroc, well coloured, and with size in bunch and berry.

For three bunches of Black Hamburghs, 1st, Miss Evans, Prescott.

Three bunches of Black Grapes, any other variety.—1st, Mr. N. Pilkington.

Four bunches of White Grapes, two varieties.—1st, Mr. Edmunds, gr. to the Duke of St. Albans.

Three bunches of White Grapes, Muscats.—1st, J. T. Harris, Esq., Stone.

Three bunches of White Grapes, any other variety.—1st, Miss Evans, with highly coloured, well-formed bunches of Buckland Sweetwater.

Four bunches of White Grapes, open to the county of Salop only.—1st, Mr. Milner, Sundorne Castle.

Four bunches of Black Grapes, open to the county of Salop only.—1st, Mr. S. Bremmell.

The class for six Peaches was well filled; the Earl of Shrewsbury 1st, with highly coloured, fine Royal George.

Good Nectarines and Apricots were shown, and Mr. Blair's First-prize Green Gage and Victoria Plums were fine.

Melons in the various classes were very numerous, and the judges evidently did not think they could be accurately judged without cutting. In fact, the schedule distinctly states "to be judged by flavour." For green-fleshed, Mr. J. G. Morris was 1st, with Hero of Lockinge; and for scarlet-fleshed, Sir Rd. Sutton, Bart., was 1st with Pride of Stourbridge.

Vegetables.—There was an immense display of vegetables, and high-class quality prevailed. The judges had laborious work, as the entries were so great. For the Society's prize of twelve varieties of vegetables, there were several exhibits: 1st, Mr. J. Lambert, gr. to Col. Wingfield. Six varieties of vegetables, open to the county of Salop only: 1st, Col. Wingfield. Potatos generally were very fine, clean, and numerous; and Tomatos were fine.

Special Prizes given by Messrs. Webb & Sons, and Messrs. Sutton & Sons, were well responded to. Messrs. Webb & Sons gave five liberal prizes for eight kinds of vegetables, and there were fifteen exhibitors. Col. Wingfield was 1st, with a grand lot.

Messrs. Sutton & Sons, gave four prizes as follows: Single Melon, either Empress, Imperial Green, Scarlet Invincible, or Hero of Lockinge, all introduced by them.

In this class there were twenty exhibitors, C. L. Campbell, Esq., Ross, winning the 1st position with Hero of Lockinge. For Cucumbers, one brace of either Sutton's Improved Telegraph, or Purly Park Hero. 1st, Mr. Lockie, with a handsome brace of Purly Park Hero. Nine Tomatos, Sutton's Perfection, the Hon. W. P. Talbot was 1st, with as fine a dish as could be produced. Six Carrots, Sutton's Early Gem, an Improved Early Horn, there were thirteen exhibits, and all very fine, 1st, Mr. Abel Lowe, Donnington Wood. For thirty pods of Sutton's new varieties of Peas, several exhibits, 1st, Mr. S. Bremmell, with Sutton's Matchless. Mr. Lockie also staged, not for competition, two brace of handsome Lockie's Perfection Cucumber.

The Cottagers' display of vegetables and other products, not only filled a large tent, but a quantity of things had to go outside.

The honorary exhibits were an exhibition in themselves. Messrs. Birkenhead, Sale, Manchester, staged between 600 and 700 plants, and from 400 to 500 species and varieties. Amongst them we noticed the new Gymnogramma Muellerii, and G. schizophylla gloriosa, Adiantum Fergussonii, the violet-scented form, Lastrea fragrans, and Athyrium plumosum elegans. The Liverpool Horticultural Company sent a quantity of young nursery plants of Tea Roses in bloom. Messrs. R. Smith & Co., Worcester, sent a miscellaneous group of plants; Mr. A. Myers, Sutton Lane Nursery, Shrewsbury, a group of miscellaneous plants and fancy Pansy blooms; Messrs. Webb & Sons, a collection of vegetables; Messrs. Dicksons, Limited, a long group, arranged on tabling, of Crotons, and other ornamental foliaged and flowering plants—a bright, pretty lot, and cut flowers also. Messrs. Laing & Mather, Florists, Kelso, sent a collection of cut border Carnations; amongst them, R. H. Elliott, Germanio, Annie Douglas, Colonial Beauty, and others; Hollyhock spikes, and cut blooms. Messrs. J. Cheal & Sons, Crawley, a well-set up lot of newest Cactus, single, and pompon Dahlias. Mr. B. R. Davis, Yeovil, a large display of cut double and single Begonia blooms; amongst the doubles, Thomas Baines, lovely pale salmon; and Lorna Doone, soft shaded-pink, and beautiful. Mr. Edwin

Murrell, nurseryman, Shrewsbury, a fine display of Gladioli, Begonias, Roses, and single Dahlias, in cut blooms. Tea-scented Roses in pots, and a capital display of hardy ornamental shrubs in pots. Messrs. Copes & Son, Shrewsbury, staged a long bank of young Ferns, with cut flowers, and memorial wreaths and crosses. Messrs. Jones & Sons, Shrewsbury, sent Lilium auratum and Ferns, and rustic-work for Ferns. And Mr. Eckford, of Boreatton, sent some of his charming varieties of Sweet Peas.

The weather was unsettled, yet there was a very great attendance on both days, and, notwithstanding the heavy work of arranging the show; Messrs. Adnitt and Naunton, the Secretaries, deserve the highest praise for their work. It may be noted here that so well did everything work that the judges were able to begin their labours at a quarter past 10 o'clock, and finish it by the time the public were admitted. [Managers of shows please note. Ed.]

TROWBRIDGE HORTICULTURAL.

The usual annual exhibition took place on August 21, in a field adjoining the railway station, The exhibition was a good one, but Fuchsias, usually of much excellence, were not so good as usual, though a few very fine specimens were staged. There cut flowers were good, and the display of fruit and the vegetables throughout were of extra good quality.

Stove and greenhouse plants.—The best nine specimens in the open class came from Mr. H. Matthews, gr. to W. R. Brown, Esq., Trowbridge, Allamanda Hendersoni, Lapageria rosea and its white variety, Ericas McNabiana, Marnockiana, and Ewerіana, Rondeletia speciosa major being his best plants.

The best six plants came from Mr. J. Hiscock, gr. to E. B. Rodway, Esq., Trowbridge, and consisted of Allamanda Hendersoni, Stephanotis floribunda, Dipladenia amabilis, D. boliviensis, Eucharis amazonica, and Statice profusa. Mr. Tucker had the best three plants, staging Erica pilata, Oncidium flexuosum, and Lapageria rosea. Mr. J. Currey, gr. to Colonel Pepper, Salisbury, was 2nd, with Allamanda Hendersoni, A. grandiflora, and Erica Ewerіana. The best specimen plant, a fine piece of Cattleya Harrisoniana violacea, was from Mr. G. Pymm, gr. to Mrs. Gouldsmith, Trowbridge; Mr. J. Hiscock being a remarkably good 2nd, with a finely grown and bloomed plant of Stephanotis floribunda.

The best new or rare plant was a good piece of Schubertia grandiflora, from Mr. G. Tucker; Mr. W. C. Drummond, with Joinvillea, a small-leaved Pandanus-like plant, the middle portion of the leaves bright red.

Fuchsias.—The best six—two or three of them remarkable specimens—came from Mr. G. Tucker, who had Doel's Favourite, a locally-raised dark variety, that finds a place in almost every collection of Fuchsias found in the West of England, Mr. Rundle, Harriet Lye, one of the most charming of light varieties, Marginata, charming, very fine and another, a seedling. Mr. H. Matthews was 2nd, his best plants being Arabella, the Hon. Mrs. Hay, Alboccinea, &c.

In the amateurs' and cottagers' classes some excellent Fuchsias were also shown—plants much finer in every respect than are usually seen at flower shows.

Miscellaneous Flowering Plants.—Foremost among these were the tuberous-rooted Begonias, double and single. Mr. C. Richman, gr. to G. L. Palmer, Esq., Trowbridge, was 1st, with six single and six double-flowered varieties, both lots finely grown and bloomed. Petunias and Verbenas are always leading features, grown on sloping wire trellises, and generally carrying good heads of blooms. Cockscombs, Balsams, zonal and variegated Pelargoniums, Achimenes, Gloxinias, &c., were all good.

Ericas.—Though gradually disappearing from schedules of country shows, these yet find a place in that of the Trowbridge Society. Mr. J. F. Mould, nurseryman, Pewsey, was 1st, with Effusa, Austinana, oblata purpurea, Irbyana Aitoniana superba, and tricolor Wilsoni.

Orchids.—A class for 4 plants brought but one collection from Mrs. Gouldsmith, a local grower of some note. Her gardener, Mr. G. Pymm, staged very fair plants of Odontoglossum grande, Cattleya Harrisoniana, Oncidium flexuosum, and Vanda suavis.

Foliaged Plants.—The best nine came from Mr. J. Currey. Ferns and Selaginellas shown together in groups of fifteen plants are always a leading feature; the best collection, and a very good one it was, came from Mr. G. Tucker. Caladiums were somewhat poor, but Coleus a great feature. Mr. H. Matthews was 1st, with six superbly-grown and coloured plants.

Cut Flowers.—Some charming Roses were shown. The best twelve varieties, three blooms of each, came from Mr. J. Mattock, Headington, Oxford; 2nd, Dr. S. P. Budd, of Bath. Mr. Mattock also had the best stand of twenty-four varieties, single blooms.

In the amateurs' classes, for twelve trebles, and also with twelve blooms, Dr. Budd was 1st in both classes, having some excellent flowers.

Dahlias were a great feature, being largely exhibited. In the open class for twenty-four varieties, Messrs. Keynes, Williams & Co., Salisbury, had a superb lot of blooms, the following being especially good: Richard Dean, Colonist, Mrs. Foreman, Mr. Spofforth, Madame Soubreyve, Imperial, Henry Walton, Hubert Turner, Mr. Glasscock, Perfection, Gloire de Lyon, R. T. Rawlings, Mr. Gladstone, Lord Chelmsford, and Charles Wyatt.

The best twelve varieties came from Mr. S. Cooper, Chippenham, who had fine blooms of R. T. Rawlings, Harry Keith, Harrison Weir, Earl of Ravensworth, T. J. Saltmarsh, Burgundy, Henry Walton, Thomas Hobbs, Goldfinder, and Mr. Dodds; Mr. George Humphries, Chippenham, was 2nd, also in good form.

Mr. Humphries had the best twelve fancies, staging capital examples of the Rev. J. B. M. Camm, Plutarch, Hercules, Henry Eckford, Mrs. Saunders, Chorister, Salamander, Duchess of Albany, Hugh Austin, &c.

Certificates of Merit were awarded to the following new varieties of 1888:—Edith, a fancy in the way of Duchess of Albany, striped crimson and edged with white; Alice Emily, yellow, slightly suffused with orange-brown, Miss Fox, in the way of Miss Cannell, but heavily tipped with purple; and Crimson Globe, a bright crimson self.

Single Dahlias were a very pretty feature, being nicely arranged in bunches of six blooms. Mr. A. A. Walters, nurseryman, Bath, was 1st,

Messrs. Keynes, Williams & Co., had the best twelve bunches of Pompon Dahlias—a very good lot indeed.

Hollyhocks, in stands of nine blooms, showed great improvement upon last year. Gladioli, in stands of twelve varieties, were very good. Carnations and Picotees were as good as could be expected at this late season of the year, Mr. F. Hooper, Bath, and Mr. Geo. Chaundy, Oxford, taking the two principal prizes. Pansies, Verbenas, stands of twelve bunches of cut flowers, zonal Pelargoniums, and others were good throughout. German and French Asters were very fine indeed.

Fruit.—There was a good display all round. In the class for ten varieties, Mr. A. Miller, The Gardens, Rood Ashton, Trowbridge, was 1st, with a very good lot indeed, consisting of Alicante, Alnwick Seedling, and Foster's Seedling Grapes; Dymond and Goshawk Peaches, Albert Victor Nectarine, Washington and Kirke's Plums, Hero of Lockinge Melon, and Morello Cherries. Mr. W. Iggulden, The Gardens, Marston, Frome, had the best six dishes, staging Black Hamburgh and Muscat of Alexandria Grapes, Bellegarde Peaches, Lord Napier Nectarine, Brown Turkey Figs, and Cox's Golden Gem Melon. 2nd, Mr. A. F. Cray, Frome, also with a good lot, consisting of Black Hamburgh and Foster's Seedling Grapes, Bellegarde Peaches, Rivers' Orange Nectarine, Brunswick Figs, and Vicar of Bristol Melon. The best Pine-apples were Smooth Cayenne, Mr. A. R. Bull, Crediton, being 1st. Mr. J. Gibson, gr. to Earl Cowley, Chippenham, had the best two bunches of black Grapes, excluding Muscats, showing very good Black Hamburgh. The best two bunches of white Grapes, excluding Muscats, were finely-finished Buckland Sweetwater, from Mr. J. Atwell, gr. to T. E. Brain, Esq., Stoke Bishop. The best two bunches of Black Muscats were Madresfield Court, from Mr. J. Currey. Mr. Strugnill, gr. to A. R. Bailey, Esq., Frome, had the best two bunches of white Muscats. Apricots were very good, some excellent fruit of Moor Park being shown; the best came from Mr. J. Weston, gr. to the Rev. G. C. Layard, Furleigh. Melons were numerous, but there was nothing among them worthy of special mention. Green Gage Plums were both numerous and fine. Washington took the lead among dessert Plums. Kirke's and Oullen's Golden Gage being well shown also. Cherries were represented by fine Morellos. The best dish of Peaches was Royal George, from Mr. G. Pymm. The best dish of Nectarines (Pitmaston Orange), from Mr. C. J. Jones. The best two dishes of dessert Apples were Beauty of Bath and Red Quarrenden. The best two dishes of culinary Apples, Lord Suffield and Ecklinville. The best dessert Pears were Beurré d'Amanlis and Jargonelle.

Vegetables.—There is always a fine show of vegetables at Trowbridge, but this season it was particularly so; better quality throughout could scarcely be obtained.

SEVENOAKS HORTICULTURAL.

The twenty-second annual exhibition was held in Montreal Park on Wednesday, August 21. Four large tents were completely filled with excellent examples of plants, fruit, and vegetables, and in every class the competition was very keen.

Plants.—For six stove and greenhouse, Mr. Gibson, gr. to F. F. Burnaby Atkins, Esq., Halstead Place, was 1st, showing a fine Dipladenia (seedling), with upwards of a hundred flowers; Bougainvillea glabra, grandly flowered; Eucharis amazonica, and Allamanda grandiflora, as his best plants; 2nd, J. V. Goodman, gr. to Mrs. Crawshay, Bradbourne Hall, with Lapageria rosea superba, Ixora Williamsii, and Clerodendron Balfourianum, as his best specimens.

Foliage Plants.—Here Mr. Goodman was again to the fore, showing good examples of Alocasia Thibautiana, Croton Williamsii, and Anthurium Veitchii; 2nd, Mr. Waterman, gr. to H. A. Brassy, Esq., Preston Hall, Aylesford, Cycas revoluta and Alocasia Lowii being his best plants.

Groups for Effect.—There was a splendid lot, there being no less than nine competitors in the two classes; and in the very keen competition resulting, Mr. Fennel, Fairlawn, Shepbourne, Tonbridge, was 1st, with a pleasing arrangement of white and blue Campanulas, Ferns, and foliage plants; 2nd, Mr. Heath, gr. to C. R. C. Petley, Esq.; 3rd, Mr. Searing, gr. to R. Monckton, Esq.

Group of Ferns.—1st, J. V. Goodman; 2nd, A. Hatton.

Specimen Plant.—Here Mr. Gibson staged one of the finest specimens of Dipladenia Brearleyana that has ever been shown; it had between 200 and 300 flowers and buds, and was the admiration of every one who saw it.

Fruit.—For a collection of six distinct varieties, Mr. Goldsmith, Kelsey Manor, Beckenham, was 1st, with fine Peaches, Nectarines, and black and white Grapes.

Three bunches of Black Grapes.—1st, Mr. T. Osman, Chertsey.

White Grapes.—1st, Mr. C. Sutton, gr. to Earl Stanhope, Chevening.

Table Decorations, always a feature at this show, were again well done. Mr. F. Seale, of the Vine Nurseries, was the leading prize-taker in this class.

Mr. S. Cooke, gr. to De B. Crawshay, Esq., was awarded 1st prize for a hand-bouquet; the same exhibitor being to the fore with a dress spray.

Visitor.

EASTBOURNE HORTICULTURAL.

The annual exhibition was held on August 21, in the beautiful grounds of Compton Place, by the kind permission of F. J. Howard, Esq.

Plants were exceptionally good throughout, and were shown more extensively than in former years. In the class for eight stove and greenhouse plants, Mr. T. Portnell, gr. to Sir A. Lamb, Bart., Beauport, Hastings, was 1st, with a strong lot, his best being Ericas Austiniana and Ewersiana, Ixora Fraserii, and Dipladenia amabilis; Mr. F. Crossman, gr. to Misses Briscoe and Ore, Hastings, was a good 2nd, with fine plants of Ericas cerinthoides coronaria, and Aitoniana turgida, Bougainvillea glabra, and Clerodendron fallax, &c.

In the class for six, Mr. W. Jupp, gr. to his Worship the Mayor of Eastbourne, was 1st with a fresh lot of plants. Rondeletia speciosa, Dipladenia amabilis, Eucharis amazonica, and Erica Irbyana, being particularly well flowered; Mr. Portnell was placed 2nd, with good plants of Anthurium, Bougainvillea, and Dipladenia amabilis. For a specimen stove or greenhouse plant, Mr. F. Crossman, won, with a good plant of Bougainvillea glabra; Mr. J. Simmons, gr. to the Hon. Miss Ellis, Meads, being 2nd, with a well-flowered plant of Erica Aitoniana turgida.

For eight exotic Ferns, Mr. A. Offer, gr. to J. Warren, Esq., Handcross Park, Crawley, was 1st, with a good collection, Dicksonia antarctica, Cya-

thea Smithii, Thamnopteris nidus avis, and Gleichenia Mendelli being conspicuous; Mr. Simmons following with smaller and well-grown plants, Adiantums Williamsii and Farleyense, Davallia Mooreana, Microlepia hirta cristata being among them.

Ericas were well shown, Mr. Simmons being 1st with a well-flowered lot, and Mr. Portnell 2nd.

Groups of plants arranged for effect were a conspicuous feature, Mr. Simmons winning with a nice group, with a groundwork of Adiantums, and in which Campanula pyramidalis, Celosias, Liliums, and Gloxinias were very effective.

In the group for Ferns, Mr. T. Fuller, gr. to Mr. Hooke, Ashington, Upperton, was 1st with a pretty arrangement of Adiantums and Gymnogrammas.

For Fuchsias, Mr. Portnell was 1st with floriferous examples; and for zonal Geraniums, Mr. F. Wise was 1st.

In the Miscellaneous class, Mr. Jupp staged a fine group of medium-sized, well-grown, good-coloured Crotons, and Mr. G. T. Scott an effective miscellaneous group.

Cut Flowers.—For thirty-six and also for twenty-four cut Roses, Mr. A. Slaughter, of Steyning, was 1st, with very fresh blooms. For twenty-four bunches of cut flowers, Mr. Portnell was 1st, with a good collection. Asters were good, and were shown by Messrs. Crossman, Wise & Clapson, taking prizes in the order named.

For Dahlias (show), Mr. W. Gower, gr. to Mrs. Lawrence, Battle, was 1st. Annuals were an attractive feature, Mr. J. Blake taking 1st prize, with twelve of the best kinds in season. In the Miscellaneous class, Messrs. Cheal & Sons, of Crawley, staged a fine collection of the different groups of Dahlias; and Mr. Sproston good examples of bouquets of Roses, sprays of Stephanotis, &c.

Fruit.—For collection of fruit (nine varieties), Mr. Clapson, gr. to Mr. Overy, Hailsham, was 1st, with good Alicante and Muscat Grapes, Peaches, Nectarines, Green Gage Plums, &c. Grapes were well shown, in good condition, Mr. Crossman being 1st for Black Hamburgh, and Mr. G. Foxley with white, any variety. Peaches were a good class, also Nectarines.

For collection of vegetables, Mr. J. Sutton was 1st. Good vegetables, cut flowers, &c., were also shown in the Cottagers' classes. *W. C.*

WILTS HORTICULTURAL.

Aug. 22.—The annual exhibition of fruits, plants, flowers, and vegetables, was held on the above date, as in previous years, in the beautiful grounds attached to the Bishop of Salisbury's Palace, and immediately in front of the pretty flower garden.

Plants.—Mr. James Cypher, Cheltenham; Mr. George Lock, Crediton; Mr. E. Wills, Southampton; and Mr. Curry, Salisbury; were the chief exhibitors in the several open plant classes. In the class for twelve stove and greenhouse plants, six foliage and six in flower, went to the three first-named exhibitors in the order in which their names appear. The plants of Phœnocoma prolifera Barnesii, Bougainvillea glabra, and Ericas Austiniana and Marnockiana, in Mr. Cypher's collection, were large and profusely flowered, whilst the Palms and Crotons—especially C. Sunset—in point of size and colour, were up to his usual standard of excellence; the same may be said of the other exhibitors' collections.

In the class for nine stove and greenhouse plants, four in bloom and five in foliage, the prizes were accorded to Messrs. Lock, Wills, and Curry, in that order, all showing good plants.

Mr. Wells had the best six exotic Ferns. Tuberous-rooted Begonias were well represented, Mr. Thornton, gr. to Mrs. Greenwood, Harnham Cliff, and Mr. H. W. Ward, Salisbury, taking the leading prizes.

Groups of late years have been remarkable things at most shows, and this year there is no falling off at Salisbury. Mr. Lock and Mr. Wills were fortunate to secure 1st and 2nd in the open class; these cultivators were likewise 1st and 2nd in the gentlemen's gardeners' class. Other group competitions took place, with various cups and money as awards, these being in the nature of special prizes given by persons in the town and vicinity.

Fruit.—Five good collections of eight kinds were staged, Mr. H. W. Ward taking the highest prize with Muscat of Alexandria and Madresfield Court Grapes, a large, beautifully netted Longford Gem Melon (the result of a cross between Hero of Lockinge and Blenheim Orange), highly-coloured Sea Eagle Peaches, and Pine-apple Nectarines, large Brunswick Figs, Cayenne Pineapple, and Moor Park Apricots.

There were some of the finest Muscat of Alexandria Grapes put up we have hitherto seen staged at south country shows, some of the triplet bunches weighing about 12 lb., but the prizes went, notwithstanding to the smaller and better coloured bunches of Mr. T. Northeast, gr. to Mrs. Torrence, Norton Bavant, Warminster.

Mr. G. A. Inglefield was 1st in the class for Black Hamburghs, with compact bunches. Mr. H. W. Ward was 1st for Buckland Sweetwater. Mr. P. Davidson was placed 1st for three handsome well-finished bunches of Black Alicante. Mr. Warden being placed 2nd with good well-coloured bunches of Madresfield Court. Mr. Lock was 1st, for a Pine-apple. Mr. Ward showed not for competition, two good stands of Gros Maroc and Golden Queen Grapes, the bunches of the latter being long and tapering, and two large fruits of Longford Gem Melon.

Vegetables.—Some excellent collections of twelve kinds were shown by Mr. Wilkins, Mr. Haines, Inglefield; and Mr. Pope, gr. to the Earl of Carnarvon, Highclere Castle; the prizes falling to the three first-named exhibitors.

In Miscellaneous exhibits, Messrs. Keynes, Williams & Co., staged Roses and Dahlias. Messrs. Robert Veitch & Son, of Exeter, hothouse and herbaceous flowers, and Japanese Maples. Mr. Ledham, Shirley Nursery, Southampton, showed stands of herbaceous plants.

ROYAL HORTICULTURAL OF IRELAND.

Thursday, *August* 22.—This exhibition was the best of its kind that has been held for a long time, particularly in the matter of Dahlias and Roses, which, on the tables, presented quite a blaze of beauty. The spikes of Gladioli from Messrs. Campbell, Gourock, Glasgow, were quite the finest thing exhibited; and Roses were very fine indeed, and so were the fruits. The plant tent was remarkably effective in its arrangement. The principal groups were a very fine collection from the Royal Botanic Gardens, Glasnevin, which included a great number of curious specimens, filling quite one-fourth of the marquee. There was also a group of nine flowering and foliage plants, each different, for which Mr. Richard Pim was awarded a special prize. Mr. L. G. Watson, Blackrock, had a very fine group of exotic Ferns, and another of foliage plants. There were also two collections of nice Pelargoniums, both zonal and bicolor. Several fine groups of Palms were exhibited with effect in this tent—these being sent from the Viceregal Gardens, the Royal Botanic Gardens, and Sir Edward Guinness' gardens. Some very interesting mixed groups of plants were shown by Messrs. Henderson & Son, Templeogue, and Messrs. Toole & Co., Cullenswood, Dublin, and these were highly commended, and recommended for a prize. The show of florists' flowers was the principal feature, and one of the most extensive we have seen.

The Cup for Dahlias was won by Mr. F. A. Leland, Drogheda; and that for Gladioli, by Mr. Lombard, Upper Rathmines. Both these gentlemen sent really splendid stands. The show of Roses as regards quality, certainly was as fine as could be seen in the month of July. Nothing could have excelled the stand of Roses exhibited by Messrs. Dickson & Son, Newtownards, and they were closely followed in merit by that shown by Messrs. S. M'Greedy & Son. There were also fine exhibits of Roses by Lord Ashtown and Viscount Carlow.

In the miscellaneous department there was a great deal to interest, especially as regards cut Begonias, Phlox, Chrysanthemums, and double Zinnias. An attractive feature was afforded by eight stands of Marigolds, a kind of flower that has become fashionable rather recently. The best of these belonged to Lord Ashtown and Mr. Naper.

The display of fruit was large, and especially was this the case with Grapes, Peaches, Nectarines, and the choicer varieties. The blue ribbon for Grapes, for a stand of six bunches, three varieties, was on this occasion won by Lord Clancarty. Lord O'Neill took 2nd prize, and both these stands were really magnificent. For Grapes, both black and white, Lady Emily Howard Bury, Charleville, Tullamore, carried off the honours. Lord Clancarty, Lord O'Neill, and Mrs. Tedcastle also showed splendid varieties.

Several fine collections of vegetables were exhibited, the best, perhaps, being those shown by Mr. Naper, Lord Ashtown, and Mr. J. T. Poe, Nenagh.

A fine collection of Begonias was staged by Dr. Kennedy, Cultra, and highly commended.

A very large, varied, and interesting group of plants from their nurseries, Fortfield, Templeogue, was exhibited by Messrs. Henderson. It was highly commended, and a prize recommended.

A similar collection, forwarded from the nurseries, Cullenswood, Dublin, by Messrs. Toole & Co., was also highly commended, and a prize recommended.

Amongst the new Roses, Mrs. J. Laing was considered particularly fine, and in their 1st prize stand of forty-eight, the judges were unanimous in their high opinion of the new H.P. Rose, Dixie Coddington, to which they recommended a First-class Certificate. A collection of twenty varieties of choice Plums was exhibited by Messrs. Hartland; commended. *Condensed from Evening Express.*

LEITH HORTICULTURAL.

This Society held its sixth annual show on the 24th inst., in the Drill Hall, Stead's Place, Leith. There were over 600 entries, though that large number showed a falling off of about 200 on last year's record. The most remarkable feature of the show was that brought forward by the offer of a substantial prize for the best table of plants arranged for effect. There were six entries, and the competition was very keen; but the 1st prize was pretty easily secured by J. Clark, Links Place.

Fruit and vegetables were indifferently represented, but cut flowers, particularly in the amateur's classes, were good, and the competition close. The gardeners in some of their own classes were assailed successfully by amateurs, such as Barnie, of Willowbrae Villas, with Dahlias, and other cut flowers; and Brown of Waterloo Place, Edinburgh, with hardy Ferns.

In most respects the show is to be regarded as quite equal to any of former years, though in fruit and vegetables it could not be looked upon as a success.

MUSSELBURGH HORTICULTURAL.

On the 24th inst. this Society held its annual flower show in the Grammar School, Musselburgh. The show, though not a large one, was varied, and the exhibits were, on the whole, superior. Vegetables and cut flowers were especially well shown by both professionals and amateurs, and in some of the classes provided for the former, such, for instance, as exotic Ferns, the exhibits were of a high order, and the competition keen. Messrs. Brown, gr., New, Hailes; Wilson, gr., Carberry Tower; Stevenson, gr., Spring Gardens; and Wood, gr., Woodside, were the principal prize-takers, and ran each other very close in the classes in which they competed against each other. Mr. Geo. Blair, Musselburgh is Secretary.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending August 26, is furnished from the Meteorological Office :—

"The *weather* has been very unsettled and rainy in all parts of the kingdom, but towards the end of the time the conditions were improving. In the north of Scotland the rainfall during the earlier days of the period was extremely heavy. Over our south-western and southern districts the bright intervals were considerably in excess of those experienced further north.

"The *temperature* has been below the mean in all districts, the deficit having ranged from 2° to 4° in Scotland, and from 4° to 5° over Ireland, and in nearly all parts of England. The highest of the maxima, which were recorded on rather irregular dates, varied from 61° in 'Scotland, N.,' and 62° in 'Scotland, W.,' to 68° in some parts of England and in 'Ireland, N.,' to 69° in 'Scotland, E.,' and the Channel Islands. At many of our more northern stations the daily maxima were in several instances below 60°. The lowest of the minima were registered generally either on the 25th or 26th, when the sheltered thermometer fell to between 39° and 41° at many of the inland stations, to 43° in 'Ireland, N.,' but to only 53° in the Channel Islands.

"The *rainfall* has been less than the mean in 'Scotland, W.,' and about equal to it in 'Scotland, E.'; but in all other districts an excess is shown; in 'Scotland, N.,' the excess has been very large.

"*Bright sunshine* has been more prevalent than it was last week in the south and south-west, but elsewhere it shows no material alteration. The percentage actually recorded of the possible amount of duration ranged from 15 in 'Scotland, N.,' to 36 in 'England, S.,' and 'Ireland, S.,' to 48 in 'England, S.W.,' and to 53 in the 'Channel Islands.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending August 26.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	4 —	62	0	+ 183	+ 4	18 +	161	25.9	15	23
2	2 —	79	0	+ 29	+ 5	0 av.	130	18.0	26	30
3	3 —	87	0	+ 22	+ 7	1 +	120	16.3	28	28
4	5 —	95	0	— 13	+ 112	2 +	126	17.2	29	31
5	5 —	90	0	— 19	+ 60	2 +	117	19.8	26	29
6	3 —	109	0	+ 28	+ 75	2 +	122	16.2	36	31
7	3 —	80	0	+ 63	— 23	3 —	135	20.6	29	32
8	4 —	90	0	+ 49	— 1	4 +	125	20.3	26	31
9	4 —	95	0	— 52	+ 88	1 +	124	22.3	48	36
10	5 —	78	0	+ 8	— 53	1 +	150	24.7	24	27
11	4 —	89	0	— 17	— 14	1 +	135	24.5	36	34
12	3 —	116	0	+ 75	— 16	1 +	130	17.0	53	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, August 29.

Market very dull, with no alteration. *James Webber, Wholesale Apple Market.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ficus elastica, each	1 6	7 0
Asters, per dozen	3 0	6 0	Fuchsias, dozen	3 0	6 0
Balsams, doz.	2 0	5 0	Hydrangea, per doz.	9 0	18 0
Begonias, dozen	4 0	12 0	Lilium lancifolium, per dozen	12 0	24 0
Calceolarias, dozen	4 0	9 0	— auratum, doz.	12 0	30 0
Cockscombs, doz.	3 0	6 0	Lobelias, dozen	3 0	5 0
Cyperus, per dozen	4 0	12 0	Marguerites, doz.	6 0	12 0
Dracæna terminalis, per dozen	30 0	60 0	Mignonette, doz.	3 0	6 0
— viridis, per doz.	12 0	24 0	Musk, dozen	2 0	4 0
Euonymus, in var., per dozen	6 0	18 0	Nasturtiums, doz.	3 0	5 0
Evergreens, in var., per dozen	6 0	24 0	Palms in var., each	2 6	21 0
Ferns, in var., doz.	4 0	18 0	Pelargoniums, per dozen	6 0	12 0
Foliage plants, various, each	2 0	10 0	— Ivy-Leafed, doz.	3 0	4 0
			— scarlet, doz.	2 0	4 0
			Solanums, per dozen	6 0	12 0

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beans, Fr., per lb.	0 6	...	Mushrooms, punnet	2 0	...
Beet, red, per dozen	1 0	2 0	Mustard and Cress, punnet	0 4	...
Carrots, per bunch	0 6	...	Onions, per bunch	0 5	...
Cauliflowers, each	0 3	...	Parsley, per bunch	0 4	...
Celery, per bundle	1 6	2 0	Peas, per quart	1 3	...
Cucumbers, each	0 6	0 9	Shallots, per lb.	0 6	...
Endive, per dozen	2 0	...	Spinach, per bushel	3 6	...
Green Mint, bunch	0 4	...	Tomatos, per lb.	0 9	...
Herbs, per bunch	0 4	...	Turnips, per bunch, new	0 5	...
Leeks, per bunch	0 3	...			
Lettuce, per dozen	1 6	...			

Potatos.—No improvement in trade can be reported upon last week's report. Great difficulty experienced in obtaining really good samples.

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 6	Peaches, per doz.	2 0	8 0
Filberts, per lb.	0 10	1 0	Pine-apples, Eng., lb.	1 6	3 0
Grapes, per lb.	0 6	2 6	— St. Michael, each	2 0	6 0
Lemons, per case	12 0	21 0	Plums, ½-sieve	2 6	5 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Maiden Hair Fern, 12 bun.	4 0	9 0
Asters, Fr., per bun.	0 9	1 6	Mignonette, 12 bun.	1 0	4 0
— English, per bun.	2 0	4 0	Pansies, 12 bun.	1 0	2 0
Bouvardias, per bun.	0 6	0 9	Pelargoniums, 12 spr.	0 6	1 0
Carnations, 12 bun.	3 0	6 0	— scarlet, 12 spr.	0 3	0 6
— 12 blooms	1 0	3 0	Pinks (var.), 12 bun.	2 0	4 0
Chrysanth., 12 bun.	4 0	9 0	Primulas, double, 12 sprays	0 9	1 0
Chrysanth., 12 blms.	0 6	3 0	Roses, Tea, per doz.	0 6	1 6
Coreopsis, 12 bun.	1 0	3 0	— coloured, dozen	2 0	4 0
Cornflowers, 12 bun.	1 0	3 0	— red, per dozen	0 4	1 0
Dahlias, 12 bun.	3 0	6 0	— Safrano, dozen	0 6	1 0
Eucharis, per dozen	2 0	4 0	Stephanotis, 12 spr.	2 0	4 0
Gaillardias, 12 bun.	2 0	4 0	Stock, 12 bunches	3 0	6 0
Gardenias, 12 blooms	2 0	4 0	Sunflowers, various, per 12 bun.	3 0	6 0
Gladioli, 12 bun.	6 0	12 0	Sweet Sultan, 12 bun.	3 0	4 0
— 12 sprays	1 0	1 6	Sweet Peas, 12 bun.	2 0	4 0
Heliotropes, 12 spr.	0 6	1 0	Tuberoses, 12 blms.	0 4	1 0
Lavender, 12 bun.	3 6	6 0			
Lilium, various, 12 blooms	1 0	5 0			
Marguerites, 12 bun.	3 0	6 0			

Orchid bloom in variety, fairly good supply.

SEEDS.

London: *Aug.* 28.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., report a poor attendance on the seed market to-day, with scarcely any business doing. Trifolium continues in limited request at former rates. Choice new Winter Tares are now obtainable at very moderate figures. For Mustard and Rape seed there is a fair inquiry at last week's prices. Fine Blue Peas do not offer freely; the prospects of this year's crop are far from good.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended August 24:—Wheat, 30*s.* 5*d.*; Barley, 19*s.* 6*d.*; Oats, 18*s.* 11*d.* For the corresponding week in 1888:—Wheat, 36*s.* 1*d.*; Barley, 21*s.* 11*d.*; Oats, 20*s.* 9*d.*

FRUITS AND VEGETABLES.

Spitalfields: *Aug.* 28.—Pears, 2*s.* to 2*s.* 9*d.* per half-sieve; English Apples, 3*s.* to 6*s.* per bushel; English Tomatos, 3*s.* to 5*s.* per 12 lb.; Green Gages, 2*s.* 6*d.* to 4*s.* per half-sieve; do., 2*s.* to 3*s.* 3*d.* per flat; Orleans Plums, 3*s.* to 4*s.* 6*d.* per half-sieve; Egg Plums, 2*s.* 3*d.* to 3*s.* do.; Victoria Plums, 2*s.* 6*d.* to 3*s.* 6*d.* do.; Damsons, 3*s.* to 3*s.* 6*d.* do.; Bullaces, 2*s.* 6*d.* to 3*s.* do.; Cabbages, 1*s.* 6*d.* to 3*s.* per tally; Vegetable Marrows, 2*s.* to 3*s.* do.; Radishes, 2*s.* to 3*s.* do.; Cauliflowers, 1*s.* to 2*s.* per dozen; French Beans, 1*s.* to 1*s.* 3*d.* per bushel; Scarlet Beans, 1*s.* to 2*s.* do.; Turnips, 2*s.* to 2*s.* 6*d.* per dozen bunches; Carrots, 1*s.* 6*d.* to 2*s.* 3*d.* do.; Onions, 2*s.* to 3*s.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* 6*d.* to 2*s.* do.; Beetroots, 6*d.* to 8*d.* per dozen; Cos Lettuce, 6*d.* to 10*d.* per score; Mustard and Cress, 1*s.* to 2*s.* per dozen baskets; Leeks, 1*s.* 6*d.* to 2*s.* per dozen; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* do.; natural do., 4*d.* to 6*d.* do.; English Onions, 4*s.* to 5*s.* per cwt.; Dutch Onions, 3*s.* 6*d.* to 4*s.* per bag; Carrots, 40*s.* per ton.

Stratford: *Aug.* 27.—Quotations:—Cabbages, 3*s.* 3*d.* to 3*s.* 6*d.* per tally; Mangels, 21*s.* to 23*s.* per ton; Onions, Oportos, 6*s.* to 8*s.* per case; do., Dutch, 4*s.* 3*d.* per bag; Apples, English, 2*s.* to 4*s.* per bushel; Watercress, 6*d.* per dozen; Plums, 1*s.* 3*d.* to 2*s.* 6*d.* per basket; English Plums, 2*s.* 6*d.* to 3*s.* 6*d.* per basket; Apples, Dutch, 10*s.* to 12*s.* per barrel; Pears, 2*s.* to 4*s.* 6*d.* per basket; Walnuts, 2*s.* to 4*s.* per bushel; Onions, English, 2*s.* 6*d.* per dozen bunches.

POTATOS.

Borough and Spitalfields: *Aug.* 27.—General trade slow, but fine examples firm. Early Rose, 50*s.* to 60*s.*; Regents, 60*s.* to 80*s.*; Myatt's, 50*s.* to 60*s.*; Hebrons, 60*s.* to 80*s.*; Magnums, 50*s.* to 80*s.* per ton.

Spitalfields: *Aug.* 28.—Quotations:—Early Rose, 50*s.* to 60*s.*; Imperators, 50*s.* to 60*s.*; Regents, 50*s.* to 65*s.*; Magnums, 45*s.* to 55*s.*; Hebrons, 50*s.* to 70*s.* per ton.

Stratford: *Aug.* 27.—Quotations:—Magnums, 50*s.* to 60*s.*; Hebrons, 55*s.* to 60*s.*; Early Rose, 55*s.* to 60*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime 1887 Clover, 120*s.* to 135*s.*; new, 80*s.* to 100*s.*; inferior, 40*s.* to 75*s.*; best old hay, 80*s.* to 100*s.*; inferior, 30*s.* to 50*s.*; straw, 20*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

Beetle: *E. J. S.* The "kind of beetle" you send is the common cockroach, called black beetle presumably because it is not black, and is not a beetle! Get some phosphorus paste from the chemist, smear it on pieces of bread, and lay them about in your greenhouse, and you will soon be rid of them if you persevere.

Books: *Ancien Brugeois. Cassell's Popular Gardening* is the fullest general treatise of modern date. *The Epitome of Gardening* (Black & Co.) contains a valuable summary in small compass. For Physiology, read *Plant Life*, Bradbury & Co.

Camellias: *J. S.* There would be less risk in doing the planting-out in April, or after the young wood has got into a half matured state—say, in July. There is scarcely time for the roots to push into the new soil if planted now.

Carnation: *E. R.* We cannot undertake to name florists' flowers. The flower and shoot sent would afford no one any clue to the name.

Dahlia: *M. H.* Nothing unusual.

Eucharis Bulbs: *T. G.* Thoroughly infested with the mite. There is no cure—better burn them.

Farmyard Drainings: *H. B. P.* This form of manure may be used occasionally after the crop is cut, if the border be in need of moisture, if the materials of which it consists are partially exhausted, and if the drainage is in good order. In case of using it, allow some outlet for the increase of growth that will follow its use, in the form of young shoots near the extremities of the Vines.

Fungus: *A. E. M. I.* A common Peziza. The grubs on your Pear leaves are those of the Pear sawfly—unfortunately only too common.

Gardening Paper: *R. T.* Does not exist.

Grapes: *Anxious Inquirer.* The berries are covered with every kind of insect found on the Vine. Another season keep a sharp look-out for your insect foes, and use insecticides. The leaves are scorched by the sun, and eaten by spider, thrips, &c.

Jumping Seeds: *H. & S.* The plant is Euphorbiaceous; the country, Mexico. The insect, Carpocapsa saltatoria; more than that we do not know. See *Kew Garden Miscellany*, vol. xi. p. 304.

Lobelia: *D. T.* Your Lobelia, so far as we can judge from a single specimen, is dwarf, free, of good constitution, and the flowers of a pure rich blue. Whether better than others we cannot say without comparing them in growth.

Names of Fruit: *H. K. P.* Pear too much decayed to determine—probably Beurré de l'Assomption. Apple, Hawthornden; ditto, small fruit, unknown—worthless.

Names of Plants: *H. J. C.* A fungus, Rhytisma acerinum. It has nothing to do with the Potato disease.—*C. & C.* Euonymus radicans variegatus. All three might have been cut from the same bush. They are not worth separate names.—*Rugby.* Gloriosa superba.—*H. G. G.* 1, Monarda didyma; 2, Philodendron lacera; 3, Tillandsia zebrina; 4, unrecognised—send when in flower; 5, Pteris argyrea; 6, Dicksonia antarctica; 7, Cyrtomium Fortunei; 8, Rhus typhina. — *C. G. M.* Erigeron acris. — *F. N.* 1, Asclepias curassavica; 2, Lycium barbarum.—*M. N. Jersey.* 1, Clethra arborea; 2, Dabeocia polifolia; 3, Magnolia conspicua; 4, Pittosporum tenuifolium; 5, Cotoneaster frigida; 6, Elæagnus pungens.—*G. L., Chesterfield.* 1, Saxifrage (next week); 2, Sedum album var.; 3, Lysimachia nummularia; 4, Sedum album; 5, Sedum rupestre; 6, Sedum spurium; 7, Saxifraga hypnoides; 9, Saxifrage (next week).—*R. M.* 1, Eryngium giganteum; 2, Silene Armeria; 3, Aster spectabilis; 4, Galium sp.; 5, Phygelius capensis. —*Old Subscriber.* Parrottia persica.—*A. B.* 1, Asclepias curassavica; 2, Selaginella caulescens; 3, S. viticulosa; 4, S. Wildenovii; 5, Asplenium cicutarium; 6, Adiantum assimile.—*C. Lamb.*

Adiantum concinnum.—*J. W.* 2, Neottopteris Nidus (Bird's Nest Fern); 3, Pteris longifolia; 4, Magnolia parviflora; 5, Begonia foliosa.—*Camjee.* No numbers. Dendrobium ciliatum, Rodriguezia planifolia, Oncidium micropogon, Adiantum Mariesii.—*A. B. C.* 1, Lardizabala triternata; 2, not recognised, perhaps Edwardsia; 3, Spiræa hypericifolia; 4, Calycanthus occidentalis.—*P. J.* Chrysanthemum Burridgianum. *R. L.* Rhus toxicodendron.

Premiate: *Seeker.* No doubt the word is a neologism in these days of exhibitions and competitions, but it is so useful, that it is coming into general employment. Premial and premiant are both dictionary words.

Puffball: *C. M.* Large, but there have been many more, larger recorded.

Raspberry Superlative: *T. J. C. R.* To be obtained from Mr. G. Bunyard, Maidstone.

Roses: *E. P. C.* Send them to some large grower of Roses, as we cannot undertake to name these flowers.

Stocks for Warm-house Rhododendrons: *X.* Princess Royal, and any of the early hybrids, which are quick growers.

Tomato: *P. Jamieson.* Badly diseased; there is no cure. All the plants seem to be suffering from the same malady.

Trees for the Seaside: *T. D.* None of those you mention, unless after thick and high shelter is secured, by means of planting Tamarisk germanica, Elder, Blackthorn, Common Crab, Sycamore, Maples, Pinus austriaca, and P. pinaster. Plant these in the order named, beginning with Tamarisk on the side next the sea, after putting up an earthen bank or wall—the former is best, and it may be made 2 feet in width at the top, and Furze seed may be sown in a drill on the top, to afford plants for additional shelter. Behind the shelter of a belt, say 20 to 25 yards wide of the above kinds of trees, almost any other trees or shrubs will succeed; but these should not be planted until the shelter trees have got to be 8 or 10 feet high. The South, South-west, and West coasts are the more difficult to plant, unless the site happens to be protected by headlands from the force of the prevailing winds.

Views: *A. K., Blackmore.* Thanks; please send them for inspection.

CATALOGUES RECEIVED.

Messrs. J. Carter & Co., High Holborn, London—Bulbs.

W. Smith & Son, 18, Market Street, Aberdeen—Bulbs, Spring Flowers, Plants for Forcing.

James Yeats, Royal Oak Mills, Stockport—Bulbs and Roots.

Storrie & Storrie, 96, Nethergate, Dundee—Bulbs and Guide to the Bulb Garden.

J. & R. Thyne, 83, Vincent Street, Glasgow—Dutch Roses, Fruit Trees, Plants for Forcing.

W. Bull, New Plant Merchant, 536, King's Road, Chelsea, S.W.

Wood & Sons, Wood Green, London, N.—Flower Roots.

Smail & Co., 23, Lime Street, and 39, Queen Street, Cheapside, London, E.C.—Special Cheap Price List Bulbs and Flower Roots.

E. H. Krelage & Son, Kleinen Hontweg, Haarlem—Flowering Dutch Bulbs and Miscellaneous Bulbs and Tubers.

Brown & Wilson, Market Place No. 10, Manchester—Bulbs, &c.

W. P. Laird & Sinclair, Dundee—Bulbs.

Fisher, Son & Sibray, Handsworth, Sheffield—Bulbs and Flower Roots.

Communications Received.—G. Davidson.—J. S.—Hortus.—J. R. G.—T. Mawson.—G. W. T.—W. H. D. (yes—please send notes later on.—J. W.—J. M. & Co.—R. C.—A. J.—R. D.—W. S.—W. H. D.—W. W.—E. D. L.—W. W.—F.—T. W. R.—G. C., Chesterfield.—Messrs. Sutton & Sons.—M. B.—R. G. (next week).—E. B. D.—H. T.—B. J.—Haage & Schmidt.—G. D.—W. H. B.—J. H. (with thanks).—Dr. W.

Royal Caledonian Horticultural Society.—A Plum Congress will be held by this Society, on September 11 and 12 next, in conjunction with the show held in the Waverley Market, Edinburgh. Fuller details will be given in our next issue.

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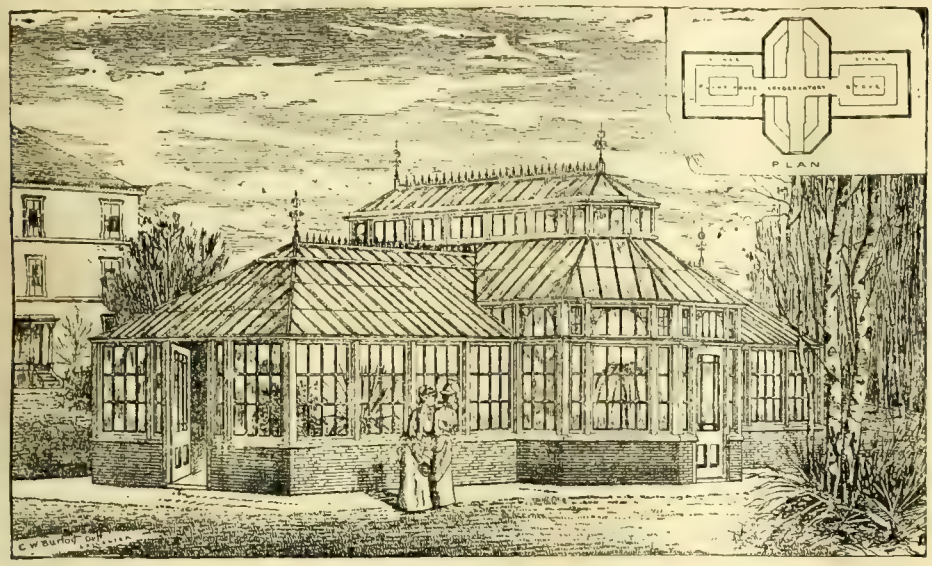
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16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

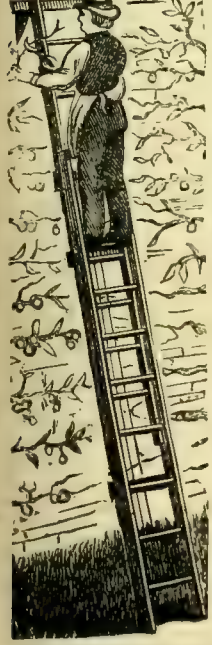
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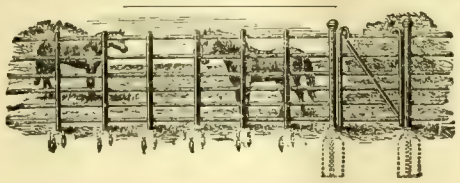
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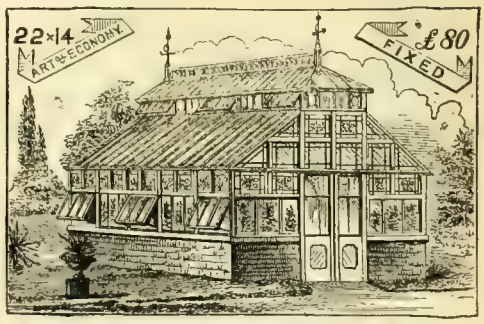
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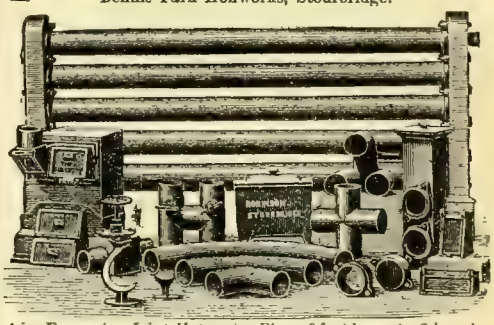
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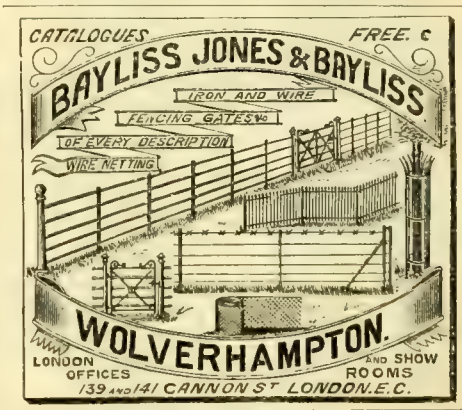


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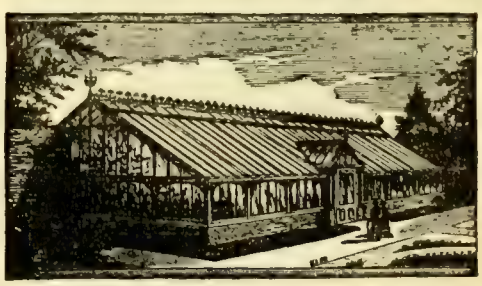
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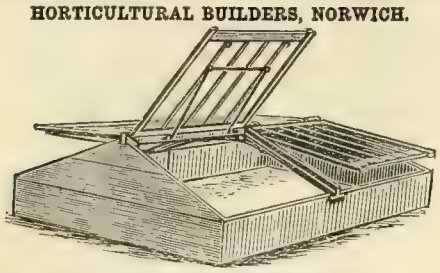
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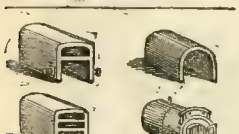
The illustration shows a Frame 8 feet by 6 feet. Made of good redwood deal, sides and ends 1½ inch thick, painted three coats of oil colour; lights 2 inches thick, glazed with 21-oz. sheet glass. Height of sides, 14 inches. Height at ridge, 32 inches. The lights are hinged and fitted with "Registered" Set-opes, which safely support them for ventilation, &c., and the hinges are so formed that the lights can be turned quite over, or taken off at pleasure.

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3 ,, ,,	12 feet by	6 feet ...		5 17 6
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5 ,, ,,	20 feet by	6 feet ...		8 17 6
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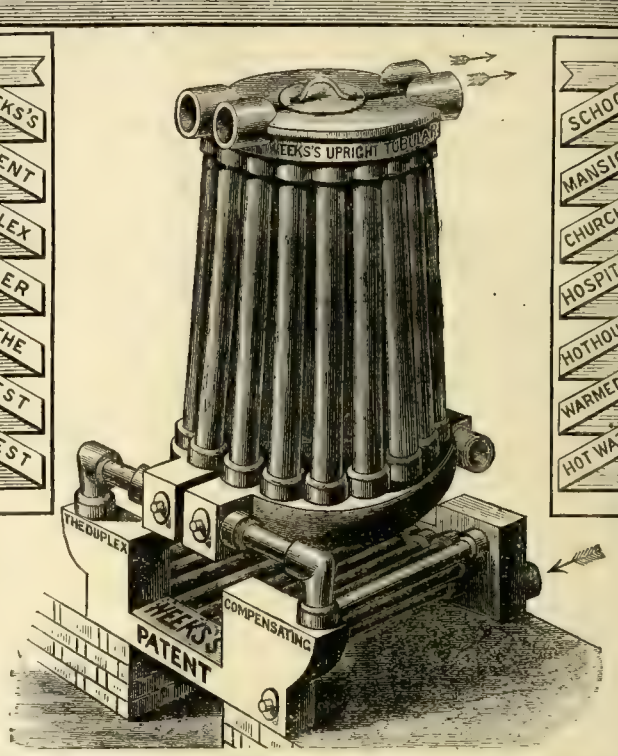
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, August 31, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2541.

No. 141.—Vol. VI. {Third Series.} SATURDAY, SEPTEMBER 7, 1889. [Regt. as a Newspaper. {PRICE 3d POST-FREE, 3½d.

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THE GARDENERS' CHRONICLE IN AMERICA.

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Agent for America:—E. H. LIBBY, "The American Garden," 751, Broadway, New York, to whom American Orders may be sent.

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Swanley Junction, Kent.

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22,000 Erica hyemalis and superba, in 48's, and 32's	50,000 small Heaths, for potting on
4,000 Erica gracilis, in 48's	2,000 Miss Joliffe Carnations
30,000 Genistas	2,000 Adiantum cuneatum
5,000 Ventricosa and other Heaths, in 48's and 32's	7,000 Tea Roses, all best varieties

Palms, Pandanus Veitchii, Adiantum Farleyense, and other Stock.

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Wednesday Next.

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5 000 Erica ventricosa, of sorts	5,000 Mixed Ferns in 48's
25,000 small Ferns for growing on, including Pteris cristata, P. Mayi, P. compacta, P. Argyrea, Lomaria Gibba	1,000 Double Primulas
	1,000 Cyclamen
	2,000 Roses in 24's and 48's
	1,000 Poinsettias
	2,000 Solanums

Large quantities of Mixed Plants, including PALMS, FICUS, DRACÆNAS, &c.

May be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Friday Next.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Seeger & Tropp, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, September 13, at half-past 12 o'Clock precisely, a quantity of well-grown ESTABLISHED ORCHIDS, including—

Cattleya velutina, in flower	Cypripedium Finetianum
,, bicolor Wrigleyana, in flower	,, meirax
Dendrobium nobile album, see coloured illustration	,, Pageanum
	,, Seegerianum
Lælia elegans Stebzneesiana	Sobralia violacea
,, ,, prasiata	,, xantholeuca
,, Rothschildiana	Dendrobium Schroderi
Cypripedium Stonei acrosepalum	Masdevallia elephanticeps
	,, chestertoni
	Pleurothallis Roezli.

and other ORCHIDS of value, the whole in best possible health and condition.

On view morning of Sale, and Catalogues had.

Friday Next.

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On view morning of Sale, and Catalogues had.

Friday Next.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY, September 13, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., London, a small COLLECTION of very rare CYPRIPEDIUMS, in splendid health.

Dyson's Lane Nursery, Upper Edmonton,

(about 5 minutes' walk from Angel Road, and 8 minutes from Silver Street Railway Station, G.E.R.)

FOURTH ANNUAL TRADE SALE of about 45,000 GREENHOUSE and OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May, to SELL by AUCTION, on the Premises, Dyson's Lane Nursery, Upper Edmonton, on MONDAY, September 16, at 11 for 12 o'Clock punctually, in consequence of the large number of Lots, about 45,000 STOVE and GREENHOUSE PLANTS, remarkably well-grown and in the best possible condition, including:—

20,000 Ferns, all of the most useful market sorts, and many novelties.	Tea Roses in Pots, Maréchal Niel, Gloire de Dijon, and W. A. Richardson.
10,000 Tree Carnations, including a fine lot of Mrs. Reynolds Hole, Mdlle. Carle, A. Alegatierre, Andalusia, Old Crimson Clove, &c.	10,000 Bouvardias, including President Cleveland, Mrs. Robert Green (new); Jasminoides, Candidissima.
	6000 Genistas, fine bushy stuff.

Crotons, Dracænas, Eucharis amazonica, Aralias, Statices, Euphorbia jacquiniflora, &c., Ampelopsis Veitchii, Clematis, and Ivies, Cyclamen, Double White Primulas, English-grown Camellias, well set with buds; Azaleas, forward in bud, for early forcing; Ficus elastica, Aralia Sieboldii, small Heaths, Genistas, Bouvardias, &c., for growing on, and a great variety of other useful plants.

May be viewed any day previous to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock, there being upwards of 1200 lots to Sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons, to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, S.E.R., on TUESDAY, September 17, at 11 o'Clock punctually, without reserve, a large quantity of remarkably well-grown WINTER BLOOMING HEATHS, and other STOVE and GREENHOUSE PLANTS, consisting of:—

20,000 Erica hyemalis	600 Cyclamen
5,000 ,, gracilis	1,500 Epacris
2,000 ,, Cavendishii	800 Boronia megastigma
1,000 ,, coccinea minor	5,000 Genistas
600 ,, caffra	3,000 Solanum capsicastrum, well berried
600 ,, melanthera, all well set with bloom-buds	2,500 Bouvardias
	1,000 Adiantum cuneatum
2,500 Grevillea robusta	500 Lomaria gibba
1,000 Ampelopsis Veitchii	800 Tea Roses (in pots)
34 Camellias, specimens	500 Aralia Sieboldii

with a large quantity of young Erica hyemalis, E. Cavendishii, E. gracilis, and others; also Genistas, all in 60-pots for growing on.

The Stock is now on view. Catalogues may be had on the Premises; at the Seed Warehouse, 61, High Street, Lewisham, S.E.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Lea Bridge Road, E.

ANNUAL UNRESERVED TRADE SALE of FINE WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY, September 18, at 11 o'Clock precisely, in consequence of the large number of lots, a large quantity of WINTER-FLOWERING and other PLANTS, including:—

12,000 Erica hyemalis	2,000 Maréchal Niel, Gloire de Dijon, William Allen Richardson, and other Roses, 8 to 10 feet
3,000 Tree Carnations	
4,000 Erica gracilis	
6,000 Genista fragrans	
6,000 Ampelopsis Veitchii, 4 feet	6,000 Clematis Jackmanii, and other best-named sorts
2,000 Epacris	1,000 Deutzia gracilis, established in pots
2,000 Lapageria rosea superba	
6,000 Cyclamen persicum (Fraser's superb strain)	6,000 Bouvardias, including a lot of "President Cleveland"
2,000 Passiflora Constance Elliot and cœrulea	5,000 Solanums, beautifully berried
1,000 Variegated and other Ivies	1,000 Clematis indivisa lobata

and a great number of Araucaria excelsa, Erica perspicua erecta, Erica caffra, large-flowering white Jasmines, Honeysuckles, Stephanotis floribunda, Ivy-leaved Geraniums, Boronia megastigma and heterophylla, Escallonia macrantha, Gum Cistus, Japanese Honeysuckles, Ceanothus, and other plants. Also a large quantity of young Heaths and Genistas, for potting on.

The whole of the Stock is in the best condition, and ready for immediate sale.

HOE STREET STATION, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Friday, September 20.

SPECIAL SALE of ESTABLISHED and IMPORTED ORCHIDS. Important to the Trade.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Sander & Co. to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, September 20, at half-past 12 o'Clock, a large quantity of IMPORTED and ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G. E. R.

TWENTY-FIRST ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS. The Sale to commence punctually at 11 o'Clock, there being upwards of 1200 Lots to Sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Maller, to SELL by AUCTION, on the Premises, The Brimsdown Nursery, Green Street, Enfield Highway, N., adjoining the Brimsdown Station, G. E. R., on THURSDAY, September 19, at half-past 10 for 11 o'Clock punctually, in consequence of the large number of Lots, large quantities of remarkably well-grown STOVE and GREENHOUSE PLANTS, comprising:—

15,000 Winter-blooming Heaths, including hyemalis, gracilis, caffra, Wilmorea, ventricosas in variety, &c.	1,000 Grevillea robusta
	5,000 Genistas
	1,000 double white Primulas
	1,000 Stove and Greenhouse Climbers, including Allamandas, Bougainvilleas, Stephanotis, Tacsonias, &c.
5,000 Solanums, exceptionally well-grown and berried	
5,000 Ferns, Adiantums, Lomarias, Pteris, &c.	Dipladenias of sorts
	1,000 Passiflora
3,000 Tree and other Carnations, leading varieties, including 200 "Germania"	2,000 Ampelopsis Veitchii
	500 Crotons, beautifully coloured
1,000 Epacris to name	150 Chrysanthemum "Mrs. Alphæus Hardy," strong plants in 48's,
5,000 Bouvardias, including President Cleveland, Vulcan, and other best varieties	Palms, Ficus, Camellias, and Azaleas for cutting

Many thousands of small Ericas, Genistas, Ferns, &c.

Large quantities of Acacias, Gardenias, Euphorbia jacquiniflora, Geraniums, Chrysanthemums, Poinsettias, Euonymus ovatus aureus, &c., suitable for the Trade and other extensive Buyers.

May be viewed. Catalogues had on the Premises, and also at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—The whole of the Stock is in first-rate condition, the Ericas being especially well set for flower, and the Solanums unusually well berried.

Sunningdale, near Bagshot.

GREAT CLEARANCE SALE of NURSERY STOCK, by order of Mr. C. Noble, who has unexpectedly received from St. John's College, Cambridge, peremptory notice to quit all lands held under them.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. C. Noble to SELL by AUCTION, without reserve, on the Premises, The Nurseries, Sunningdale, on MONDAY, October 14, and several following days, about 30 acres of thriving young NURSERY STOCK, which must be cleared, and the greater portion of which has been planted within two years, presenting a grand opportunity to Nurserymen and other Large Consumers to secure large quantities of useful stock at auction prices.

Further particulars will shortly appear.

Preliminary Notice.

The well-known Collection of ESTABLISHED ORCHIDS, formed by the late C. J. Partington, Esq., of Heaton House, Cheshunt, and including undoubtedly one of the finest lots of Phalænopsis that have been offered for many years.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to prepare for SALE by AUCTION, in the month of OCTOBER NEXT, the above well-known Collection of ESTABLISHED ORCHIDS, including an exceptionally fine lot of Phalænopsis, the whole of the plants being remarkably well grown, and in excellent condition. The Collection also includes a very fine batch of Cattleya Mendelii, five plants of C. Gaskelliana alba, C. Mossiæ, a splendid lot of Masdevallias, and others.

Further particulars will appear in future announcements. Catalogues are now in course of preparation.

67 and 68, Cheapside, E.C.

American Nurseries, Bagshot, Surrey.

PRELIMINARY NOTICE.

EXTENSIVE SALE of SURPLUS NURSERY STOCK. Highly important to the Trade and gentlemen engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Waterer & Sons to SELL by AUCTION, on the Premises, the American Nurseries, Bagshot, Surrey, EARLY in NOVEMBER, an unusually large quantity of attractive NURSERY STOCK, in grand condition for removal.

Full particulars will be announced shortly.

Preliminary Notice.

Forthcoming SALES of NURSERY STOCK. Important to the Trade, Noblemen, Gentlemen, Landscape Gardeners, and others, engaged in planting during the coming season.

MESSRS. PROTHEROE AND MORRIS desire to announce that they have fixed the following SALES of NURSERY STOCK.

OCT. 8 and 9.—At the LANDER'S LANE NURSERIES, Woking, by order of Messrs. Holdforth & Son.

OCT. 9 and 10.—At the ELVASTON NURSERIES, Borrowash, Derby, by order of Messrs. W. Barron & Son.

OCT. 10.—At BANK'S NURSERY, Hayward's Heath, by order of Mr. Banks.

OCT. 14, and several following days.—At the NURSERIES, Sunningdale, by order of Mr. Charles Noble.

OCT. 30 and 31.—At the AMERICAN NURSERIES, Leytonstone.

Date not fixed.—At the HICKMANDIA NURSERY, Knockholt, near Sevenoaks, by order of Mr. W. Dale.

NOV. 4, and following days.—At the AMERICAN NURSERIES, Bagshot, by order of Messrs. J. Waterer & Sons.

NOV. 5.—At the HALE FARM NURSERIES, Tottenham, by order of Mr. T. S. Ware.

Others are in course of being arranged. Messrs. PROTHEROE AND MORRIS will be glad to add to their permanent lists, the names of gentlemen and the trade who may wish to receive Catalogues of these Sales, 67 and 68, Cheapside, London, E.C.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday Next.—(Sale 7978).

MR. J. C. STEVENS will include in his SALE BY AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY NEXT, September 11, 200 DRACÆNA INDIVISA, from Ghent.

On view Morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, September 12, at half-past 12 o'Clock precisely, ORCHIDS in FLOWER and BUD, consisting of many fine varieties and Specimens, Established Orchids. Also several hundred lots of Choice Named HYACINTHS, TULIPS, CROCUSES, and OTHER BULBS.

On view morning of Sale, and Catalogues had.

WANTED TO RENT, a GARDEN, with several Greenhouses; or a Small NURSERY, with Glass, Cottage, &c. Near a Railway Station.—Particulars and terms to H. S. BLUNSDON, St. Andrew, near Swindon.

WANTED TO RENT, a small NURSERY, in good condition, with 6 to 8 Glasshouses suitable for Orchids and Soft-wooded Plants, and with about 1 to 2 acres of Land attached. Within 15 miles of London, and with good connection to use City.—Full details to U. S. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDEN WANTED.—Wanted to Rent a Garden, with one or two Greenhouses and Cottage; or small Nursery.—Particulars to A. B., 9, Bath Road, Banbury.

FOR SALE, a FLORIST BUSINESS, in the West-end. Nine Glass-houses, well suited for the growth of Orchids and other Choice Flowers. Twelve and a half years' lease. Full particulars,

J. P., 9, St. Peter's Square, Hammersmith, W.

Extensive and desirable Nursery Business for Sale, at Annan, Dumfriesshire.

THERE IS FOR SALE, by Private Bargain, as a going concern, the Old-established NURSERY BUSINESS, so long and successfully carried on, under the firm of Messrs. John Palmer & Son, by the late William Palmer, Nurseryman, Annan.

The Nurseries extend to 54 acres or thereby, 8 acres being held on lease from Mrs. Clarke of Galabanks, which expires at Candlemas, 1890, and 46 acres belonging to the trustees of the late Mr. Palmer, with whom arrangements could be made for a Lease on very moderate terms.

The Nurseries are in the highest state of cultivation, and the Stock is exceptionally healthy and good. It consists of seedling and transplanted Forest Trees; seedling and bedding Shrubs of all sorts; and a fine collection of good growing Coniferæ; with ornamental Trees, and Roses of the finest and most varied sorts. There is also a fine and varied stock of Fruit and other Trees, all in excellent growth and in great demand. In connection with the Nurseries, there are Sheds and Grounds set apart and completely fitted up, for propagating and other purposes.

The Nurseries are situated close to the Station of Annan, on the main line of the Glasgow and South-Western Railway; and also near to the Station, on the line of the Caledonian Railway Company.

This excellent situation affords a very ready and advantageous outlet to all the English and Scotch Markets, and is one of the great advantages which these Nurseries possess. There is also a convenient outlet into Cumberland and the West Coast, by the Solway Junction Railway.

This is a most favourable opportunity for any party acquiring, on most advantageous terms, such an excellent Nursery Stock and Business, which has for so long held a prominent place among the Nurseries of Scotland.

Application for any further particulars may be made to Messrs. BROWN AND LITTLE, British Linen Company Bank, Annan, who will arrange for inspection of the Nurseries.

Ten Years' Lease to be Sold.

A NURSERY, in the South of London, containing 3 acres of Land, with 9 well-heated Greenhouses, 6 Pits, out of which 4 of them are also heated. It also contains good Dwelling House with 7 rooms, new Stables, Potting Shed, and a Show Room. All are in the best possible condition.

The Houses are well stocked with Plants, and the outside with Vegetables, &c., all ready for the market. Only 4 miles from Covent Garden. This is a very good chance for Market Growers. Price very low. Cash.

For further particulars, apply by letter to J. A. R., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE SOLD, a bargain!!! A grand old NURSERY, in the West of England. Established upwards of a century, containing about 20 acres of rich fertile Soil, enjoying special climatic advantages, splendid young Stock, nearly 40,000 feet super of Glass, Trade Buildings, large and commodious Dwelling House. Held on lease. Incoming £3500.

Apply for particulars to Messrs. PROTHEROE AND MORRIS, Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

GRASS LAND TO LET, 1 to 10 Acres, suitable for Nurserymen and others, on Lease, 7, 14, or 21 years. Rent £12 per acre, with the option of the Purchase of Freehold within the first seven years. No Tithe or Land Tax. Near the main road, Enfield Highway, about 9 miles from London, and ten minutes from Railway Station.

Apply HENRY MOORE, 59, Bishopsgate Street Within.

KENT.—TO BE LET on Lease, Well-established NURSERY, doing a good business. Capital Dwelling House, 4 acres of Ground, 4 Glass Houses, heated Seed Shop, &c. Price for Goodwill, £100. Stock optional. Rent, £55 per annum.

Apply PROTHEROE AND MORRIS, 67, 68, Cheapside, E.C.

SURREY.—TO BE LET, capital NURSERY, comprising 1 Acre of Ground, Vinery, 3 Greenhouses, all heated; Brick Pits and Outbuildings, Dwelling-house, 7 rooms; and Seed Shop. Rent, £55. Lease, 21 years. Price, £90.

Apply, PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C. Folio 6950.

TO BE LET, for Christmas Next, the well-appointed family residence BAGOT MANOR, within a mile of St. Helier's, Jersey, with all its Vineries and Greenhouses and extensive Fruit Plantations of upwards of 50,000 choice Pear Trees now in full bearing. The property is divided into three sections, surrounded with high walls, extending over two miles, on which grow choice Fruit Trees also in full bearing.

SECTION 1.—Contains the family Residence, with Ornamental Trees, Flower Gardens, Conservatory, and extensive Outhouses, Coach-house and Stables, Packing and Fruit Rooms, walled Kitchen Garden, 7 Greenhouses and Vineries, and 7 acres of Fruit Plantation and Gardener's Cottage.

No. 2.—Contains 11 acres of Fruit Plantation laid out in squares, edged by Strawberry and Asparagus Plants, all of which is completely walled in.

No. 3.—Contains 3½ acres, most of which is also planted with choice Trees in full bearing, all completely walled in.

For particulars, apply to G. P. BENEST, House and Estate Agent, 18, Queen Street, Jersey.

Channel Islands.

TO LET, Highfield, St. Saviour's, Jersey, delightful RESIDENCE, with 15 Green and Hot Houses, in full bearing.

Particulars, Mrs. BRAYN, on Premises.

WARRINGTON.—HOUSE and SHOP TO LET, in principal Street; excellent opening for a Seedsman.

Apply to W. H. BROOK, Solicitor, Warrington.

TO BE LET, at Michaelmas next, the PILTDOWN NURSERIES, Maresfield, Sussex, 2½ miles from Uckfield Station (L. B. and S. Coast Railway), and a little more from Buxted and Sheffield Park Stations.

These Nurseries were for many years owned and occupied by the late Mr. James Mitchell, one of the most successful exhibitors of Roses of his day, and they are particularly suitable for their growth. They are also well adapted for all kinds of Coniferæ and Flowering Shrubs, and Fruit and Forest Trees. They are about 15 Acres in extent.

The Nurseries are well stocked with Roses of the best kinds, Ornamental Shrubs, Fruit and Forest Trees, &c. It has been for five years, and is now in the occupation of Mr. G. W. Piper.

They are an easy distance from the Stations on the London, Brighton, and South-Coast Railway, on the direct Tunbridge Wells and Brighton Line, and are therefore in direct railway communication with these towns, as well as Lewes, Hastings, and Eastbourne.

For full particulars, and to view, apply to MARK SANDFORD, Estate Agent, Maresfield, near Uckfield, Sussex.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

LANDSCAPE GARDENING.—Our Mr. T. H. MAWSON (successful competitor) is prepared to Advise on, and submit Designs for all classes of Landscape Gardening, Estate Improvements. Highest testimonials from gentlemen for whom he has already carried out improvements, &c. Address, MAWSON BROTHERS, The Nurseries, Windermere.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

BLICK TESTIMONIAL.—We beg to thank the Gentlemen who so kindly assisted in subscribing to the above matter, and to inform them that the Fund having now reached the sum of £50, the List has been Closed.

The Testimonial was presented to Mr. BLICK (privately) in the form of a cheque for the above sum on Saturday evening last.

JAMES ALDOUS (Hon. Treasurer).
S. M. SEGAR (Hon. Secretary).

The recipient of the above Testimonial wishes to thank most gratefully all those Gentlemen and Friends who so kindly assisted by subscribing to it.—A. BLICK.

Royal Parks.—Grass Seeds.

THE COMMISSIONERS of H.M. WORKS, &c., are prepared to RECEIVE TENDERS for the SUPPLY of GRASS SEEDS for use in the Royal Parks, &c., during the year 1890. Forms of Tender, containing full particulars, may be obtained at this Office any day excepting Saturday between the hours of 12 and 3.

Tenders are to be delivered before 12 o'Clock noon on FRIDAY, the 20th September, addressed to "The Secretary, H.M. Office of Works, &c., 12, Whitehall Place, London, S.W.," and endorsed "Tender for Grass Seeds, Royal Parks, &c."

The Commissioners do not bind themselves to accept the lowest or any Tender.

H. W. PRIMROSE, Secretary.

H.M. Office of Works, &c.—28th August, 1889.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Make SPECIALTIES of the following:—

ORCHIDS, of which they have an immense stock, and they are constantly receiving fresh importations from various parts of the world.

ORCHID BASKETS, made of the best Teak and Copper Wire.

COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.

ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.

TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.

FERNS, a large and fine stock of the leading kinds.

GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.

ROMAN HYACINTHS, 1st size, 5 to 6½ inches circumference, 17*s.* 6*d.* p. 100; 2nd size, 15*s.* p. 100; 3rd size, 12*s.* 6*d.* p. 100.

The Company offer all the above at the lowest possible prices. New Illustrated LIST, post-free, on application to

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.

CLAPTON NURSERY, LONDON, E., and BUSH HILL PARK, ENFIELD.—The glass structures cover an area of upwards of 315,000 feet. Eighty Houses devoted to culture of ORCHIDS, PALMS, and FERNS. Also immense quantities of WINTER and SPRING FLOWERING PLANTS in variety; DECORATIVE and ORNAMENTAL FOLIAGED PLANTS, FRUIT TREES, GRAPE VINES, ROSES, in pots and open ground, SHRUBS, &c. Many leading articles offered by the thousand. Inspection of the STOCK invited.—HUGH LOW AND CO.

FREESIAS, REFRACTA ALBA, 3*s.* 6*d.* per 100, or 30*s.* per 1000; LEICHTLINI MAJOR, 5*s.* 6*d.* per 100; Mixed Seedlings, 3*s.* per 100, or 25*s.* per 1000. Warranted all good flowering bulbs. Apply

A. GUILBERT, Mount Durand, Guernsey.

STRAWBERRIES — STRAWBERRIES. — Laxton's Noble. Strong plants of this splendid variety for Market Growers, well rooted in large 60's. Price, to clear, 17*s.* per 100, or £7 per 1000.

H. TITE, The Nurseries, Hampton; and at Flower Market, Covent Garden, W.C.

PRIMROSE, double, deep dark crimson velvet. Hardy plants for spring blooms for sale, by

D. W. GREIG, Sunnyside, Fyvie, Aberdeenshire, Scotland. Stamped correspondence invited.

STRAWBERRY Runners, strong.—Sir Joseph Paxton, 15*s.* 1000; Loxford Hall Seedling, 25*s.* 1000; Laxton's Noble, 7*s.* 6*d.* 100.—PARROTT BROS., Normandy, Guildford.

ROSES IN POTS,

FOR WINTER OR SPRING FORCING.

PAUL & SON,

THE "OLD" NURSERIES, CHESHUNT,

Have their Stock now in order for selecting from.

TWELVE LARGE HOUSES OF TEAS, AND SOME THOUSANDS OF HYBRID PERPETUALS IN POTS,

ALL IN FINE HEALTH AND CONDITION,

30s., 42s., 60s., and 84s. per Dozen.

AUTUMN FLOWERING ROSES are good now at CHESHUNT.

B.S.WILLIAMS

BEGS TO ANNOUNCE THAT HE HAS RECEIVED HIS

ANNUAL CONSIGNMENTS OF

DUTCH BULBS,

and is now executing Orders for the same.

THE QUALITY OF THE BULBS is unusually fine this year.

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UPPER HOLLOWAY, LONDON. N.

NURSERIES.

Rare opportunity for securing a fine Collection of STOVE and GREENHOUSE PLANTS, consisting of Achimenes, Æchmea, Agapanthus, Allamandas, Amaryllis, Anthurium (very fine), Aralia, Begonia (foliage and flowering), Bougainvillea, Bouvardia, Crotons, Dieffenbachia, Euphorbia, Ferns, Gardenia, Hoya, Ixora, Justicia, Lasiandra, Maranta (very fine), Orchids, Pandanus, Paullinia, Poinsettia, Sanchezia, Stephanotis, Tabernæmontana, Vallota, and many others.—F. H. WILLIAMS, The Chantry, Enfield.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. £1 per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.

Direct from the Growers.

ROOZEN'S

DUTCH, CAPE, and CALIFORNIAN

BULBS.

HYACINTHS,

TULIPS, CROCUS, NARCISSUS,

for Outdoor and Forcing.

IRIS, LILIES, PÆONIES,

TERRESTRIAL ORCHIDS,

Gesneraceous & Aroidaceous Plants,

and a large stock of other Miscellaneous

BULBS AND PLANTS.

For details of the above, see our CATALOGUE for 1889 (94 Pages in English), which will be sent Post-free on application to our Agents, Messrs. MERTENS AND CO., 3, Cross Lane, St. Mary-at-Hill, London, E.C., or ourselves direct.

ANT. ROOZEN & SON,

NURSERYMEN,

OVERVEEN, NEAR HAARLEM, HOLLAND.

CARTERS'

EARLY BULBS

To produce beautiful White and Coloured Flowers for Christmas and Easter Decoration.

WHITE ROMAN HYACINTHS,
The Largest Bulbs of the Year.
Price—**140s.** per 1000, **15s.** per 100, **2s.** per dozen.

DOUBLE ROMAN NARCISSUS.
Price—**7s. 6d.** per 100, **1s.** per dozen.

PAPER WHITE NARCISSUS.
Price—**7s. 6d.** per 100, **1s.** per dozen.

VAN THOL TULIPS,
Single, Scarlet, and Yellow.
Price—**4s. 6d.** per 100. **9d.** per dozen.

THE EASTER LILY. The White Easter Lily. We hold the entire stock of the largest cultivator of this lovely Lily.
Price—**1s.** and **2s.** each, **10s. 6d.** and **21s.** per dozen.

ALL PARCELS CARRIAGE FREE.

Carter's Illustrated CATALOGUE, containing a beautifully Coloured Plate, Gratis and Post-free.

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The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
A. F. BARRON, Royal Horticultural Society, Chiswick.

HARTLAND'S GOLDEN QUILLED DOUBLE PERENNIAL SUNFLOWER.—Now is the time to ask for a sixpenny box of Specimen Blooms, to prevent any hitherto implied imposition, and get orders booked for November delivery. Within the entire range of hardy perennials. There is nothing finer. Its colour and floret-formation in appearance like an immense bloom of Madame Domage Chrysanthemum, or the very finest form of orange African Marigold. Quite distinct.
Plants at fall, 1s. 6d. each, with 3d extra to cover postage.
W. BAYLOR HARTLAND, Seedsman, Cork.



STRAWBERRY PLANTS.

We have a grand stock of Strawberry Plants now ready, including all the choicest varieties, which we offer in strong prepared runners, Carriage Free.

	Per 100. s. d.
LAXTON'S NOBLE, the superb new early, the best variety yet sent out ... per doz., 3s.	20 0
A. F. BARRON, splendid new mid-season variety ... ... per doz., 5s.	30 0
COMMANDER, very fine, new sort, of splendid flavour ... ... per doz., 5s.	30 0
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THE
Gardeners' Chronicle.
SATURDAY, SEPTEMBER 7, 1889.

ALLOTMENT GARDENING.

THE remarks in your leading article at p. 218 on this subject are very appropriate, and it is hoped that they may be the means of drawing attention to the importance of allotment gardening. It is easy to see that much of the arable land in England is going out of cultivation, and a larger proportion of it is not so well cultivated as it used to be. Less and less money year by year is being taken out of the ground, while a larger amount goes out of the country to purchase food; while in many districts the working men would be glad to pay for allotments if they could get them. There is plenty of land in this neighbourhood which lets at 25s. per acre, free from tithe, and although numbers of working people were anxious to obtain plots, those in authority in parochial matters did not feel inclined to help them to obtain what they wanted. As it happened, a gentleman residing in the neighbourhood, outside of the official circle, set to work and obtained from the Crown 40 acres of good land, at a rent of 40s. per acre. The difficulties he had to encounter were almost insurmountable. Probably they were greater, because the Crown was the landlord, and he had to become personally responsible for the full amount of £80; and as the other portion of the field let to a farmer is only 25s. per acre, it does not seem as if the Commissioners of Woods and Forests are very anxious to aid in this work. A committee has been formed, and it was decided to let out the ground in portions of from 1 rood to 2 acres; and at a public meeting held subsequently, 64 acres were applied for in ten minutes, and since the meeting many more plots have been applied for. It is a purely philanthropic work so far as the committee is concerned, as they let out the ground at the same rent charged by the Crown.

There is no difficulty in letting out the ground in plots. The real difficulty comes in when the ground has to be purchased or leased. Expensive legal machinery has to be set to work; and as the days

drag wearily on, the expenses run up. The easier transfer of land is a matter of pressing importance. This can be dealt with in the House of Commons only; but another matter of equal importance is the right cultivation of the allotments when they have been obtained. The other day, I was at Bishop's Stortford, and had to do with awarding prizes to the best cultivated allotments in that town. A very large space of ground has been set apart for this purpose, and it is most conveniently placed. The Horticultural Society undertakes the general management and letting of the plots of ground, of which there are something like 150; but out of the entire number, which are all let and under cultivation, not more than half-a-dozen are what might be termed well cultivated and systematically cropped. The one that obtained the first prize was very well managed, and an example to the others. Besides Potatos, which were a clean and even crop on this plot, I noted good crops of Beetroot, some very fine Swedes, Brussels Sprouts, Onions, very fair Lettuce, a vigorous crop of winter Greens and Scotch Kale, fair Celery, early Cabbage ready for planting, a fair crop of Carrots, Parsnips, and red Cabbage. Peas and Scarlet Runners were past their best; but were as good as they are to be seen in most gardens. A crop of Leeks was in process of development, and comprised an even crop of good head of seeds. The system seemed to be this—that as soon as one crop was removed another was put in at once, and all the crops of whatever kind were quite free from weeds.

The second prize plot contained even better examples of culture, but was not so generally good and clean from one end to the other. The third prize was also well won by fairly good culture and a good system of cropping. Some half-dozen other plots might have been selected as being of middling degrees of culture; but upwards of a hundred were badly managed, foul with weeds, and producing about half the crops they might have done under a good system of rotation. Wherever there are large numbers of allotments together, it would be well to promote community of feeling by having an allotment association, or something by which meetings might be held, and discussions inaugurated upon the best system of cropping and cultivating the ground. Even if vegetables only are grown, deep cultivation is necessary to carry crops of Peas, Scarlet Runners, &c., through a period of drought.

Fruit Culture.—None of the owners or occupiers grow fruits of any kind; but I have a strong impression that fruit culture is the thing to go in for. Apples first, and Plums second. The ground requires to be trenched in most cases, and the style of trees ought to be dwarf bushes; and the selection of trees should be such as are likely to produce good crops of fruit annually, and of the best quality. A dozen plants each of, say, Wellington, Lane's Prince Albert, Lord Suffield, Cox's Pomona, Peasgood's Nonsuch, &c., would be better than a score of varieties that would be uncertain bearers. In dessert Apples the same remarks apply. Cox's Orange Pippin is the best, and will always command a good price in the market; the Irish Peach and Early Margaret are excellent summer dessert Apples. Some of the later dessert and kitchen Apples may be grown—indeed, they ought to be. The Lodgemore Nonpareil is rather small, but the best flavoured of the Nonpareils, and it is amongst the latest. Mannington's Pearmain also holds a high position for its handsome appearance and free-bearing qualities. The Cockle Pippin is also good in quality, and free-bearing. Brownlees' Russet may be added to the kitchen Apples.

A few varieties of Plums only should be grown, viz., Early Orleans for earliest; Victoria, the freest bearer of all; Pond's seedling, nearly as free, and producing larger fruit; Diamond, and Autumn Compôte. The best dessert Plums are Green Gage, Jefferson, and Kirke's. Pears are not quite so satisfactory, but the best for general purposes are Williams' Bon Chrétien, Louise Bonne of Jersey, and Doyenné du Comice, the last the best of all Pears. The most important matter to attend to is the right cultivation of the soil; and it cannot be said that labourers and others in country towns and villages pay as much attention to this matter as they ought to do. Badly cultivated soil means cankered trees and inferior fruits. Whereas fruit of the best quality must be grown if the crop is to be a paying one; but there is no doubt that good prices can be obtained anywhere for the best quality of Apples, Plums, and Pears, as well as for all the small fruits. Apples are the best for various reasons; the fruit will keep a long time after it is gathered, and the crop is the most certain, as the blossoms, owing to their late expansion, escape the spring frosts.

The system of Apple culture recommended by the late Mr. Thos. Rivers, of Sawbridgeworth, twenty-five years ago, is excellent, but the results anticipated by him cannot be obtained in practice. The soil of the Sawbridgeworth nurseries is well adapted for the culture of fruit trees; they seem to produce blossom buds more freely there than they do in most other gardens; and when this is the case the trees may be planted closer together. Mr. Rivers said plant them 3 feet apart, and he estimated that an acre planted with one-year-old trees a yard apart, would produce the third year Apples to the value of £75; and the next season the value of the crop would be doubled. Bush trees on the Paradise stock are recommended. I have planted many trees during that period, and have taken notes of the labours of others, and have ever found that the trees will not do planted so closely. In the rich market garden soil of South Essex, they will ultimately require to be planted from 9 feet to 12 feet asunder. In heavy soils, 9 feet would be enough, but in lighter rich soil 12 feet would be better. Now to plant an acre with fruit trees a yard apart would require 4,840 trees. At 9 feet, 537 would be enough; and at 12 feet, 302 only. Ground required for fruit trees should have two or three years preparation if it has to be broken up from the plough tillage. Were I about planting an acre of ground with these fruit trees, I would purchase 550 at 6*d.* each, which would be £13 15*s.*; I would plant one corner of the acre with the trees at a yard apart; the ground worked with the cultivator, or by trenching to the depth of 18 inches. The right thing to shake up the soil for fruit culture is the steam cultivator. The remainder of the ground ought to be cropped with various kinds of vegetables. Deep culture during a series of years is an excellent preparation for the planting of fruit trees. After three years, the trees might be planted 6 feet apart; and in three years more the full distance of 9 feet. The two removals would cause them to make a mass of roots near the surface of the ground, and with a careful system of summer pruning they will soon bear abundantly. Mulching the ground with decayed stable manure round the roots of the trees will also encourage the formation of roots near the surface. Should any traces of canker appear on the trees, cut out the decayed portion, lift, and replant them. *J. Douglas.*

New or Noteworthy Plants.

CYPRIPEDIUM "BEATRICE."

This is a new hybrid raised by Mr. Drewett O. Drewett, of Riding Mill-on-Tyne, from seeds of C. Boxalli, fertilised by the pollen of C. Lowii. The leaves are similar to those of C. Boxalli, about a foot long, and 1½ inch broad, uniform bright green. The peduncle is one-flowered in the specimen at hand, but will probably become two or more flowered as the plant strengthens. The plant is intermediate between that of its two parents, the bract, villous ovary, upper sepal and lower sepal being very nearly the same as in C. Boxalli in form and colour; the upper sepal has very revolute margins; the base is heavily marked with chocolate, and streaks of chocolate run out into the light greenish-yellow apical part, the border being whitish. The petals are widely spreading, and of a similar shape to those of C. Lowii; they are about 3 inches long, spathulate, yellowish, spotted with chocolate at the base; the mid-line is chocolate-purple, as is also the part above it about the middle, shading off into light mauve-purple at the apex, the part below the mid-line being pale whitish-yellow, shaded with pale mauve. The lip is rather long and narrow, shining, pale purplish, shading off into ochreous at the apex and beneath; the border of the mouth is also ochreous. The staminode curves downwards; it is obcordate in outline, with rather straight sides, convex, ochreous-yellow, shaded with brownish in front, and having a narrow, elongate, yellow-green tubercle on the disc; after a time the staminode becomes semi-transparent, and tinted with pale purplish.

This adds another form to our collections, but like many other hybrids, it does not appear to me to be any improvement on either of its parents. *N. E. Brown, Herbarium, Kew.*

Nursery Notes.

MESSRS. G. BUNYARD & Co.

The name of the Maidstone firm of Bunyard has become synonymous with all that is good in fruits and in fruit tree culture. The firm is an old-established one, but at the present time it is fortunate, by reason of its business being mainly, if not entirely, under one guiding head, who is thoroughly master of the business of fruit tree manufacture, well up to all the requirements of the day, and not encumbered with old good-for-nothing stock or equally undesirable antiquated ideas about fruit.

Fruit-growing is growing apace everywhere in our country, and, we hope, cautiously, and in a manner not likely to lead to repentance; this benefits this firm, amongst others, and from its position in the heart of the great southern fruit districts, perhaps more than some others. And new premises, offices in the busy town of Maidstone itself, say something for the large amount of turn-over of the establishment.

It is but five years since we saw the place, but great changes are apparent. The area under fruit has greatly extended, it now being about 90 acres, with a stock of fruit trees alone reaching 450,000 head; everything about the nursery points to a great increase of the fruit tree trade, and if it be possible the special work of the nursery is better done. We do not remember to have seen nursery stock of this kind looking more thrifty and full of promise, the standard trees strong, clean stemmed, and bright hued in bark; and maidens vigorous and regular in the lines. Trained trees of all kinds, in the various stages we are accustomed to find them in nurseries, are excellent if from the point of the number of their branches, the cleanness, and absence of grossness in the shoots, or the ordered regularity with which these are trained. Here may, of course, be witnessed the maiden once cut back, the cutting back in the winter providing her with two arms and one leading shoot in the centre. This is the method pursued with every tree, not a cordon or standard of some kind, destined to become an espalier or a wall tree. Is it to be fan-trained or horizontally trained, of a lyre-shape, or of a cup-shape, this first heading back is nearly always the same.

Some knifemen cut stone fruits at the first cutting back too long; that is, instead of heading back the maiden to 3 or less inches from the graft, 1 foot or more, in bad cases, is left. Thus the branches spring a widish interval apart, and should an accident befall a main foundation shoot, the blank space is not readily made up, and forms, not infrequently, a constant blemish. But once get the main branches to spring from buds which are close together, they can be made to radiate in any direction, and accidental vacancies be readily filled.

The fruit nursery proper is at Allington, on high ground of an undulating character, 1½ miles from the town, and adjoining the London, Chatham and Dover Railway, at Barming Station, from which there is permitted access. The soil is a light, deep, friable

loam, in which plants make "wigs" of roots, and which never bake on the surface, at least, it is never allowed to do so, as a particular kind of shallow scarifier (the "Planet," we believe), is kept going whenever the weather, in spring and summer, admits of it. This implement can be fitted with one, two, or three coulters, as befits the variety of work it has to do, and with a man and a pony who know their work, the soil betwixt some hundreds of rows of fruit-tree stocks can be stirred daily.

Apricots.—The Apricots were excellent, and in very large numbers, whole breaks of trained stuff being observed. Twelve varieties of the Apricot are grown, and the Shipley or Blenheim, a large fruit and good bearer, twelve days earlier than Moor Park, and not so liable to gumming; and St. Ambroise, a rich-flavoured, juicy, large fruit, are much recommended.

Peaches and Nectarines.—The young stock of Peaches and Nectarines equals in quality that of the Apricots, having almost escaped injury from the early October frost of 1888, which so many in the trade have this season to lament. The reason for this immunity from damage by frost may be due to their firm, wiry growth, and to their better degree of maturity, both of which may be traced to the warm, well-drained soil, and to the elevation at which the nursery stands.

Peaches include the finest varieties, both old and new, and are to be found also in fine specimens in pots, in the fruit houses, as standard and dwarf trained. To make sure in any eventuality of having a certain number of trained dwarfs, double-faced, wire espalier fences are erected, and sheltered round about by rough board fences, these being so made as to be easily covered with glass, oiled canvas, mats, &c. In these erections were some beautiful miniature trees, but it looks so far at least, that these shelters will not be wanted this year. In cold autumns or sunless summers, they would prove invaluable aids to wood ripening, and as a protection from early frosts in autumn.

According to the nursery list, there are about thirty varieties of the Peach grown, and in larger quantities than some others, the Alexander Early, a new American fruit of middling size, earlier than Beatrice by ten days, of good appearance and flavour; Alexandra Noblesse, large, melting, and rich; Early Louise, one of the best flavoured of the early Peaches, good under glass, but reputed tender outside; Early Grosse Mignonne, a highly-flavoured fruit; Gladstone, large, fine colour, a hardy free grower, is one of the best of the late kinds; Thames Bank, one of Mr. Rust's raising, when he lived at Fulham, and one that ripens well, although so very late; Waterloo, an American novelty, said to be superior to any other early kind, hardy outside, and six weeks before Royal George, when grown with that variety in the same house. All the finest of the old Peaches find place in the collection grown, and some of them in large numbers.

Apples.—These rival Plums in actual numbers, and are to be found in all forms—the dwarfs mainly on Nonsuch Paradise Apple stock, and very low down on the stock, so that rooting from the scion often takes place in the first year after grafting or budding. We noticed fine stocks of all the good varieties, and especially of the new fruits—viz., Bismarck (1886), a large variety from Australia, and a mid-season fruit—October to December. It may be described as a gigantic Blenheim, with the weight of a Wellington; it is hardy, and a vigorous grower, in the way of Peasgood's Nonsuch. Cox's Orange Pippin and Ribston Pippin are found in tremendous numbers, the latter notwithstanding its reported dying out. Lady Sudeley, the showiest crimson Apple grown, sent out by the firm in 1885; it is a large dessert fruit, of good flavour, ripening in August and September—one of the finest of recent introductions. The Queen (Saltmarsh), good for table and kitchen, is a large, handsome fruit. Prince Albert (Lane), a fine, long-keeping, heavy fruit. Ringer, a large early green fruit, which Mr. Bunyard believes will be the market Apple of the future—good for culinary uses. Lord Grosvenor, another kitchen fruit of a large size, much favoured at present; it is a Codlin, of very free bearing habit, and is one of the best of the early Apples. Baumann's Reinette is a fine, showy, dessert fruit, coming in at Christmas time. The true Grenadier (not Lord Derby, often sold for it) is a large yellow fruit, which obtained a Certificate at the Apple Congress at Chiswick; it is a great and a regular cropper. We have here only indicated some of the finest of new introductions, and a few of the old Apples—all early or mid-season fruits, and which, if we are to compete successfully in southern and west parts of the country with the foreigner, are the varieties likely, in the near future, to be extensively planted. Early fruit needs no housing, and finds a ready sale over the whole country, and in the North, perhaps, more than in the South. Mr. Bunyard appears to scent this coming great planting time, and is pre-



Fig. 37.—Dahlia lutea, hort: pollen magn. (see p. 274.)

paring accordingly, for in one large area of newly-broken land were seen great breaks of two-year-old and one-year-old maidens, numbering 21,000.

Another portion of this new ground was under market sorts—that is, sorts in demand by growers for market, and numbered many thousands. Although the new kinds are grown so extensively, all the standard varieties of Apples grown in private gardens are there also, and equally well done.

Plums.—These and Cherries are Kentish products of the first rank, and stand probably before the Apple in general estimation. All the best kinds are grown, but the market fruits *par excellence* in the greatest numbers. Of these, we will name a few that are, or soon will be, grown by everyone, viz., Rivers' Prolific, Czar, and Monarch, three excellent fruits, useable for dessert or culinary purposes. Then there are the Victoria, well known to gardener and cottager as being one of the heaviest croppers; Pond's Seedling, also an enormous cropper, and resembling Victoria in colour, but later by a fortnight; Cox's Emperor, or Denbigh, a large productive variety of the Orleans stamp; Egg, well-known white and red Plums, called also Magnum Bonum; and Delicieuse. These trees are sold by the thousand, and one piece of the new ground contained in one break 27,000 of them. All the best Plums for the dessert and for culinary uses are grown in good numbers. A large amount of land is devoted to growing Damsons, and the variety most grown is the Farleigh.

Cherries and Kent seem always to go together; and, indeed, you cannot go far in any direction without coming upon the Cherry orchard. There must be something in Kentish soil and climate, or in a Kentish man's aptitude for managing this particular fruit tree, which has helped to form the connection existing now-a-days between this kind of fruit and the county of Kent. The cultivation of the fruit is not now circumscribed to Kent, but has run over into Surrey, and less so into Sussex; but still Cherry orchards, Hop gardens, and copses give character to the landscape in most parts of Mid Kent.

To say that we found young trees of all forms and sizes, is only to repeat what we have already said of Apples, Plums, &c. On the new land we saw one nice little break of market Cherries to the number of 5000, and of the finest possible growth. These were sweet Cherries chiefly. In another, trained Morellos predominated; one drift containing 15,000 trees. The trained sweet Cherries are excellent, and about three dozen varieties are grown. Black Hearts, Black Circassian, Flemish Red, which is larger than the Kentish Red (the pie Cherry), Florence, and Black Turkey Heart, one of the best market kinds, a large tree when old, and bearing large fruits. It is also a variety that is good on a wall; Adams' Crown Heart is a good market fruit, as is Napoleon Bigarreau, which itself forms a succession to Amber Heart, one of the most esteemed market fruits. These form the bulk of the Cherries grown in orchards; but there are others which can be well recommended for the wall, the open garden quarters, and borders, and the Cherry house, and of these cordons or maiden standards, dwarf bushes and plants in pots were noted.

Pears.—These fruits are extensively grown, the deep fine loam suiting them to perfection, and when the trees are allowed to fruit, many fine examples are to be found on trees worked on the Quince; great breaks were noticed of trees in all stages and in all the best mode of training, and all looked equally healthy and vigorous. As a matter of fact, the Pear, by reason of its not being quite so much in demand as are Plums, Apples, and Cherries, is not found in such astounding numbers as are those. About 100 varieties are grown, a number greater than would satisfy the most enthusiastic cultivator, and probably comprising some few varieties that fail at times to perfect their fruit in our clime. The market varieties grown in orchards, viz., Beurré de Capiaumont, Caillot Rouge, Bishop's Thumb, Chalk, Hessle, and Lammas were numerous; but all the best, and most frequently inquired for varieties, were found in quantities, and it may be said that the selection is an excellent one. The dwarfing stock employed is the Angier Quince, and on it were observed large numbers of Pitmaston Duchess, Doyenné du Comice, Beurré Clairgeau, Fondante d'Automne, Louise Bonne de Jersey, Williams' Bon Chrétien, and Durandeau.

We noticed large numbers of hardy Vines, such as Sweetwater, Black Cluster, &c. Figs are layered in the open, grow in capital stuff, and their roots not being cramped by pots, go away when planted with freedom, and are very little checked by being lifted. Nuts, Mulberries, and small fruits abound, and do well.

The fertility of the land is a matter of great moment, and everything is done to improve or retain its fertile character. Direct heavy manuring of fruit tree quarters is not carried out at all; but when it becomes evident that a change of crop is desirable, it is heavily manured with London manure, which is deeply ploughed in, and after laying fallow for the winter, it is planted with Potatos, followed, perhaps, with Oats, or is laid down with grass, or sown with Beans, or planted with Broccoli. After this kind of cropping has been followed up for two or three seasons, the land comes again under fruit.

A large substantial-fruit house, well filled with trees in pots, such as are most in demand, and for exhibition, is found at the Allington Nursery. Here were magnificent examples of fruits, of Apples, Pears, Peaches, &c., but so altered by glasshouse culture as to be beyond recognition. An excellent range of offices, order-sheds, and bays, men's meal-rooms, stables, &c., has been built at this nursery. Time did not permit of the other tree nursery at Somerfield being visited, nor that at Chiltern Hundreds Farm. The former is occupied by fruit trees and Vines, and the latter by forest trees, shrubs, Conifers, &c.

The florist business, carried out in the Bower Nursery in the town, is conducted in about thirty houses. In these, amongst general stock, were found good home-reared Camellias, strong short-jointed Vines in pots, quantities of Bouvardias, a nice lot of Kalanchoe carnea, Celsia cretica, well done; Ferns, many healthy Eucharis amazonica, Cyperus distans, a robust species; Ivies, especially Osborne's variegated Madeiran variety. Some houses are set apart at this season for Melon and Cucumber growing for seed, others for Tomatos and fruiting.

The seed shop and offices contiguous stand on a knoll *vis-à-vis* the old premises, which have changed hands. The new place is attractive in appearance, and has a capital position, facing the busy part of the town. Mr. Bunyard's domicile is now on the other side of the road, and about 100 yards away from the old glass-houses. It stands pleasantly amidst beds and borders of gay herbaceous perennials, some 40 yards back from the street.

Lowe's, at Uxbridge.

There is a large and increasing class of nurserymen of whom the general public and even professed gardeners never hear anything. They do not exhibit, they do not advertise, they do not write to the papers, nor communicate the results of their experience to them; they do not tell people what they are doing, they do not want advice or information; their faces are rarely seen beyond the precincts of their own establishments, and these establishments for the most part bear no notice-board nor name-plate, and were it not for the long ranges of glass which they cannot quite conceal, even if they would, the passer-by would know nothing of their existence. And yet many of these establishments are on a really gigantic scale, and, what is more, they are increasing almost every month. New establishments are founded, while the older ones—vast enough already, one would have thought—are perpetually adding frame to frame, pit to pit, range to range. The class we allude to are for the most part trade-growers only. They supply their fellow nurserymen; from their stores the flower-shops and the markets are largely provided. The increase of such establishments around London and our larger towns during the past few years is something amazing, and serves to illustrate the large amount of capital and enterprise now embarked in the business. The distressed agriculturists must look on with wonder at what the gardeners manage to do, and it is a pity they cannot, or do not, see their way to profit by the lesson in some way or another. Not less remarkable than the extent of these establishments is the perfection of their produce and the punctuality with which they contrive to market it at just the right time for business purposes. The perfection of their cultivation is accounted for by the fact that they grow but relatively few subjects, so that the men are not distracted by having a hundred different things to attend to, but can and do devote themselves, year after year, exclusively to one set of plants.

Our observations have been suggested by a recent visit to Mr. Lowe's nursery, near Uxbridge, which is a very good illustration of the type of nursery we have been speaking of. Out-of-doors a number of Golden Retinosporas strike the eye, but these are as nothing to the enormous quantities of Roses grown for cut flowers and other purposes, Niphetos, Isabella Sprunt, Maréchal Niel, W. A. Richardson, Catherine Mermet, Perle des Jardins, and a variety of H.P.'s and Teas are grown, the latter chiefly on the seedling Brier.

But just now the chief interest centres in the Chrysanthemum. At the time of our visit, in mid August, they were beginning to show bloom, and if anything could be more surprising than the enormous quantities in which they are here represented, it is the even quality of growth. The sorts principally grown are those which are most serviceable for decorative work, such as Madame Desgranges, George Wermig, W. Holmes, and many others, preference being given to those that flower at either end of the season. Mid-season varieties of course are amply provided for in private establishments.

There may not be many prodigies, nor infant phenomena, but for regular all-round uniform excellence they can hardly be surpassed. They are grown in countless rows of wooden frames, with a glass light at the top. The lights, of course, are removable at will, and so also are the sides, a turn of a button or two, and down come the walls of the structure. One 4-inch hot-water pipe runs along the front of each frame, flow in one, return in another, the whole being heated by means of four boilers. Pipes, for the use of watering, are laid all over the nursery, which are supplied from a tank containing 13,000 gallons, this latter being fed by a steam-pump raising 9,000 gallons per hour. There is a carpenter's shop on the premises, in which all the carpentering is done.

Of the contents of the city of span-roofed houses adjacent to the Chrysanthemum frames we do not intend to speak now. We may, however, mention two ranges each 100 feet long, devoted to the cultivation of a new Cucumber of a very prolific nature, and on which we shall shortly have occasion to report.

Turner's, at Uxbridge.

Gardeners of all degree are so much accustomed to associate the name of Turner with the locality of Slough, that it will come as a novelty to many to know that there is a branch establishment at Uxbridge, and a thriving, well-furnished branch too. Here, indeed, will not be found in large quantities the specialties for which Slough is famous, though they are not entirely unrepresented, as witness a collection of Roses of all sorts. These were, for the most part, out of bloom at the time of our visit, and to say anything about Turner and Roses is to say what has so often been said before, that repetition is not needed.

What one does find at Uxbridge, and, as might have been expected, finds well done, is a well selected and well grown collection of trees and shrubs of the right size for trade purposes. Here are to be found the best of the deciduous and flowering shrubs, as well as Ivies, Hollies, Aucubas, Berberis, Maples, Golden Elders, Limes, Planes, trained fruit trees in profusion—ordinary nursery stuff, it will be said; but

the leading characteristics of the management seems to be the elimination of rubbish and the development of really good and tried varieties. The common Laurel Cherry is almost banished, the Caucasian and round-leaved hardier forms taking its place. A break of the Camellia-leaved form, with its leaves twisted like rams horns, is very remarkable. Some worked as standards have an odd appearance. Numerous "drifts" of good forms of Lawson's Cypress, of Thuya Vervaeneana, of Elwanger's Thuya, of the now numerous forms of golden and white-tipped Retinosporas and Junipers, of Cryptomerias, of the Nootka Cypress are to be seen. Elwanger's Thuya, which was introduced under the name of Retinospora Tom Thumb, is clearly a form of Thuya occidentalis, and, as seen here in quantities, a very elegant graceful form it is, while its rich bronze colour offers an additional attraction. In the young state it possesses, in a marked degree, the faculty of producing leaves of two or more different forms on the same plant, after the fashion of its kind, to the delight of the botanist, but to the despair of sticklers for correct nomenclature.

Standard Privets are likely to be very useful in stopping gaps in plantations, and are handsome enough to be employed in isolated positions, or to serve as a foil to the more highly coloured standards of such plants as the variegated Negundo, the Purple Nut, Prunus Pissardi, and others. While we are noting these productions of the grafter's skill, we may mention another illustration of garden-craft, very distressing, no doubt to the purist, who would banish all art from the garden, but for all that very agreeable in a hot day, and sufficiently striking and not at all unsightly in appearance—this is a group of Hornbeams some 30 feet high, which have been planted in a circle, the branches have intertwined and inosculated, and form externally a dome-shaped mass of dense foliage, while internally the visitor might suppose himself in a circular basilica of which the columns are formed of tree-trunks, the arches and vaults of their branches.

ORCHID CULTURE PAST AND PRESENT.*

(*Concluded from p.* 239.)

But a change of system was at length approaching, not brought about so much by the remonstrance of the travellers just mentioned, as by the intelligence and sagacity of a few practical gardeners on whom had been laid the responsibility of cultivating the costly collections of their employers. One of the first of these was Joseph Cooper, gardener to Earl Fitzwilliam at Wentworth. Dr. (afterwards Sir William) Hooker, who visited the Orchid-house at Wentworth in 1835, was surprised at the degree of success with which the plants were cultivated there, and adds, "I must confess that the sight of this collection, whether the vigorous growth and beauty of the foliage, or the number of splendid specimens blooming at one time, be considered, far exceeded my warmest anticipations." (*Bot. Mag. sub* tab. 3,395).

Cooper's chief deviations from the established practice consisted in a lower mean temperature, and the admission of fresh air into the house. A still bolder innovation was adopted shortly afterwards by Paxton at Chatsworth, which caused as much surprise to Dr. Lindley as Cooper's treatment had to Dr. Hooker. Under tab. 5 (Stanhopea quadricornis), in the *Botanical Register* for 1838, Dr. Lindley writes:—"The success with which epiphytes are cultivated by Mr. Paxton is wonderful, and the climate in which this is effected, instead of being so hot and damp that the plants can only be seen with as much peril as if one had to visit them in an Indian jungle, is as mild and delightful as that of Madeira." The salient points of Paxton's treatment may be thus summarised—a lower temperature with a purer atmosphere; an improved method of potting, with especial regard to efficient drainage; the maintaining of a moist atmosphere by occasionally watering the paths and stages of the house, and greater attention to root development. We here see an approach to the cultural routine of the present day; but twenty years had yet to elapse before the prevailing notions respecting Orchid culture finally gave way.

Close upon Paxton followed Donald Beaton, who for a few years had charge of Mr. Harris's collection of Orchids at Kingsbury. Beaton insisted upon more attention being paid than hitherto to the climatic conditions under which Orchids grow at high altitudes within the tropics, and the consequent necessity of adapting their cultural treatment accordingly. In proof of his assertions he sent to Sir William Hooker, who characterised Beaton "as one of the ablest and most scientific gardeners in this country," the details of his successful management of a consignment of Orchids his employer had received from Mexico, and which had been collected by Galeotti at 7,500—9,000 feet elevation. These details are published in the *Botanical Magazine* for 1841, under tab. 3,804 (Lælia anceps).

Long, however, before the period at which I have now arrived, a revolution had been slowly but surely effected which had an enormous influence on the cultivation of plants under glass, and contributed in no small degree to the improvement in Orchid culture that subsequently followed. This was the heating of glass-houses by means of hot-water pipes, which were first used for this purpose on a small scale by Mr. Anthony Bacon, at Aberaman, in Glamorganshire, and afterwards by the same gentleman at Elcot, near Newbury. The inventor of the process is said to have been a Mr. Atkinson. The change from the brick flue with the tan bed to heating by hot-water was nothing less than the substitution of the power of regulating the equality of the temperature for too great inequality; the obtaining of almost perfect control over the heating power, with a great diminution of the labour of attending to the fires, in the place of a very imperfect control with unremitting attention day and night; the admission of fresh warmed air in lieu of no ventilation at all, to say nothing of the smoke and noxious vapours that were constantly escaping through the cracks and fissures of the flue.

Such a combination of circumstances could scarcely fail sooner or later to bring about a change in the cultural methods that had been in vogue so long—a change that was to result not only in a more rational treatment of Orchids coming from high altitudes, but also in a modification of that applied to purely tropical kinds. And so it happened; but the change was so slow and so gradual in taking place, that, looking back upon the state of Orchid culture forty years ago, and upon what we are now accustomed to see daily, one can scarcely suppress a feeling of astonishment that its history should present to us the phase it does. During the twenty years that elapsed between 1840 and 1860, that is to say, from about the time that Mr. Barker, of Birmingham, sent Ross to Mexico, and when Linden began to make known to science and to horticulture the surprising wealth of Cattleyas and Odontoglots inhabiting the Cordilleras of New Granada—these plants perished under the barbarous treatment they received in the hothouses of this country almost as fast as they were imported. To such an extent were the losses felt, that Lindley, in a remarkable article published in the *Gardeners' Chronicle* towards the end of 1859, pronounced their treatment "a deplorable failure," and which Mr. Bateman also some years later characterised as "incredible folly." But the spell which had held Orchid culture in thraldom for half a century was at length broken, and with the despatch of Weir by the Horticultural Society of London; of Blunt, by Messrs. Low & Co., of Clapton; and of Schlim, by M. Linden, of Brussels, to collect Cattleyas and Odontoglots in New Granada, was inaugurated a new era in Orchid culture.

I have now arrived at an epoch within the memory of most living cultivators, and which may not be inaptly regarded as the commencement of the period of modern Orchid culture. Into the details of the practice of the present time it is not my purpose to enter; it is sufficient to note that among the most obvious improvements of recent times must be included—larger and more airy structures with separate compartments for different climates (for large collections even separate houses); a lower average temperature; the admission of more light and air, and a better system of heating, shading, and ventilation. Of the advantages that have accrued from these improvements we have innumerable proofs; but shall we regard our present Orchid culture, so far as ourselves are concerned, as practically perfect, and, resting satisfied with our achievements, leave to our successors the task of making a further advance if they can? Such a course is surely unworthy of our calling and of ourselves. Let us rather bring to the front some of the defects that remain, and try to discover a remedy for them. To cite instances: How many can yet boast of growing successfully for half a dozen consecutive years such Orchids as Cattleya citrina, Lælia albida, L. majalis, L. autumnalis, Epidendrum vitellinum, E. nemorale, and others from the Mexican highlands? Who has yet cultivated the Barkerias, and the group of Brazilian Oncids represented by Oncidium crispum, O. Forbesii, O. Marshallianum, O. sarcodes, O. varicosum, and their allies, for any length of time, and has not had to deplore the gradual decline of the plants till they died outright? How is it that such fine Dendrobes as Dendrobium formosum, D. Bensoniæ, D. MacCarthiæ, D. Parishii, D. bigibbum, and others, are still refractory subjects? That the noble group of Zygopetalæ known as Bolleas, Huntleyas, Pescatoreas, &c., refuse to thrive for any length of time in our houses? And why, moreover, are we still obliged to regard as difficult plants to cultivate, such fine Orchids as Cattleya Aclandiæ, C. superba, Chysis bractescens, Colax jugosus, Grammatophyllum Ellisii, Diacrium bicornutum, and others that can be named? Doubtless the impossibility of exactly, or even approximately, imitating in our houses the climatic conditions under which these Orchids grow in their native countries, together with our still imperfect acquaintance with their surroundings *in situ*, has much to do with the failure to cultivate them satisfactorily. But ought we to be content with such crude empiricisms as hanging them up first in one place, then in another, then in a third, and finally leaving them to their fate?

I invite discussion on these points.

There is another subject to be mooted, one that has an important bearing on Orchid culture in the immediate future. The large and constantly increasing number of Orchid collections in this country, as well as in America and on the continent of Europe, has called into existence a class of gardeners whose sole occupation is the cultivation of Orchids, than which no branch of horticulture exacts a greater amount of intelligence, of careful and accurate observation, with ability to collate and to compare the facts observed, and to deduce practical conclusions from them. The Orchid gardeners of the present day unquestionably possess intelligence; they have also within their reach educational advantages to which their predecessors were strangers, as to them Educational Codes and School Boards were unknown. The simplest truths are often slow in making their way, and the history of Orchid culture bears painful testimony to this fact as regards the horticultural mind. Will it be so in the immediate future, as it was in the past? Will the generality of Orchid growers go on in the same groove year after year, performing mechanically rather than intelligently the routine they have learned, and thence perpetuate indefinitely the culture now practised with all its excellences and with all its defects, as their predecessors did that which they had learned till the force of circumstances compelled them to alter it? Seeing how greatly Orchid culture was retarded from geographical and other important details being disregarded by the Orchid gardeners of the past, will those of to-day still show the same indifference to an elementary knowledge of so important a subject when high-class text-books are within their reach? Will they show, too, the same indifference to correct nomenclature, that they cannot in many instances be relied upon for the right names of the plants they cultivate? The consideration of such questions as these certainly comes within the scope of the Royal Horticultural Society, and let us hope that occasional discussions upon them may lead to useful results. *From the Journal of the Royal Horticultural Society.*

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* Read by Mr. H. J. Veitch, before the Royal Horticultural Society, June 11.

PELARGONIUMS.

THE great improvement that has been effected of late years in the zonal class of Pelargoniums, borders almost on the marvellous, as one can hardly credit that such changes could have been made in these always popular plants, which bid fair to drive the fancy, or show kinds, out of cultivation; and yet we can ill-afford to spare these latter, as, though in comparison with the zonals they only bloom for a short time, they are remarkably gay, and make a magnificent show in the spring.

To have them good then, old plants should be cut back in August, and which should be done so as to leave about three or four joints at the base of each shoot; but when carrying out this work, any that are weak or misplaced may at once be removed, so as to give plenty of room to the others when they start into growth. This they will soon do if the plants are stood in a garden frame, and kept very sparingly watered; and as soon as the buds have fairly started, the plants should be carefully shaken out and repotted. In doing this, the same sized pots may be used, or even smaller, than those out of which they came, so as to admit of a shift later on; and in any case it is important that the pots be clean and dry, or there will be much difficulty in turning the plants out again. The kind of soil best suited to grow the Pelargonium is a sound loam, to which a dash of sand should be added, and a little mild rotten manure, the right proportion of the last named being about an eighth of the bulk. In potting the plants, the point is to pot firmly, and to make sure that the soil is well worked in among the roots before it is pressed down, which may be done by just raising and shaking the plant during the filling in, and then the whole may be consolidated together. The best place for the plants after potting is a cold frame, where they can be kept a little close and shaded for a week or so, just to give them a fresh start, and during that time they will not require water, but should be syringed once a day to prevent flagging and keep the leaves fresh.

As soon as growth recommences, water may be afforded the plants, and all the light possible, together with a fair amount of air, till the weather becomes cold, or we get to the middle of October, when it will be time to remove the plants to a house. The proper position for them there is up near the glass, and the right temperature to maintain during winter is about 40° by night to 50° by day, which degree of heat, with a nice dry atmosphere, will prevent any spot, and keep the plants in fine health for the season.

In March it will be time to stop the shoots by nipping out the points, and as soon as they break again they will be ready for a shift, after which the shoots should be tied out as to form the frame of the specimen. To encourage strong growth and fine heads of bloom, liquid-manure may be given, but it must not be strong, and may be made by soaking cow or sheep dung and soot, and if this is given clear it will greatly benefit the plants till they come into flower. *J. S.*

THE SEED TRADE.

THE PROSPECT OF THE GRASS CROPS.—Recent advices from Darmstadt show that the excessive heat which prevailed during the early part of this season caused German grass seeds to ripen rapidly for maturity, and they show a very fine colour; at the same time, the lack of moisture at such a juncture operated to prevent the full development of the seed grains, so that many have proved to be light and worthless. Under these circumstances, severe screenings have to be resorted to, in order to obtain weighty samples; and the loss through this process will be considerable. Of Dactylis glomerata (Cocksfoot-grass) but small quantities have been harvested in Germany, and home-grown seeds not being able to compete with those imported, the area of cultivation has considerably diminished in consequence. America has harvested much more than last year, though by no means a full crop; heavy rains and inundations in the producing districts have deteriorated the colour, and the seeds are very light. The finest samples come from New Zealand. Alopecurus pratensis (Foxtail-grass) is represented by a satisfactory crop, but the samples are light, and the loss of bulk in clearing will be a heavy one. At present, prices are moderate, but a heavy demand for this valuable grass is anticipated. Last year's crop of Festuca pratensis (Meadow Fescue) was a light one, but considerably less has been harvested this season, and the quantities expected from America will be much less than usual, and prices have consequently advanced beyond those of the past few seasons. Both in Germany and America the low prices obtainable for this grass were wholly unremunerative, and growers ploughed up a considerable portion of their lands in consequence. The quality of the seed is good. Festuca elatior (Tall Fescue-grass) shows an average crop, and fine samples can be had at moderate prices. The crops of Festuca duriuscula (Hard Fescue-grass) and F. ovina (Sheep's Fescue-grass) are large, and the colour of the seeds unusually bright, but the great heat early in the season ripened the crops prematurely, leaving many of the husks devoid of grains. There is a great loss of bulk in cleaning, and it is feared the germinating power of these seeds will not be so heavy as last year. F. ovina tenuifolia is coming in more plentifully than in previous years. The crop of Poa pratensis (Smooth Meadow-grass) is shorter than it has been for years, and prices have materially advanced in consequence. The quality of the seed is, however, satisfactory. P. nemoralis (Wood Meadow-grass) is a very small crop, and prices will range somewhat higher than those of last season. Poa trivialis (Rough Meadow-grass) is being harvested in limited quantities, but it is expected the quality of the seed will be superior to that of last year. Anthoxanthum odoratum (Sweet Vernal-grass) is a small crop of good quality. Agrostis stolonifera (Moist Bent-grass) is so small a crop, that it will be quite insufficient to meet the demand. Cynosurus cristatus (Crested Dog's-tail) is a much smaller crop than in recent years, but the quality of the seed is quite satisfactory.

Of Clover seeds there are good crops of Trifolium incarnatum, Trefoil, Alsike, and white Clover. The prospects of the crop of red Clover are highly promising, and if fine weather should prevail, a good yield of fine bold-grained Rhenish seed may be expected. Sainfoin is a small crop, and advanced prices are anticipated.

THE APIARY.

WHAT TO DO WHEN THE HONEY SEASON IS OVER.

THOUGH the weather is warm as I write, the honey season is over for the present year. Take it altogether, it can only be called an average season, for July was cool and wet, and the sun denied. If the second and third weeks in July had been seasonably warm, a much greater quantity of honey would have been secured. All surplus must be removed at once, and should feeding be required, it must all be done before the end of September. Where queen excluders are used, it is frequently found that when the surplus honey is removed the hives are full of bees, but stores are short. If hives are thus found, they should be fed up quickly, or they will not get through the winter. Feeding must also be carefully done. If done carelessly, robbing will be the order of the day, and much harm will be done. It is very difficult to stop robbing when once it commences, therefore beware of the commencement. Only open the hives in the evening, and feed the bees in rapid feeders, that is, feeders which will hold a large quantity of syrup. Many beekeepers give sufficient syrup at once, and a strong stock will take down an immense quantity in one night. When it is remembered that all stores have to be sealed before winter sets in, the use of rapid feeding is at once seen. With regard to what is enough, the doctors differ. If bar-framed hives are used, we have found that eight frames are not too many, while some leave as many as ten. Some are niggardly enough to leave only six, but that is too few. Never leave less than seven. We are experimenting for the coming winter by leaving hives with seven, eight, nine, and ten frames, in order to see which turns out best next spring. We have also a large Pettigrew skep which weighs certainly as much as sixty pounds, and most likely more. Bees left with such stores ought to spend a very comfortable winter, and yield large returns another year. We partly believe in Pettigrewism, and are increasing the size of our hives. Little swarms are useless, especially when it is considered that a swarm gets less and less for the first three weeks of its existence, that is till brood is hatched out. *Bee.*

ORCHID NOTES AND GLEANINGS.

ORCHIDS ABOUT GLASGOW.

IT is well known that the great barrier to successful Odontoglossum cultivation is the heat of summer. The collections grown in the United States, on the Continent, and even in England, have to do battle against the heat of summer. In this respect the Scotch collections have a point or two in their favour, because we have not the burning sun, nor the high temperature in the shade, which these other collections named are subjected to; and given equal conditions, the success is in favour of the cool summer temperature. In fact, taking Scotland even for example, it is found that low houses sunk about or towards the ground-level produce by far the finest, healthiest dark brown in the case of O. crispum bulbs, emerald-green in respect of O. Pescatorei, and grassy-green in respect of Masdevallias in general. In the States their houses are sunk below-ground generally, for two purposes—for economising the artificial heat in winter, which serves the additional purpose above-named of keeping about the minimum heat possible in summer.

The collections in the meantime we refer to are growing in suburban Glasgow, and although limited in a sense, there are many excellent examples of cultivation. In these times, the premier collections of our own and other countries are more remarkable for numbers of varieties of species than for species themselves. Indeed, but for a few general admirers, the botanical collections where numbers of genera and species predominate, would be about as rarely known among gardeners and amateurs as collections of succulents. An Odontoglossum-house and a Cattleya-house are the be-all and end-all of general orchidophilists; and little wonder, because the popular taste goes that way. These sort of things furnish not only the best marketable commodity, but they form a fine blaze when in quantity in the general greenhouse; and now they are not very costly to begin with.

The collection of Mr. J. B. Mirrilees, one of our successful city magnates, is not only choice, but in exceeding good order. We never saw Odontoglossum Pescatorei grown in such luxuriance in so short a time. Three-and-sixpenny plants four years ago have pseudobulbs broadly ovate, plump, shining-green, as if polished, and emitting flower racemes branching in all directions, with flowers to the tune of about one hundred to the more prominent racemes. There are several complaints among growers as to this species. Many declare that it is not so free, will not bear the fatigue of its more distinguished fellow, crispum, and in this respect, impairs its usefulness. The general answer to that is, that it is just possible that those growers who have been partly unsuccessful allow the racemes to remain too long in the plant. It is well known, as it has been proved over and over again, that the flowers of this species will last twelve weeks in bloom. Now a fourth period of the year encumbered with flowers, is too much for maintaining the



Fig. 38.—Dahlia gracilis var. superba: flowers crimson-scarlet. (see p. 274.)

general well being of any plant, and more particularly if an orchidaceous plant of any importance. Mr. Wilson, the gardener here, who manages these things so well, declares decidedly against keeping on flower-spikes too long—indeed he says that the necessities of the family compel other measures. The Odontoglossum Alexandræ—one can scarcely ignore the late Professor Reichenbach's name—is in grand style here, the pseudobulbs being of that bronzy cast which the leaves carry with them when under good culture. There are many excellent forms, both spotted and without spots, to please "everybody." The main feature is medium potting, fine growing sphagnum on the surface, and the pits cool, clean, and perspiring like the drops of sweat on the brow

under the pressure of more than ordinary exercise. The leaves rustle like a piece of the "old" silk used in the manufacture of some articles of the Duchess of Fife's wedding *trousseau*, and there is not a speck or spot on any of the extremities—indicative of rude health. The O. triumphans, O. luteo-purpureum, O. Halli, are numerous and equally good. There is one excellent bit of the rare yellow ground Indian-red spotted and blotched excellens, and many others which unfortunately have too much similarily to be dignified with specific names. Still they appear to have commercial importance, and everything considered rare is exactly worth what it will bring. Pity to see such a worthless species, by all means distinct enough, dedicated to a name dear to all who know what a plant is—the late Dr. Lindley. O. Lindleyanum is a "frost." What a pretty thing the Oncidium from the clouds, O. nubigerum is! Its leaves spot in heat, but the plant grows grandly in what we culturists call cold; and so do Masdevallias. Indeed, heat in summer, spots Masdevallias, and spots them very badly—so much so that it is difficult to recuperate them. Here, what is of them, are clean and goodly to look upon. O. Uro-Skinneri does well in a climate of this kind in summer, and so does that singular insect-looking Restrepia antennifera. It is a beautifully spotted little flower, very free, and, when one looks into it, it is quite a treat in the matter of form. Its labellum is sandal-like, resting in connate sepaline segments, the inferior ones in this instance being much the more prominent. The dorsal one is much smaller, linear, and the petaline segments are like needles. O. cirrosum is here in both forms—the dense panicled one, and the long loose one which many growers have sacrificed. It is a useful species, much scarcer now, and is much prized for bouquet work. All these plants are grown in low houses at Redlands, with ample means of ventilation, which undoubtedly suits them best.

The Cattleyas are in various houses, but do best suspended from the glass in square teak baskets, with plenty of the miscellaneous herd of stove plants growing underneath, thus keeping up a never-failing supply of moisture in as natural a state as can well be imitated. The C. gigas is doing magnificently, and so is Mendelii, which is one of the freest of the free if not subjected to checks, as well as Trianæ, Mossiæ, and such like. There were two striking plants here that one does not often see—proper subjects for the Kew collection—Maxillaria rufescens (Lindl.), and a pure ochre form of Trichopilia nobilis (Lindl.), which I would call crocea, but your learned southerners might name Mr. Mirrilees—the former name is indicative of the change of colour—the latter might mean anything! There are some well grown Cœlogyne cristata, and among the batch a sport with a distinct narrow white band down the centre of the leaf, which so far appears to be fast.

The Dendrobiums, particularly the old nobile in many of its forms, and Wardianum, are well cultivated. The latter will not do to knock about, as many have done in days past to their cost. Here Mr. Russel propagates it extensively, and never places his established plants in too cold a position, not even in the so-called time of rest. This is the rock many growers founder upon. The nobile can be severely tried without succumbing. There are so many grown here for cut-flower purposes, that the varieties crop up numerously, and sport as well. From one of these the gardener has obtained Cooksoni—so the authorities metropolitan, when sent up to, declared! In this climate, too, was one of the most delightfully fresh pieces we have seen for years of that beautiful Oncid, O. Lanceanum. Its flowers were marvellously fine, and the leaves of the plant were without blemish—very difficult, indeed, to get or see. Hundreds of Calanthes for cut-flower purposes were going along delightfully. Here, again, was the advantage of a miscellaneous horde; stove plants in the centre giving off moisture and the feeding ammonia, which was telling splendidly, not only on the Orchids, but on the grandly-grown batch of Nepenthes suspended from the roof. These, of course, form only a moiety of the plants grown in this establishment; but we must stick to our text, and go along a little distance westwards to see the collection of Mr. Hugh Steven, of Westmount.

In this collection, which has not been so long in existence as that of Redlands, are some noteworthy plants. The cool Orchids here, too, are the favourites, and the houses erected for their growth are both showy and good. The span-roofed cool-house is about 40×18 feet. By far the best plants here are the O. crispum. There were many very choice sorts in bloom, and although August is not the best month for seeing those racemes develop into their best, yet many were very remarkable. O. Pescatorei is good here also, and so are O. Andersonianum, tripudians, sceptrum, Harryanum, luteopurpureum, triumphans—a great many of which came with a batch of Pescatorei. It was pleasing to see such nice pieces of Masdevallia tovarensis—a rare plant once, but over plentiful for a few years, and now again more prized. This house stands upon a slope, and is more exposed to solar influences than the sunk one at Redlands; hence the plants, during summer, are more difficult to grow into specimens. The staging, after the style of Sir Trevor Lawrence and Baron Schroder, is all that could be wished, and the house and plants are kept in the pink of order.

In another house in the span-roofed ornamental range, terrace fashion, is the pretty pearly-white Oncidium longicorne, Dendrobium Wardianum, chrysanthum, Gibsoni, moschatum, and other well-known old species, together with a pretty lot of that beautiful slipper Cypripedium niveum. In the hotter ranges were several well-grown and flowered pieces of Saccolabium, the very handsome, bright Aërides Lobbii, some great masses of Cymbidium giganteum and Lowii, and a goodly lot in flower of Cattleya Gaskelliana. The Cypripeds are well grown here, and are in considerable variety.

Growing up in one of the lofty stovehouses was a marked batch of Cattleya Dowiana—the prince of Cattleyas, because of its great size and unique colouring. One variety in flower was remarkably good, the amethyst labellum being very pronounced in colouring, and contrasting well with the nankin segments. This and C. gigas seem to revel in great heat and moisture, and so does that Cattleya superbiens-looking bulbed Schomburghia Lyonsii. That these plants do better among the general stove ruck than by themselves is beyond question, particularly when they are hung up and properly attended to in the way of cleanliness and moisture, although they would live a long time in such a moist heat with rank vegetation underneath without much artificial watering. The gardener, Mr. Wilson, is quite an enthusiast in his work, and his employer, Mr. Steven, like every gentleman that owns anything like a collection of Orchids, takes that personal interest in his plants which is the best of all encouragements to every good gardener. *J. Anderson.*

Odontoglossum Pescatorei.

This is always a pretty and favourite species, and some of the purple-blotched varieties are equal in beauty to any form of Odontoglossum. The purple spotting is usually displayed on the sepals and petals, but more rarely all over the labellum. Such a variation exists in Sir Trevor Lawrence's collection, and a fine example of it is in bloom in the London Nurseries, Maida Vale. The sepals and petals are pure white, the lip large and flatly expanded, rich violet blotches running from the crest to the edge of the lip in the middle and half-way over its surface at the sides. The side lobes and border of the labellum are also marked with crimson. The plant is small, and it should be a remarkably fine thing when strong. *J. O'B.*

Cœlogyne corrugata.

This is an old species, but not often seen so well in flower as seen in a large batch of it in the London Nursery, Maida Vale. The sprays of white fragrant flowers resemble those of C. ocellata. It comes from high altitudes in the Neilgherries, and thrives well in the cool-house. *J. O'B.*

Odontoglossum Roezlii.

"Roezl used to tell us that where it grows, rain falls 365 days in the year. . . . He discovered it in 1872, and arrived in England with one solitary plant . . . which he sold to Mr. William Bull for 75 gs., and which flowered in December, 1873, creating a great sensation in the Orchid world." *Reichenbachia*, t. 69. One characteristic of this Orchid is its delicious fragrance. This Odontoglossum likes a house the temperature of which never falls below 65°; constant syringing during their season of growth is essential.

Dendrobium polyphlebium, Reich. f. (See p. 244.)

Is there any botanical difference between this and D. rhodopterygium, previously named by Prof. Reichenbach also? I regard them as one and the same thing, probably resulting from the intercrossing of D. Pierardi and D. Parishii, and consequently varying in degree, but such variations merging into each other precludes the possibility of distinguishing extreme forms as distinct species. *James O'Brien.*

Roots of Orchids.

The main point in growing epiphytal Orchids of all kinds, is to preserve a due relation between the heat and moisture of the house, and to avoid blanching the roots by the use of crude masses of peat, since roots so blanched, like Seakale, have lost all power of chlorophyll-action, *i.e.*, the absorption and formation of flower-producing material, and are in a debilitated condition, and so disposed to premature decay. *Reichenbachia*, t. 71.

Cattleyas of the Labiata Group.

In the last issued part of *Reichenbachia*, we find the following table, which will be of service as a reminder to Orchid cultivators.

"*Section I.*

Flowers from the current year's growth, about two months after its completion.

Cattleya labiata vera, Brazil.

Section II.

Flowers produced on the newly formed growths of the current year and before the resting season.

Cattleya Warscewiczii, Columbia; C. Gaskelliana, Venezuela; C. Warneri, Brazil; C. Dowiana, Costa Rica; C. Dowiana aurea, Columbia; C. speciosissima, Venezuela.

Section III.

Flowers formed on growths of the preceding season, and produced after the resting season.

C. Mendeli, Colombia; C. Mossiæ, Venezuela; C. Trianæ, Columbia; C. Percivaliana, Venezuela; C. Laurenceana, British Guiana; C. Schroderæ, Columbia." *Reichenbachia.*

Plants and Their Culture.

Stove Plants.—During this month more attention must be given to airing this house, so as to get the new growth ripe before the dull days set in, therefore less shade and moisture than formerly may be afforded; but this change of treatment must be carefully done, as after the long spell of cloudy weather some plants will be in a very immature state, and some considerable space of time must be allowed them to mature their shoots. A little ventilation should be given at night, and thus aided by the warmth in the hot-water pipes, the ripening process will be assisted. Should the heating apparatus not have been in use of late, no time should be lost in getting the fire started after putting all parts into working order. A night temperature a little lower than has hitherto been kept up may now rule—say 65° to 70°, and less moisture will be required in the house, the damping down in the evening as usual during the warmer summer months being discontinued; but the syringe may be freely used at closing time. Where Crotons and other fine foliage plants are grown, red-spider and

thrips will soon make havoc with the young growths if they be not kept in check by slight fumigations frequently given. In a short time, many of the Dracænas, Pandanuses, and others of a hardier nature must be removed from the greenhouse to their winter quarters; the opportunity being then taken to thoroughly cleanse the house previous to placing the inmates in it. Old or unsightly plants (if not rare) should be thrown away, as these take up the space required by the young plants.

Creepers.—These should be examined, and the shoots regulated, and thinned. Allamandas will continue to bloom with some freedom for a considerable time yet; but the shoots may be restricted by cutting away the weaker and over-abundant ones. This remark will also apply to Bougainvilleas. Clerodendron Balfouriana, as its shoots increase in length and number, should be tied loosely near to the roof-glass, after having unfastened it from the trellis; and no shade should be given, but, contrariwise, all the sunlight possible, and liquid manure may be afforded the plant whilst in active growth, but inducing rest in the plant as soon as its young growths are fully developed. Late-flowering plants will need some little care, and as the season of growth is now so short, a modicum of bottom-heat may be afforded them in a close pit. The shrubby species of Clerodendron will now be found very useful, and when past their best they will require to be kept drier at the root. C. fallax, a handsome plant, is at this season apt to be infested with scale insects and mealy-bug more than other species. C. fragrans should be in every collection, but its foliage must be kept dry, and it should be placed in a dry and airy house.

Rondeletias now in flower will be benefited by occasional doses of liquid manure—the flowers are useful when cut, being lasting, and of a cheerful tint. Vincas should get full light, and but little shade, so that the wood may get matured; and the flowers are more lasting if treated in this way. The plants require the frequent removal of the dead blooms. Dipladenias should now be blooming freely, and should be afforded sunshine in abundance, so that their flowers may acquire substance; and they should occasionally be assisted with some kind of fertiliser.

Cissus discolor is a beautiful object in a stove when grown well, and it is capable of being used with fine effect in decoration in the dwelling, if grown in small pots, some plants being raised each spring for this special purpose. They do well in a warm, moist corner of the stove, and if bottom-heat can be afforded them, growth is very quick. Ixora coccinea is one of the best for cutting from, and plants of it may be removed to a cooler and drier house as they show for bloom. Specimens of Stephanotis which were some time ago placed in a cold house will now bloom, if put into a warm place; but they must have been treated as previously advised to enable them to do this.

Amaryllis with completed growth may be removed to a resting house, watering them just enough to keep the bulbs plump—a peachery or vinery from which the fruit is gathered is a suitable place. *G. Wythes, Sion Gardens.*

The Flower Garden.

Herbaceous Plants.—In order that the plants may continue in good bloom, all spent flowers, old flower-stems, and seed-vessels should be frequently removed. Perennial Sunflowers now make a fine display, and, having treated the plants in the manner advised a short time since for Phloxes, that is, pinched out some of the leading shoots, they will now be flowering freely from the lateral shoots; but the flowers are not so large as on unstopped shoots, although there are more of them. The only plants which we have allowed to seed are Delphiniums, and, now that the ripe seed is being gathered, and the flower-stems removed, some of the plants, as soon as rain falls, will be lifted, divided, and re-planted, and from this early planting we may hope to have them as good next year as if they had not been moved. Asters (Michaelmas Daisies) are about all the plants that at present require special attention in respect of tying-up. Most of the varieties grow so tall, as to make tying needful, and the work cannot be delayed without injury to the Asters themselves, or to other plants which may be near them. The method of tying is important, for the most pleasing effect is just as readily obtained as the reverse of it. I find it just as easy to put two sticks to a plant as to put only one, and loop up the stems thereto. For effect, to be seen at a distance, there is no more effective plant in herbaceous borders than Hyacinthus candicans. We have plants with many spikes of flowers which are fully 5 feet long, and not the least of its merits is the irregular periods at which the bulbs throw up their flower-spikes, and thus prolong the display. Lilium tigrinum Leopoldii, L. lancifolium, L. Krætzeri, L. auratum, and various Gladioli, vie with the Hyacinthus in beauty.

Flower-beds.—"Rest and be thankful" does not apply to any branch of gardening. The flower-beds are filled out, but it does not follow that they should be let alone. The picking over the plants, and thinning out of their shoots, must be done with regularity, if the beds are to continue in good flowering condition for some time longer. Trimmings of Alternantheras, variegated Mesembryanthemum, Gnaphaliums, variegated Allysum, and offsets of Echeverias, may all be used to increase stock. Beds of seedling Verbenas, Petunias, Gaillardias, Phlox Drummondii, &c., all require dwarfing, and if thin on the ground they should be pegged down; but if densely grown together, pinch out the longest shoots, and make the surface even, but not too flat. Turf and Box edgings ought also to have a last trim-up for the season.

Memoranda for next Year.—If the bedding arrangements are ever so beautiful, I am no advocate for repeating them the next year, but as great a change as plants will allow should be adopted. Still it will happen that some part of the arrangement obtains so much favour, that its repetition becomes justifiable, and note should be made of such. The present is also the proper season to rectify errors in the matter of colour, height, and spread of plants; and, as far as possible, a decision should be arrived at, in order that the required number of plants may be propagated. I name the several plants, that, so far as I have as yet been able to come to a decision about, that have this year grown in favour, and which, as a matter of course, will have a foremost place in the arrangement of next year. These are Fuchsias, Phlox Drummondii, Indian Pinks, seedling Verbenas, seedling Petunias, Lilies (various), Tuberous Begonias, fancy Pansies, and white, blue, and yellow Violas. *W. Wildsmith, Heckfield Place.*

Fruits Under Glass.

Cucumbers for Winter Supply.—The house for these should be got ready for planting this month. Clear out all the old soil and the drainage; sift the latter through an inch meshed sieve, and relay it in as open a manner as possible, so that the bottom-heat may readily rise through it. Leave space for about 1 foot depth of soil; cover the drainage with a layer of straw to prevent the compost from getting among it. Then thoroughly scrape the walls, and lime-wash them; paint the pipes with lamp-black and boiled linseed-oil, painting the trough-pipes with red-lead paint, this substance withstanding the action of water and damp best. The roof of the house, and all the other wood-work, should have a thorough scrubbing, or, what is better, a coat of paint. At this season the compost should not be rich. We use nothing but some nice fresh turf chopped up, and put in a narrow ridge along the centre of the bed, and made sufficiently firm to keep it from sinking much, planting the plants about 2 feet 6 inches apart, or 3 feet, according to the length of the roof. In top-dressing, place the soil against the sides of the ridge, not too thinly, and as the roots appear at the outside, always being careful not to bury the stem of the plant. The house should be kept well aired, and the plants grown in a comparatively cool temperature, fully exposed to the sun, and trained with a straight stem up to the top of the house, the laterals being tied in horizontally, and stopped as they approach their neighbours. Remove all the male blooms, and keep the plants free from fruit as long as a supply can be kept up from other sources.

Pine-apples.—If there is a quantity of old fruiting stools in the pits, now is a good time for clearing them out, and potting-up the suckers; any in the last stage of ripening being placed in a cooler house meanwhile, thus leaving space for re-arranging the plants, and preventing crowding,—a state of things very detrimental to Pines in winter. Less moisture will now be required in the atmosphere, with fuller exposure to the sun; and very little shading will now be required, except for freshly potted suckers.

These latter will require the house to be kept close, the air moist, and the plants gently dewed over occasionally with the syringe. Those potted last month should have more air than these, and fuller exposure to the sun, examining them before giving water at the root, but not allowing them to get very dry. Shift those altogether which are intended to be started early next season, choosing for that purpose fully developed plants whose pots are full of roots. These plants should not be excited in any way, nor subjected to sudden changes of treatment, but kept just sufficiently moist without being too wet; gradually dropping the temperature as the days shorten. Those which will be started in succession to these should still have a nice genial moist atmosphere, with a gentle syringing overhead two or three times a week on bright days. Plants swelling their fruit can be treated in the same way, and a night temperature maintained of 70°; shutting up at an early part of the afternoon, the warmth, with a sun-heat, being allowed to rise to 80°—85°. Afford fresh air, in the morning when the sun has raised the temperature to 75°. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Owing to light crops of fruit generally, the wood inclines to be somewhat over-strong, and it is therefore necessary to pay much attention to the summer trimming of the trees; and whether the trees are standards, pyramids, bushes, or espaliers, keep the heads open and the branches thin—the practice cannot be too much recommended; and the earlier the pruning or the thinning takes place after the fruits have been gathered the better.

Peaches and Nectarines we have gone over for the second time, and thinned the shoots more freely than usual; but in many instances root-pruning by piecemeal will have to be practised as soon as the proper time has arrived. As the fruits ripen, they should be gathered, and always a little under than over-ripe, and be placed in the fruit-room on tissue-paper, placed on a soft pad of wadding.

Morello Cherries.—As the trees are cleared of their fruit, remove the nets, and if next year fruiting wood has not been laid in, it should now be attended to. A succession of young wood at intervals should be left all over the trees; and bushes should be treated somewhat like the Black Currant, thinning out the branches to let in the light and air to ripen the wood, and reserving plenty of young wood, otherwise the trees will be fruited to death.

Black Currant and Gooseberry bushes will be all the better, if the branches are very crowded, by having some of them removed, cutting one out here and there to let in light. At the same time reduce the size of the bush by cutting in the outer branches, allowing each to stand well clear of its neighbour. *H. Markham, Mereworth Castle, Kent.*

The Kitchen Garden.

Preparing Mushroom-beds.—Now is a good time to get ready Mushroom-beds for the winter, and before beginning to make the beds, the house should be cleansed to destroy insects harbouring in it, for which purpose a strong solution of carbolic soap will be found of use. In preparing the material for the bed, it is not necessary to shake out too much of the straw, if stable litter is difficult to obtain; but when much straw is left in it, the heap will require more frequent turning over than would be necessary if less were employed. By this means excessive heating is prevented, and the future beds will last longer. Beds may still be made out-of-doors, or in cellars, or open sheds, and in these places it is simply a question of covering up warmly, as the nights lengthen. Attend to the beds in bearing, and when they show signs of giving out, afford them a watering with dung-water at a few degrees higher than the temperature of the bed, and putting a pinch of salt into each canful—that is, 1 oz. of salt to 4 gallons of water.

Cucumbers.—As the nights lengthen, and the amount of sunshine lessens, the linings of hotbeds will require more often renewals, and the coverings on the glass to be increased in thickness. Keep the bine well thinned out, and let this be done more by pinching out the points of the shoots than by cutting out long shoots, as healing is then more rapid. Cut off old discoloured leaves, and lay the fruit on pieces of slate or sheets of glass, to keep them from contact with the soil. *Wm. M Baillie.*

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Vol. V., Third Series, JAN. to JUNE, 1889.
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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY, SEPT. 11 — Newcastle-upon-Tyne (three days). Royal Caledonian (two days). York Florists'. Brighton and Sussex. National Chrysanthemum, at Westminster (two days).

SALES.

MONDAY, SEPT. 9—Dutch Bulbs, at Stevens' Rooms.

WEDNESDAY, SEPT. 11 — Dutch Bulbs, at Stevens' Rooms. Nursery Stock, at Mr. Ladds' Nurseries, Swanley Junction, Kent, by Protheroe & Morris.

THURSDAY, SEPT. 12 — Orchids in Flower and Bud, at Stevens' Rooms. Nursery Stock, at Messrs. Gregory & Evans' Nurseries, Sidcup, by Protheroe & Morris.

SATURDAY, SEPT. 14—Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—58°.5.

Centenary of the Dahlia.

CENTENARY celebrations are the order of the day. The turn of the Dahlia is now at hand, that of the Chrysanthemum is to follow, and so the game will go on merrily. Think of what our successors will have to do in the future, with the numerous introductions of DOUGLAS, of FORTUNE, of ROEZL, LINDEN, VEITCH, and so many others! One of the most interesting questions arising from these celebrations will be that of the survival of the fittest. How many plants have been introduced which have had their day and disappeared; while some, such as the Dahlia and Chrysanthemum, are daily increasing in popular favour! Why? The question is easily asked, but the answer is not readily given. It cannot be from any greater beauty, nor greater staying power in the sense of hardihood or facility of cultivation and propagation. It may be that the survivors owe their persistence to their greater power of variation and adaptability: but, for the most part, we can only invoke the aid of fancy and taste. Doubtless there are reasons even for these matters, especially in the direction of adaptation, as just mentioned, could we but ascertain what they are; but this is beyond our power. We can at present only note the fact.

The Dahlia Conference, which opens at the Crystal Palace after these sheets will have passed the press, may throw some light on these questions, for Mr. SHIRLEY HIBBERD is to treat on the history of the Dahlia, Mr. TURNER on its development as a florist's flower, and Messrs. WEST and CHEAL on their cultivation. As to the history, that is pretty well known. Our own columns, in 1879, contained an exhaustive account of the botanical history of the genus from Mr. HEMSLEY, to which we would refer our readers for the most complete review yet attempted.

A similar paper, read by Mr. GIRDLESTONE, at a meeting of the Horticultural Club, traversed much the same ground. All the species are Mexican. They occur on the high ground, between 4500 and 10,000 feet. Some of them have been in cultivation in Mexican gardens from time immemorial. Mr. GIRDLESTONE tells us that in a work on the natural history of Mexico published at Rome in 1651, there is a figure of a "double" Dahlia under the euphonious name of Cocoxochilt. From Mexican gardens they were introduced into Spain, and cultivated by CAVANILLES at Madrid. That botanist named the genus, unknown in Europe before 1789, in honour of ANDREAS DAHL, a Swedish botanist, a pupil of LINNÆUS. This derivation fixes the proper pronunciation of the name—a matter, however, observed rather in the breach than in the observance. Lord BUTE was the British

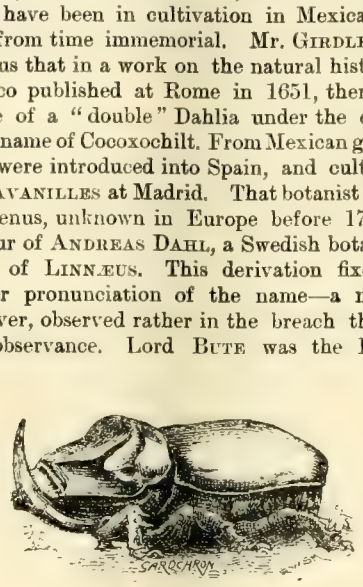


FIG. 39.—PALM BEETLE. (SEE P. 277.)

Ambassador at Madrid at the time, and to Lady BUTE, who sent seeds to Kew in 1789, must be attributed the honour of its introduction into England.

Mr. HEMSLEY, treating the matter from a botanical point of view, concludes that the single forms known as Cervantesii, mexicana, variabilis, and coccinea, seem to be either cross-bred descendants of two or more species, or the variable descendants of one species, and inclines to the latter as the more probable genealogy.

The species enumerated by Mr. HEMSLEY, *Gardeners' Chronicle*, 1879, October 4, p. 437, and November 1 of the same year, p. 557, are nine in number, of which D. imperialis, *Gardeners' Chronicle*, 1870, p. 459; D. excels, *alias* arborea, D. Barkeriæ, D. Maximiliana, and D. scapigera, are out of court as regards what is known as the florist's Dahlia. D. variabilis, D. coccinea, including D. Cervantesii and mexicana, D. gracilis and D. Merckii, with which D. glabrata and D. Decaisneana are synonymous, are more nearly concerned in the production of the flowers of the present day. Our illustrations (figs. 37, 38, and 42), represent some of the nearest approaches to the original wild forms.

The variations in the foliage, and the extraordinary range of colour, are probably due to this mixed parentage, although not necessarily so. The extraordinary diversity of the foliage is specially interesting, because that has not been specially sought for, or selected by the florist. He has devoted his attention almost entirely to habit, and to the form, and colour, and size of the flower, and the variability in these respects is, of course, very largely due to the direct selective influence exerted by the cultivator; but with the foliage it is otherwise, and yet the variability is almost as remarkable, and as it has not been an object of special selection, it would seem as if it must be the result of the interbreeding of several species.

Single Dahlias, which by many are considered far more beautiful than the "lumpy inelegant" double varieties, were speedily eliminated, and it is only of later years that their greater elegance, combined with an equal diversity of colour, has led to their re-introduction, and we may say, to their great improvement as florists' flowers.

The term double, of course, is here used in a different sense from that which is customary. Even a so-called single Dahlia is not one flower, but a group or head of flowers, of which the outer ones, or ray-florets, are strap-shaped, while those of the centre or disc are tubular in the so-called double Dahlia, the number of florets is not necessarily increased, but all the florets have been made to assume a tubular or quilled form. This is an entirely different thing from that form of doubling which consists in the mutation of the stamens and pistils, one or both, into petals. A few years ago (*Gardeners' Chronicle*, 1881, p. 349) Messrs. HENDER favoured us by sending flowers of Dahlias in which each floret had a second floret within it—a true hose-in-hose Dahlia, in fact. Messrs. HENDER informed us that the variation was constant, and we have been on the look-out for it since, but have never again seen it. Another curiosity is the green Dahlia, which is not uncommon, and which has been frequently figured in these columns. In this case the flowers are only imperfectly or not at all developed, while the scales of the head or receptacle, usually inconspicuous (at least the inner ones) are represented by small green leaves. The so-called Cactus Dahlias are Dahlias in which the florets are flatter and not so distinctively quilled, as in the ordinary kinds. Many people would prefer this set to the ordinary show Dahlia, the charm of which lies rather in the purity and variety of its colours than in the form. In the Pompon varieties, the inelegance of the form is not so much marked, so that these also find favour in the eyes of many to whom the ordinary show Dahlia is more or less abhorent. The division into Dahlias and "Fancies" is too recondite for any but "the fancy," and they must be left to the possession and enjoyment of their undoubted rights.

One point we think must be conceded by the florist, and that is, that the style of exhibiting single Dahlias in bunches of various forms, with their foliage, is infinitely preferable to the system of arrangement in lines and rows on a raised board, without even a trace of a leaf in between. This system is the most convenient for the judges, and for those who wish to institute careful comparison of individual kinds; but for those who are not specialists, it is probably the surest way of destroying the beauty and significance of flowers, that the ingenuity of man has yet devised. Perhaps at the Palace, means will be devised to meet both requirements. There is no good reason why Dahlias grouped for decorative purposes should not be intermixed with others set out for individual comparison.

We almost dread to make the suggestion, lest "decorators" should run to the other extreme, and horrify us with "devices" such as we remember to have seen at country shows, not so long ago; and with the perpetration of atrocities such as the Royal Botanic Society

was guilty of only this last summer in the case of Roses. Our American friends have shown a marked tendency in this direction lately, and there is too much reason to fear the fashion will spread. Let us hope that a purer taste and a deeper love of flowers may save us from such floral horrors. May our Dahlia growers never lend themselves to such desecration.



Fig. 40.—Branching palm. (see p. 277.)

The Plum Conference and Exhibition in Edinburgh, September 11 and 12.—It appears from the circular sent to us, and to which reference was made in our last issue, that the exhibits are requested mainly from Scotland, although exhibitors from other parts of the country are solicited to send specimens. Scotland has been favoured with an abundant Plum crop, and it is thought the opportunity should not be allowed to pass without an attempt being made to settle the nomenclature of Plums. In addition to this very necessary labour, information is sought on points of culture, altitude, aspect, soil, and exposure, and intending exhibitors are requested to supply these needful details with the specimens shown. Only in the case of new or little known fruits, is it necessary to send a bearing branch with fruit and foliage. The specimens, moreover, need not be fully ripe. The conference and exhibition will be held in the Waverley market, on the dates above given, in conjunction with the show of the Royal Caledonian Horticultural Society. Mr. Malcolm Dunn, is the convener of the Committee; and Mr. William Young, assistant secretary, 18, Waverley market, Edinburgh, the consignee.

Gold Medal Fruit Essay.—We are requested to announce that the prize of 25 guineas offered by the Fruiterers' Company for an essay on profitable fruit-growing for cottagers and others with small holdings, and the gold medal offered by Dr. Hogg to the winner in the competition, have been awarded to Mr. J. Wright, of 36, Alma Road, Wandsworth. Advertisements of the competition, appeared in the issues of this paper of April and May last. The following is the report of the adjudicators:—

"Having carefully examined the fourteen essays submitted, we have unanimously selected that signed 'British Workman' for the award of the prize. This essay combines practical knowledge with literary ability, and complies with the conditions of the competition. A considerable proportion of the fourteen essays deserve commendation, and it is a matter of regret to us that we have only one prize at our command, where, perhaps, three or four might be worthily awarded. We would mention those signed 'Pomona,' 'Progression,' 'Jabez Chawley,' and 'Hope On,' as particularly meritorious, although not meeting with our entire approval in connection with the present reference.

"T. Francis Rivers,
"A. F. Barron,
August 26, 1889. "Shirley Hibberd."

Gardeners' Orphan Fund.—We are pleased to learn, through Mr. Wildsmith, that on the occasion of the public opening of the gardens and grounds of Heckfield Place, on August 24 and 26, by the kindness of Lady Emma Shaw-Lefevre, the sum of £6 10*s.* was realised for this excellent charity. A larger numbers of visitors would doubtless have been present, but the weather was very unfavourable on the first day.

Montbretia securigera.—We are indebted to Mr. O'Brien for some corms of this plant, which have flowered in a cold frame with a minimum of attention, and which may therefore safely be recommended to amateurs with little leisure and less skill. The plant has the appearance of an Ixia; its flowers are of a pretty shade of orange, shaded with crimson, but the mechanism of the flower is so curious and interesting to those, at least, who like to discover the "reason why," that it is worth alluding to. Like other Irids, it has a perianth of six segments, and these are slightly irregular, so that the flower may be divided horizontally into two unequal portions. The three outer segments are oblong, two at the sides, one odd one in front—facing one as the flower is held in the hand. This "odd" sepal is of a deeper orange colour than its two companions, and has at its base two yellow spots, each edged with a narrow band of crimson. From one of these spots a small, curved, flattened, bright yellow process sticks straight up. Of the three inner perianth segments or petals, the uppermost or odd one, is broader and paler in colour than the others; forming a sort of hood over the stigmas and stamens. The two lower side petals are of the same form, size, and colour as the central sepal, and each has a similar erect process springing from it, so that one sepal and two petals are provided with these processes while the others are destitute of them. The stamens are as in other Irids, three in number, and so curved as to

form an arch over the three processes before mentioned. Behind the three stamens rises the style, dividing at its apex into three spreading curved branches, projecting beyond and over-topping the anthers. The anthers open before the stigmas are ripe, so that the flower is, botanically speaking, "proterandrous." The significance of these arrangements may be understood by a reference to the following diagram:—

— — —
o o o
| + | + |

in which the upper three horizontal lines may be taken to represent the stigmas, the three circles the anthers, the three lower vertical lines the erect processes from the perianth segments. An insect, indicated by the cross +, and attracted by the beauty spot at the base of the perianth segments and the nectar to be found in the tube of the flower, alights on the flower, is compelled to pass between the erect processes | | which thus form a sort of barrier, such as one sees at railway stations, to regulate the course of the travellers, and in so doing must needs brush out the pollen from the anthers o o, between which he passes. At this time the stigmas of this particular flower are not mature, and, even if they were, they would be rolled out of the way; but in another flower they may be ripe, and then the barriers force the insect to take such a course as compels it to wipe off the pollen from its sides on to the stigma. The matter takes a good many words to explain, but the arrangement and meaning are obvious at a glance, and delightful to witness on the part of those who not only admire the beauty of flowers, but can also wonder and admire the manifold evidences around us of purpose and adaptation in their construction. The plant was originarly introduced as far back as 1774, by Mr. MASSON, and was figured in the *Botanical Magazine* in 1797, under the name of Gladiolus securiger, the specific name having reference to the hatchet-like processes from the perianth segments (*securis*=hatchet, or axe), but whose significance was not then considered. Mr. O'BRIEN has also imported other choice flowers of the same alliance, such as Babiana stricta, Tritonia miniata, and others, whose flowers are so beautiful, and culture so easy, that it is to be hoped they will come into fashion again.

YUCCA GLORIOSA VARIEGATA IN FLOWER.—A specimen of the above handsome plant has recently flowered at Hamilton Palace gardens near Glasgow. The plant stands 14 feet in height, and has a flower-spike of more than 2 feet in length. The flowers are of a creamy-white, and possess the aroma of fresh coffee.

BARHAM COURT, MAIDSTONE.—Among Pears doing well in the present unfavourable season were Doyenné Bussoch, Durandeau, Duchesse d'Angoulême, on the open candelabra trees; and on the walls were excellent cordons of Doyenné du Comice, Beurré d'Amanlis, and Easter Beurré; on espaliers clean fruit of Winter Nelis, Napoleon, Madame Treyve; on pyramids (which are not generally cropping well), Beurré Hardy and Nouvelle Fulvie were very clean, but many kinds were much spotted. One feature of the gardens at the present time are Peaches on walls and the Nectarines—grand fruit of Falcon, Princess of Wales, Dymond, and Sea Eagle Peaches, and Pitmaston, Napier, and Pine-apple Nectarines, all clean fruit, regularly disposed, and the trees in perfect health, protected at top with a wide coping. In Apples—for which these gardens are famous—were found enormous crops of more than usually fine fruit of Alexander, Belle Dubois, Stone's, Peasgood's Nonsuch, Cox's Orange, Cox's Pomona, Ribstons, Small's Admirable, Golden Spire, and Tower of Glammis. Especially fine on candelabra, and trees on open trellises, were Cox's Orange and Pomona and Peasgood's. Several choice dessert varieties were doing well on the single cordons. Calville Blanche was very large, and should the present fine weather continue, the very clean and fine fruit will take on colour, and reward Mr. WOODWARD for his arduous labours. Peaches in a large span-to-span orchard-house were heavily cropped, and the whole were producing good fruit, and the trees were healthy and clean. Owing to a tremendous downpour, we were unable to make that careful inspection which was desired; but we were there long enough to see that Mr. WOODWARD was an enthusiast at his work, and the quantity of fruit turned out from the gardens is prodigious, commencing in July with Strawberries and following closely with early Peaches (Alexander and Waterloo) until the wall-fruit and Apples and Pears come in.

MELONS IN THE SOUTH OF FRANCE.—In the current number of the *Moniteur de l'Horticulture*, mention is made of the prodigious quantities of Melons consumed in the South. The writer says that at Nismes he was startled (*effrayé*) at the enormous quantities of Melons (of the kind known as "Cavaillons"—*i.e.*, a netted green flesh variety) displayed in the markets and in the streets, and supposed this to be the supply for a week at least. So far from that being the case, it represented only a day's supply, and the next morning a fresh lot of equal magnitude was to be seen. The inhabitants each consume one or two per diem on the average, the price there being merely 3*d.* or 4*d.*, as contrasted with the cost in Paris, where it amounts to as many shillings.

THE BULB SEASON AT SCILLY.—The present season (writes Mr. J. C. TONKIN, of St. Mary's, Scilly), has been a very favourable one for the ripening of bulbs. Quantity as well as quality are all that can be desired; and growers may, under favourable circumstances, expect a good crop of flowers in the coming spring. I should advise those who are making fresh plantings to do so as soon as possible, so that the bulbs may make good roots before the cold weather sets in. They should be planted about 3 inches deep. On no account must strong manure be added at the time of planting. During the winter the beds should be well earthed-up, which can be drawn down when fine weather sets in.

MANGOS.—Mr. MARIES, well-known as a collector in Japan for Messrs. VEITCH, has now prepared a work on *Mangos*. Mr. MARIES is in charge of the Durbhunga Gardens, where he has collected some 150 of the better kinds of Mangos, which are propagated by grafting.

BERLIN BOTANIC GARDEN.—It is announced that Professor ENGLER, of Breslau, and Dr. URBAN, have been appointed Joint-Directors of the Royal Botanic Gardens, Berlin.

SCIENCE AND ART CLASSES IN NORTH LONDON.—We have been asked by Mr. W. T. THOMPSON, organising secretary of the above classes, held in the Page Green Board Schools, Tottenham, N., to call the attention of our readers to the classes of botany and principles of agriculture included in the curriculum of instruction, and which we gladly do. In his communication it is stated that at the examination in May, 1889, seventeen students were presented in the two subjects above mentioned. Sixteen passed, five gaining first classes. A special class for students taking honours in agriculture, will be formed during the ensuing session. It may be mentioned that during the seven years the classes above named have been held, there have been a great many students from nurseries in the neighbourhood, especially from Mr. T. S. WARE's. Prospectuses of the classes may be obtained from Mr. THOMPSON at the above schools.

THE BOOK OF THE FARM.—We have already alluded to the re-publication by Messrs. BLACKWOOD of this excellent work, under the editorship of Mr. JAMES MACDONALD. The work is eminently practical, and this is shown as much in the way in which the matter is arranged, as in the character of the matter itself. The present part contains, among other things, an account of the several manures and their mode of application, and a review of the pasture grasses.

INDIA-RUBBER AND GUTTA-PERCHA.—Messrs. FERGUSON, of Colombo, have done good service by publishing a second edition of their treatise, which is a summary of information compiled from various sources as to the natural history and cultivation of the trees. Messrs. HADDON & Co., of Bouverie Street, are the agents for the work in this country.

ALL ABOUT TOBACCO.—Messrs. A. M. & J. FERGUSON have collected from their excellent periodical, the *Tropical Agriculturist*, a series of articles and letters on the subject of Tobacco growth. An index is prefixed. The culture of Tobacco in Britain is alluded to, large use being made, and duly acknowledged, of Mr. E. J. BEALE's treatise on the subject.

PRESENTATION TO MR. RABONE, OF ALTON TOWERS GARDENS.—The show of the Alton Horticultural Society, on Thursday, August 29, was made the occasion of presenting Mr. RABONE, the respected Head Gardener to the Earl of SHREWSBURY at Alton Towers, and for twenty-one years honorary secretary of the above mentioned Society, with a silver cup. The presentation took place at Mr. RABONE's house, in the presence of most of the judges, Mr. COXON, and other friends.

GARDEN NOTES.—

DERWENT HALL.—The Duke of NORFOLK is entertaining visitors.

SYDENEY LODGE, Netley.—Lord and Lady ROSSLYN are in residence.

BRYKINALT.—Lord TREVOR opened his gardens on Sunday last to the general public (*Daily Telegraph*).

LANGHOLME LODGE, Dumfries.—The Duke and Duchess of BUCCLEUGH are staying here.

HOLKER HALL, Lancashire.—The Duke of DEVONSHIRE will reside here till the middle of October.

ENDSLEIGH, Tavistock.—The Duke and Duchess of BEDFORD are in residence.

BARCOMBE PLACE.—Mr. Justice and Lady GRANTHAM are spending the vacation here.

IGHTHAM MOTE.—A large part of the land surrounding the old residence has been sold to Lord DERBY, who will add it to his Fairhill Estate.

COPPER LABELS.—We have already alluded to hese labels, which we have now had in use for some time, and find them more easily written and more readily applied than any other. It is simply necessary to write the name with a pointed piece of wood or pencil, which indents the copper, leaving a permanent impression. If a white label be desired, it is easy to smear a little white lead on the copper before writing the name. The label is attached by two thongs, which are easily bent over the branch to which they are applied. One objection to these thongs is that occasionally they tear off, so that the label becomes detached, but this is a rare occurrence; but we see this has been obviated by using two wire threads instead of the thongs. Mr. CHANDLER, of CARTER & Co., of Torquay, is the inventor of this most serviceable label.

PUBLICATIONS RECEIVED. — *The Republic of Uruguay: General Description and Statistical Data.* (London: Office of the Consulate General, 27, Throgmorton Street, E.C.).—*Provincial Government Crop Report, July*, 1889. (Nova Scotia.)—*The Garden's Story.* By GEORGE H. ELLWANGER. (D. APPLETON & Co., New York; and Caxton House, Paternoster Row, London.) *Report of the 4th Indian National Congress.* (London: Indian Political Agency, 25, Craven Street, Charing Cross).—*Annual Report of the Superintendent of Common and Public Grounds*, 1889. (Boston, U.S.A.: ROCKWELL & CHURCHILL, 39, Arch Street).—*Journal of the Royal Horticultural Society.* Vol. xi., part ii. (London: 117, Victoria Street, S.W.) — *Annual Report* (1888) *Botanical and Afforestation Department, Hong-kong.* (C. FORD, F.L.S.). — *Annual Report of Trinidad Botanic Garden.* J. H. HART.—*Bulletin of the Agricultural Station, Cornell University, U.S.A.*

BRANCHING PALMS.

One of the most characteristic features of the Palms consists in their unbranched stems. How much grace and elegance are thereby secured is a matter of common observation. Possibly a reason for it may be found in the requirements of the plant in the young state, as in enabling it to push its way through the undergrowth, and expand its noble plume of foliage to light and air; a single shaft has obvious advantages. There are some Palms, like the Doum Palm of Egypt, which branch normally; while, in other cases, it seems to be accidental, and the result of injury. In the *Journal of the Linnean Society*, 1871, vol. xi., Dr. Shortt published an account, with illustrations, of some branched Palms from Southern India, the species mentioned being the Palmyra Palm or Borassus, and the Cocas. Our present illustration (fig. 40), is taken from a photo kindly sent us by Mr. T. H. Storey, the superintendent of the Sujjan Niwas Gardens, Oodeypore, Rajpootana (Central India).

The species represented is the Wild Date, Phœnix silvestris. Mr. Storey tells us the occurrence is quite rare, he having seen hundreds of miles of Date trees, but only this one group of branched Palms growing in a jungle, about 30 miles from Oodypore. Mr. Storey continues: "there is a large beetle [identified for us by Professor Westwood, as Scarabœus (Oryctes) Rhinoceros] which is very destructive to the Palm family (see fig. 39, p. 274). It bores a hole right through the centre of the tree, and cuts all the leaves off. I think this same beetle may be the cause of the Date Palm's branching. I have in the garden one tree which has been attacked, and it is now throwing out a side-shoot." We have no doubt Mr. Storey's conjecture is correct, and that the branching is an attempt to remedy the evil consequences of the injury inflicted by the insect: In ordinary trees such an occurrence is common, but is rare in monocotyledonous stems, owing to their peculiar organisation.

The case supplies a hint of which the gardener may occasionally find it to his advantage to imitate.

FRUIT DRYING.

Among the prominent objects which were to be seen at the Windsor show of the Royal Agricultural Society last June, was the fruit-drying apparatus of Messrs. Ph. Mayfarth & Co., of Frankfort-on-the-Maine, Germany, and 16, Mincing Lane, London, E.C. Fig. 41 represents the apparatus which was awarded the 1st prize at the show in question, and it consists of a mantle-oven furnace, connected with the drying-shaft, which is elevated at the end, so as to ensure a better circulation. The fruit to be dessicated is placed on wire trays, which are then introduced to the oven, which is in two chambers, and each capable of receiving two or three series of trays. We have seen samples of Gooseberries, Cherries, Apples, Pears, Currants, Cabbages, Leeks, &c., dried by the apparatus, and the results appeared in each case satisfactory. The apparatus is constructed in six sizes.

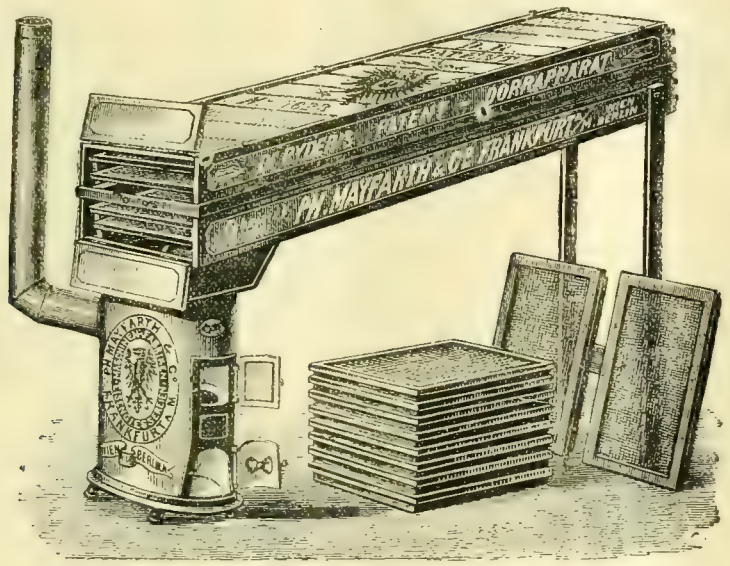


Fig. 41.—Fruit Drying Apparatus.

THE GARDENS OF PARIS.

THE NURSERY OF M. BLEU.

From the Jardin des Plantes it is easy to visit the above nursery, famous for certain novelties, especially for Caladiums and Bertolonias, as well as hybrid Orchids. It is a small place, but worth a visit for these plants. The distance is not too great to walk, but the tram may be taken in the Rue Monge, direct to the Avenue d'Italie, No. 48.

The Luxembourg Gardens

may also be considered to fall within this district. They are about fifteen minutes' walk from the Jardin des Plantes, and very near the trams running along the Boulevard St. Michel and the Boulevard St. Germain. In these gardens will be found some good ornamental gardening, and from this point of view they are among the most important to be visited. A good idea, for instance, may be got from the use of a number of fine old zonal Pelargoniums in the borders, which I was told, are planted out and taken up every year. By them we see what a Pelargonium really is, and I believe that beds made with such, in any combination, or alone, would have a very pleasing effect. It would be a change at least from the level surface of the usual mass of juvenile plants. The houses must be visited, since they contain important collections of Orchids and Bromeliaceæ, and various plants of interest; though, for the present, a number of the best are at the Exhibition in the grounds of the Trocadero, occupying a house devoted to them, which should not be missed. At home there is still much to see, and I was fortunate in finding the new Cypripedium vittatum (C. Binoti) in flower, and then being drawn for a plate in *Le Jardin*. It is quite distinct, and the leaves are even ornamental by their yellow margins, to which, no doubt, the name refers.

Nurseries in the Vicinity of Paris.

One day, or even more, may well be given to the nurseries in the neighbourhood of Bourg-la-Reine and Sceaux, about twenty minutes or a little more from the Paris terminus of the Chemin de fer de Sceaux, not far from the top of the Boulevard St. Michel. At Bourg-la-Reine are the celebrated nurseries of Messrs. Bruneau & Jost, which should not be missed by fruit growers. The firm takes 1st prize for fruit trees at the Exhibition, and first-rate culture is evident on the spot. Here also are the nurseries of Jamin, well known for fruit culture; and also of Margottin, for Roses and Vines, which I had to skip. All these nurseries are near together. Leaving one of the outlying nurseries of Messrs. Bruneau & Jost, I was placed on the way for the well-known establishment of Messrs. Thibaut & Keteleer, of Sceaux, who have many interesting plants, though now, I was told, there are no plant collectors in France, it is all and only decoration. Orchids, I suppose, may be excepted, as they are beginning to get popular, but when Orchid culture is spoken of in France, it means nothing like that of England. Here I was shown a very fine plant of Tillandsia argentea, including the old growth, about 2 feet in length.

The next nursery is that of Messrs. Croux et fils, who are perhaps the largest exhibitors of trees and shrubs at the exhibition, where they have, I chance to remember, a remarkable set of weeping trees. This nursery stands in great repute, and evidently with reason. One of their novelties is the new Genista Andreana, figured in the *Revue Horticole*, and of which they have a fine stock. From verbal description, I judge it to be a very good novelty. Near this nursery is another important one—that of M. Paillet, a grower of trees and shrubs, and noted for Pæonies. The nearest station now for return to Paris is Fontenoy, and it is the most convenient one for the last three nurseries, while Bourg-la-Reine is best for those first mentioned.

The Arboretum at Segrez.—By kind introduction, I had the privilege of seeing one of the most interesting of Arboretums—that of the late M. Lavallée, at Segrez, well known by certain publications, in which some very choice trees and shrubs are figured. I refer to it chiefly to mention Clematis integrifolia var. Duranta, a very fine variety, which seemed to me not unlikely, if properly taken in hand, to give rise to an entirely new section of this handsome genus. A fine specimen of Gordonia grandis, 8 feet high, and about 10 feet through, was one of the interesting kinds in flower.

It is, of course, understood that I do not mention all there is to see in these notes, but I think these notes of what I saw refer to the most imporant. Had I known in time, I should have visited one of Vilmorin's establishments at Verrières-le-Buisson, reached by omnibus from Massy beyond Bourg-la-Reine.

Another establishment I would have seen is that for hardy flowers, near the station at Auteuil, which, judging from other establishments of the City of Paris, must be worth seeing. No special study can better be recommended than that of the gardening operations of the city, infinitely superior, I believe, and far more instructive to the people, than anything we have in London. The smoke of London would, no doubt, be against the same degree of interesting variety, but we have not even a trial-ground where its effect on the different kinds could be tested. We have no nursery where good subjects can be propagated for distribution, and, I take it, no sufficient source of supply. Our parks might no doubt be better planted, and made much more interesting than they are.

The Bois de Vincennes,

is worth a visit, for some pretty scenery about the Lac Daumesnil, and also in particular for the so-called School of Arboriculture, all situated near the Porte Picpus, through which a tram runs from the Place de la Bastille. It may also be reached by rail from the same point. The School of Arboriculture is well worth attention,

though it is not quite what would be understood by the expression in England. It is rather a museum for living specimens of all the trees, shrubs, and bedding plants that are used in the parks and squares. In this it carries out a good idea. There is a section respectively for Coniferæ, herbaceous plants, trees, shrubs, and bedding-out plants. In addition, there is a walled garden, which contains collections of fruit trees, and where also all the forms of training are exhibited. It is an excellent institution for the study of gardening material, though I imagine it cannot at present include quite everything it intends; it is young, however, and still in process of formation. In this neighbourhood, close to the Reuilly station, convenient for return to the Place de la Bastille, is one of the interesting establishments of the great Vilmorin firm. Here they have their immense seed stores, with splendid machines for cleaning; and also, behind, a trial ground of great interest and rich with various novelties. The exhibits of this firm must not be missed in the grounds of the Trocadero.

PARCS DES BUTTES CHAUMONT AND MONCEAU.

Two of the most important Parks do not fall in well to make a day with any other gardens, but they should be visited, and may be combined with places of another kind. These are the Parc des Buttes, Chaumont, and the Parc Monceau. The former is of particular interest to landscape gardeners, being quite unlike anything else, and it may be reached by tram from Père Lachaise, if that remarkable city of the dead should be visited. The Parc Monceau is one of the best examples of town gardening in Paris; one of the prettiest spots. Trams run up from the Madeleine, and it is not very far from the Arc de Triomphe. Bedding-out in Paris, so far as I have seen, shows no distinctly new idea, nor any particular novelty, as it did some years ago when shrubby Chrysanthemums were first used.

PARIS MARKETS.

The flower markets of Paris are most conveniently taken with some of the ordinary sights, or during a general view of the city. They generally present something worth observation. The most central is that held on Wednesdays and Saturdays not far from Notre Dame, on the side walks of the Quai de Genres, of the Quai de la Cité, and of the Quai aux Fleurs, as well as on the space known, I believe, as the Marché aux Fleurs, all running more or less together. Another is held on Tuesdays and Fridays around the Madeleine, and is said to form one of the prettiest sights of Paris. Single Asters (Callistephus), and Echinops, I found here among the cut flowers not commonly grown for sale. Clethra alnifolia struck me as unusual. Begonias are extensively used in Paris, and one always called B. castaneafolia, but not that botanically known by this name, is one of the best for pots and beds, branching copiously, of good habit, and covered with bright red flowers. Near the Madeleine are the Champs Elysées and the gardens of the Tuileries, which may be visited at the same time. *R. J. L.*

HOME CORRESPONDENCE.

IMPORTATION OF FOREIGN FRUIT.—In opening a floral and horticultural exhibition at Farnworth, near Bolton, on Friday, the 24th, J. R. Fletcher, J.P., of Keisley, said that he had had a very extensive experience of such shows—in fact, at his home he had about one hundred silver cups, &c., won by him and his father at various exhibitions of the kind. He pointed out to his hearers that no fewer than 3,800,000 bushels of Apples were imported into this country at a cost of £800,000, and urged upon every one having the convenience to cultivate the fruit as much as possible. There were kinds of fruit, of course, in the cultivation of which they could not compete with other countries, but in many kinds of produce, England could be at the head. It was a notable fact that English cattle and horses were the best that could be had. Why was this? He attributed it mostly to shows. The farmers went round and saw better specimens than their own, and did their best to come up to the standard of what had been seen. Thus a healthy rivalry was created, and they got as near perfection as possible. He advocated a greater cultivation of flower and vegetable shows throughout the country, so as to encourage cottage garden producers especially. *J. C., Bolton.*

ECHINOCACTUS PUMILUS, *Lemaire.* — Reading the paragraph of "T. S. C.," p. 249, I remembered once to have read something about the flowering of this curious species in *Forster's Handbuch der Cacteenkunde*, 1886, 2nd edit., the translation of which I give in the following:—"Flowers from June to October, numerous, out of the thorn-cushion (stachelpolster) of the top, proportionally rather tall—9 to 13 mm. long; nothing particular, dirty greenish-yellow, and of a very short duration; opened just a little or not at all! Fruits (berries) as big as a large Pea, greenish; seeds easily germinating, even sometimes germinating inside of the fruits. Seedlings two years old produce numerous blossoms and fruits." *T. C. W. M.*

AN EFFECTIVE FLOWER BED.—One of the pretty beds I have seen of late, consisted simply of two kinds of foliage plants, and was in the garden of my neighbour, Mr. Charles Painter, Aldborough Hall. The ground work of the bed was Coleus Verschaffeltii, or probably the improved form of the same known as Taylor's Pet. Amongst these the fish-bone Thistle — Chamæpuce cassabonæ — was planted thinly in designs, with mathematical precision. The contrast thus afforded, as regards colour, was charming, whilst the divergence of form in the two plants was very striking; whether seen in sunshine or in the shades of evening, the effect was equally good. *W. Earley, Ilford.*

THE INGATHERING AND STORING OF FRUIT.—The ingathering of fruit may appear a simple operation to many, and so it undoubtedly is, so far as just the picking from the tree is concerned, but to conduct it properly requires much care and a considerable amount of knowledge of the different sorts, as some are ready long before others, and the late ripening kinds cannot well be allowed to hang too long on the trees, for if plucked before they are ready they are sure to shrivel when stored. Some of the first among Pears that become fit to gather are Doyenné de Ete, Citron des Carmes, Jargonelle, and Williams' Bon Chrétien, the three first-named coming in during July and the first week in August, and the latter towards the end of the month, as is well known to most people in cities and towns, who so frequently hear the cry of "Mellow Pears," "Fine William Pears," which fruit is then to be seen in plenty on most coster's barrows. After these are over, then comes the lull and greater scarcity, as they are succeeded by varieties that do not bear so freely and are not so much grown, as they require storing before being eatable, ripe and fit for the market. The first of note that needs attention and pulling from the trees is Beurré d'Amanlis, a large, fine looking, excellent Pear that requires laying by about a week before being used. Louise Bonne of Jersey closely succeeds, and very good it is, full of sweetness and juice. The next and highest in merit for its season, is the Marie Louise, then Doyenné du Comice, following on with Glou Morceau, Josephine de Malines, and Bergamot Esperen—the last the latest of all. There are many others of inferior merit, but I leave them, and it only remains to say a few words on the picking. This should be done on a dry day, and the Pears taken in the hand and laid in padded baskets as gently and carefully as if they were eggs, for if the least abrasion of the skin takes place, or the slightest bruise is made, the fruit is at once injured, and will not keep many days. To prevent pressure on each other in the basket, only a single layer or so should be put in, and these carried gently off to the room where they are to be stored, and there laid on clean paper in rows and labelled, that they may be watched and gleaned from as they turn in and become ready for use. With regard to gathering, it may broadly and truly be stated that no special time can be fixed, as seasons, soils, and positions of the trees have so much to do with ripening, and the exact day or moment when it should be done can only be found out or learned by experience, which is the great monitor in most matters; but there are two tolerably safe tests by which one may judge, and they are the ripeness or forwardness of the pips, which, when the fruit is fit to pluck, are brown; and the other is, the ready way that the Pears leave the stalk at the joint when gently lifted and bent upwards, which slight movement will at once cause them to become detached in the hand. With the early and mid-season Pears, it is always a good plan to go carefully over the trees and pluck the most forward-looking, so as to make two or three gatherings; and to expedite the ripening of any of these, it is an easy matter to put a portion of them into a warm room or cupboard, which not only brings them on quickly, but improves the flavour by making the juice sweeter and the flesh more mellow and soft. Most of the remarks made above apply equally to Apples, many sorts of which will now soon be fit for gathering; but, like late Pears, the longer late Apples are left to hang on the trees, the better they are, provided frost does not come and injure them. The best place for storing Apples is a dry cellar, as there the temperature is low and uniform, which is a great point in keeping the fruit, for the less the heat varies, the fresher and plumper will it remain till the end. Some store their Apples on straw, but there is nothing equal to clean, sweet boards arranged as shelves for the fruit to lie on, as then there is no taint from mould, such as straw sometimes imparts; and another thing in their storage is that they should never be laid thickly, but spread out singly with their snouts upwards, and not moved after till used, as directly they are housed they begin to sweat, and the exudations forms a sort of greasy deposit on the skins, and favours their keeping. *J. Sheppard.*

A DESSERT TOMATO.—We have the pleasure to send you herewith some specimen fruits of a new Tomato—"Cooper's Luscious"—introduced by us last year, of which we shall be pleased to have your opinion. The special merit, as we think, of this variety is its sweet flavour, which renders it fit to be used as a dessert fruit. We believe this will be the parent of a new race of this useful vegetable, but are anxious to have our opinion on this point confirmed by a competent authority. *Cooper, Taber & Co., Limited.* [Very luscious, and pleasant eating. ED.]

FORCING PEAS.—The season for Peas has been a very good one in this district so far, although the mildew caught the midseason varieties. Good supplies were obtained in June and July, and now the late crops are coming in. It takes some amount of forethought to be able to have Peas from June 12 until Christmas Day, and it does not do to run away with the notion that favourite varieties are all that are required; but a selection must be made of suitable ones, and that is where practical knowledge becomes of value, as there is little done in gardens in Pea forcing, it not being a very profitable business; but a dish of Peas will not fail to please at Christmas or New Year's Day. The expense is but small, and if one possesses a Cucumber-house and shelves around it, Peas can be grown in boxes or 8-inch pots. Sow the seed now in good loam, stand the boxes, &c., at the foot of a south wall, and when frost is probable remove them to the house if they have already germinated. When sown later, place in the house at once. At that dull time of year the syringe is not much used, but at no other time must it be directed on to the Peas for fear of the plants damping off. American Wonder and Veitch's Little Gem are the Peas best adapted for forcing. *G. Howes, Merton.*

SCIADOPITYS VERTICELLATA.—This tree is perfectly hardy in the south-west of Scotland. It grows very slowly, only averaging 7 or 8 inches a year, but thrives very well planted in a sheltered situation, and in peat soil. It forms a beautiful and attractive object. *W. M.*

FERROUS SULPHATE, FOR CHLOROSIS OR "YELLOWS."—I have tried this remedy, as recommended on p. 462 of the *Gardeners' Chronicle* for April 13, 1889, in remarks on Sachs' experiments, by Professor Marshall Ward, and am very much pleased with the result. Owing to the drainage being badly laid when one of our Peach-houses was built, I found it necessary to lift a number of large, old trees in November, 1887, and put in fresh drainage. One of these trees was Princess of Wales Peach, and which was severely checked and weakened by being lifted, and early this spring it was badly affected with chlorosis, or "yellows." I accordingly removed the soil, about 1 foot in depth, immediately over its roots, and dissolved ¾ lb. of sulphate of iron (green vitriol) in water, at the rate of ¾ oz. to 5 pints of warm water. This was poured over the roots, and washed in with a plentiful supply of clean water, whilst

the soil was moist; the surface soil was then returned as before; and in about a fortnight the tree had improved considerably, and is now quite healthy. *W. H. Divers, Ketton Hall, Stamford.* [We congratulate you on your enterprise and rejoice at your success. Ed.]

CUT VERBENAS AT FLOWER SHOWS.—At the larger flower shows held in the West of England, prizes are still offered for stands of these; but the varieties shown are generally of poor quality, and unworthy of the money prizes offered. The fact is, the Verbena, as an exhibition subject, and for other purposes, is a declining flower, and ere long it will be banished from the flower garden. Now, if compilers of schedules would offer prizes instead for bunches of Phlox Drummondii, of which there are now many fine varieties, and also for bunches of different varieties of Sweet Peas, the number having been considerably augmented of late, the gain would be very great indeed. Phlox Drummondii and Sweet Peas are charming subjects for show purposes, and they have high claims to recognition in schedules of prizes. *E. D.*

PEACHES.—I assume "Enquirer," p. 227, means the Alexander Peach, an American production introduced by Messrs. Rivers, and which is by many considered one of the best of the early kinds. But, so far, I give preference to the Waterloo, as, with us, the latter grows to a larger size, and crops very regularly. I have this year taken fruit from a tree, indoors, which turned the scale at half a pound, and the tree bore from eight to ten dozen fruit. This tree was started in the first week of February, and throughout was subjected to very little forcing, except what was possible by sun heat; we gathered ripe fruit in the last week of May. I find the flesh, however, is very tender, and requires care in handling. The flavour is greatly improved when the fruits are gathered a couple of days before being quite ripe, and placed in a dry fruit room to finish. Alexandra Noblesse is probably one of the best Peaches raised by Mr. Rivers, and is alike good in and out-of-doors, and its qualities are too well known to need any lengthy comment. I do not think "Enquirer" will have much reason for regret if he plants the following:—Waterloo, Hale's Early, or River's Early York, and Alexandra Noblesse; and, for the second house, Royal George, Grosse Mignonne, or the old Nobless, Stirling Castle, Bellegarde, Princess of Wales, and Sea Eagle. *H. Markham.*

CHRYSANTHEMUM MAXIMUM.—This fine border plant ripens seed in abundance in my garden, and the seedlings come up around the parent plant. A few which I have allowed to flower, show a good deal of variation; some have the ray flowers more thickly set than others, and some of them more or less cleft at the end. One seedling is 4 or 5 feet high, and has trifid rays, the division extending for half their length. I am not sure that this is any improvement on the type; but it shows an inclination to vary, which may lead to ornamental results. I therefore call attention to it, and intend to save a large quantity of seed, which I shall be glad to distribute about the end of September, to any one who will grow it by way of experiment. The seedlings are very vigorous from the first, and require no care, except thinning, so as to give each an opportunity of growing to flowering size. The plant of C. latifolium, which produced the very large flowers figured last year in the *Gardeners' Chronicle*, is very slow of increase. The thick and succulent stalks do not break readily at the base, and stock is not easily made by division. I am sending specimens of this year's flowers, showing that they have not degenerated. I am afraid they will not ripen seed. *C. Wolley Dod, Edge Hall, Malpas, August* 26.



Fig. 42.—Dahlia coccinea, hort.: magnified pollen grain of D. mexicana (A); D. coccinea (B); D. superflua (C); D. cervantesii (D). (see p. 274.)

LILIUM AURATUM.—The accompanying photograph is that of a Lilium auratum which has lately bloomed in my garden. In the summer of 1888 the bulb (supplied by Messrs. Carter & Co.), planted in a made soil of peat-earth and sand, produced twelve blooms. In the latter part of October of the same year it was transplanted in similar soil, and this summer has produced the remarkable number of seventy-three blooms on one stem, all of which were fully open at once. They averaged from 6½ to 8½ inches across; the flower-spike was 21 inches in height and 41 in circumference at the base. The stem is 6 feet 3 inches in height, and flattened at the top to a width of 2 inches. The Lily has been an object of interest in the neighbourhood, and I think these details may perhaps not be uninteresting to your readers. *J. Camphill, Fortingall, near Aberfeldy, N.B.* [We have often seen even more flowers on such spikes. Ed.]

STRAWBERRY BRITISH QUEEN.—I am glad to see this good old Strawberry so favourably noticed, as unquestionably it is still the best. Here we only cultivate others that come in before it or after it, which is done so as to prolong the season; as when British Queens can be had, it is useless to put inferior kinds on the table with them, or give them by way of change, as no one who is a judge of fruit would care to eat them after tasting the Queens. Nearly the whole of our plants for forcing are of this last-named variety, and quite three-parts of those outdoors; but we have them there a yard apart in the rows, which is quite near enough to get the fruit properly ripened and coloured. As to the Queen not doing in light soil, I am of opinion that a light soil is rather in its favour than otherwise; but plants must have depth for their roots to strike down, or they suffer from mildew. The way to manage is to break up the ground by trenching, and while this operation is going on, a heavy dressing of manure should be worked in below, and before planting it is necessary to tread the ground firm. One of the reasons—and that, perhaps, the chief one—why we succeed so well with the British Queen outdoors is, that we always plant our forced plants, and never keep our beds longer than the third year, or allow a runner or old outer leaves to be left on when the fruit is gathered, as directly this is gathered a clearance is made, and the plants are then fully exposed to the sunlight and air, which enables them to develop and ripen their crowns. For forcing, we layer right into the fruiting pots at once, and this has a double advantage, as time and labour are saved, and the runners can be left much longer drawing on the parent plants, which helps to get them stronger than they would be if severed at an earlier date. I find that my friend Mr. Wallis, of Orwell Park, Gardens, adopts the same system, and no one grows better Queens than he, and, except for preserving, I do not think he has any other kind on the place, as he begins gathering Queens in March, and goes on with his potted plants till they are ripe in the open. *J. Sheppard, Woolverstone Park.*

IRIS BORNMUELLERI (*Haussknecht*) is the name of a most beautiful new Iris, now shipped from Armenia to be introduced to our gardens. It is of the reticulata shape, the flowers smaller, but their small size is amply compensated by their brilliant deep golden-yellow colour. It occurs and flowers near the melting snow, and therefore promises to be a very early spring-flowering plant. The same shipment contains a magnificent variety of I. persica, of a bright deep purple colour; and also of I. lupina, the flowers of which resemble somewhat those of Iris iberica, but have the colour of a wolf's fur. *Max Leichtlin, Baden-Baden.*

HOLLYHOCK DISEASE.—This seems to be virulent among Hollyhocks in our district, and it is much to be feared that these plants will go out of cultivation, as attempts to grow them in a satisfactory condition fail. I should like to hear of a remedy which is of easy application, and so would almost everyone who has a garden, that he might be able to save the Hollyhock from annihilation. If the disease is fostered and propagated by the wild Mallow, it ought not to be difficult to exterminate that weed in counties where it is found, as it is never seen in any great quantity, and if at the same time the growing of Hollyhocks ceased in the same parts, the Puccinia would have nothing to live on, unless it attached itself to some other plant.

This it is not supposed to do, but only to attack and live on the Mallow family; but how these fungi spread is a mystery. *J. S.*

SOCIETIES.

READING HORTICULTURAL.

AUG. 28.—A very good show indeed, all round, was the verdict generally passed by visitors to what is generally known as the autumn show, held in the Abbey ruins on the above date. It was the most extensive display of fruit seen at Reading for years; and the vegetables were of fine quality. The Forbury Garden was a delightful extra-display to the exhibition; the flower beds are at their best, and the condition of the gardens is highly creditable to Mr. Geo. Phippen, of Reading, who has charge of them.

Plants, &c.—In the class for six stove and greenhouse, Mr. A. Aitken, gr. to Major Macking, Ritchings Park, Slough, a new exhibitor, was 1st, with a very nice fresh lot of plants in good condition, which included a fine piece of Lagerstrœmia indica, Allamandas grandiflora and Hendersoni, Eucharis amazonica, Bougainvillea glabra, Dipladenia insignis, and Ixora Williamsii.

The best four came from Mr. Baskett, gr. to W. J. Palmer, Esq., Reading. The best specimen plant was a very fine Eucharis amazonica, from Mr. Butcher, gr. to G. Palmer, Esq., Reading. The best new or rare plant was Phrynium variegatum, from Mr. J. F. Mould.

Some fairly good Achimenes were here shown by Mr. Woolford, gr. to A. Palmer, Esq., Reading, and Messrs. Dockerill. Fuchsias were very much better than we have seen them at Reading for years, free, luxuriant, large size, and admirably-bloomed plants of good varieties. Mr. Bright was 1st. Mr. Bright also had the best four in the amateur class. Balsams were fairly good. Mr. T. Lockie, The Gardens, Oakley Court, Windsor, was 1st, with six superb Giant Purple Cockscombs.

Mr. Butcher staged a very good group of six Liliums of the L. speciosum type.

Bedding Pelargoniums in sixes were very numerous, Mr. Aitken being 1st with a very fine lot.

Tuberous-rooted Begonias were very good indeed; a half-dozen of highly creditable plants won the 1st prize for Mr. Dockerill.

In the class for groups covering a space of 120 feet, Mr. Woolford was 1st with an elegant arrangement. In the case of the smaller group, filling a space of twenty-four feet, Mr. Currey, gr. to Col. Pepper, was 1st.

The best six variegated foliage plants came from Mr. Wills, gr. to Mrs. Pearce, Bassett, Southampton, who had Crotons Johannis, Warrenii, and Disraeli, Cycas circinalis, and Latania borbonica in fine condition.

Mr. Currey had the best four specimens in Cycas circinalis, Croton Prince of Wales, Latania borbonica, and Dasylirion crotrichum.

Mr. Aitken had the best six stove and greenhouse Ferns, staging Davallia fijiensis plumosa, Gymnogramma Pearcei robusta (very elegant), G. peruviana argyrophylla, Pteris scaberula, Davallia Mooreana, and Adiantum Lathomi.

Mr. Woolford had the best four, in Adiantum Farleyense, Microlepia hirta cristata, Lomaria gibba platyptera, and Davallia Mooreana.

Lycopods were very finely shown by Messrs. Dockerill and Mayne, grs. to Lord Saye and Sele, Reading. Palms were represented by three capital specimens from Mr. Wills, viz., Kentia Belmoreana, K. Fosteriana, and Areca lutescens.

Cut Flowers.—Mr. John Walker, Thame, had the best eighteen Dahlias—a very good lot indeed. Messrs. J. Cheal & Sons, nurserymen, Crowley, had the best twelve bunches admirably set up, and including such varieties as Victoria, W. C. Harvey, Miss Roberts, Miss Linnaker, Lady Montefiore, and Duchess of Westminster.

In the amateurs' class, Mr. Wheeler, Henley, had the best twelve blooms of show varieties.

Messrs. J. Jefferies & Sons, nurserymen, Cirencester, had the best eighteen Roses, showing some very good blooms indeed.

In the amateurs' class, Mr. Turton, gr. to J. Hargreaves, Esq., Maiden Earleigh, was 1st. Phloxes, German and French Asters, Gladioli, double Zinnias, &c., were all very good.

In the class for six blooms of any variety of Rose, Messrs. J. Jefferies & Son, were 1st, with Mrs. J. Laing, admirably shown. Mr. G. Phippen, nurseryman, Reading, had the best eighteen varieties of cut flowers, a grand lot.

In the amateurs' class, Mr. Durman, gr. to J. W. Workman, Esq., Reading, had the best six bunches of hardy flowers.

Of miscellaneous contributions, a large collection of Lilies, &c., was staged by Messrs. Oakshott & Millard, seedsmen, Reading; a box of beautiful double and single Begonias, by Mr. R. Owen, Castle Hill Nursery, Maidenhead; and hardy cut flowers, from Mr. T. Such, nurseryman, Maidenhead.

Fruit.—Such an extensive and fine display of fruit had not been seen at Reading for years; and in every class except that for Apricots, in which only one dish was shown, there was a very keen competition. The best collection of eight dishes came from Mr. Ashby, gr. to Mrs. Fanning, Whitchurch, who had Black Hamburgh and Muscat of Alexandria Grapes, Royal George Peaches, Elruge Nectarines, White Ischia Figs, Prince of Wales Plum—scarcely a dessert variety; and Morello Cherries.

In the class for six dishes there was also a close competition. Here Mr. H. Cakebread, gr. to Sir P. Rose, Bart., Raynor's, Penn, was 1st, with Alicante and Muscat of Alexandria Grapes, both very fine; Queen Pine, Washington Plum, and Morello Cherries.

Seven competitors appeared in the class for three bunches of Black Hamburgh Grapes.—Mr. J. Lane, gr. to Miss J. D. Smith, Ascot, being 1st with large and finely finished bunches.

In the class for three bunches of any other black, Alicante and Madresfield Court were shown. Mr. Waite, gr. to the Hon. Col. Talbot, Glenhurst, Esher, was 1st with very fine bunches of Alicante. Mr. Lane had the best three bunches of White Muscats; and in the class for any other white, Mr. Ashman, gr. to F. Crew, Esq., Billingbear Park, Ascot, was 1st with very fine Buckland Sweetwater.

Peaches were remarkably fine, and eleven dishes of six fruits competed. Mr. W. Lees, gr. to Mrs. Marsland, White Knights, Reading, was 1st with remarkably fine Têton de Venus. Mr. Pound, gr. to G. May, Esq., Caversham, had the best Nectarines, showing very fine Pine-apple. Apricots were represented by Moor Park. The best Figs were White Ischia and Brown Turkey. Plums were largely and finely shown; the best three dishes came from Mr. Cox, of Park, who had Washington, Kirk's, and Pond's Seedling, all very fine.

Mr. Paston, gr. to the Hon. C. S. Irby, Taplow, had the best six dishes of dessert Apples, having Strawberry Pippins, Irish Peach, Blenheim Orange, Worcester Pearmain, and Duchess of Oldenburgh.

Mr. Webb, Benham, had the best six dishes of culinary Apples, staging grand examples of Eclinville, Wellington, Gravenstein, Stirling Castle, Warner's King, and Cox's Pomona.

Mr. Goodman had the best four dishes of dessert Pears, staging very good fruit of Clapp's Favourite, Souvenir du Congrès, Bergamot, and Bon Chrétien. Stewing Pears were also well shown by Messrs. Paxton and Goodman.

Vegetables.—Of these there was a fine display, and notice of a few of the leading classes only can be given. Messrs. Carter & Co. offered special prizes for nine dishes of vegetables, and Mr. Lye, gr. to W. H. K. Kingsmill, Esq., Sydmonton Court, Newbury, was 1st, with a superb lot. The best collection of six dishes in competition for Messrs. Webb & Sons' special prizes came from Mr. Kneller, gr. to W. S. Portall, Esq., Malshanger, Basingstoke. Mr. Parker, Southern Hill, was the only competitor in Mr. C. Fidler's class, for six kinds of vegetables, shown by cottagers, and was awarded the 1st prize. Mr. Pope, The Gardens, Highclere, Newbury, was 1st, with six dishes of vegetables (open to gardeners, the prizes offered by Mr. Fidler). The best brace of Phippen's Improved Telegraph Cucumbers came from Mr. T. Lockie, Oakley Court. The special prizes offered by Mr. Phippen were, however, absurdly high in comparison with others. Messrs. Oakshott and Millard's leading special prize for nine dishes of Potatos was won by Mr. Lye, Sydmonton Court, who had superb examples of Purple Perfection, Reading Giant, Satisfaction, the Magistrate, King of Russetts, Chancellor, Prime Minister, and Reading Perfection. Mr. Pope won Messrs. Oakshott and Millard's leading special prize for nine dishes of vegetables. These special prizes for six dishes of vegetables, shown by cottagers, were won by Messrs. Chamberlain and Few.

Of miscellaneous exhibits, a remarkable collection of fruit came from Messrs. Thomas Rivers & Son, nurserymen, Sawbridgeworth. This included trees in fruit and pot Vines, and many dishes of their new varieties of Peaches, Nectarines, Cherries, Plums, Apples, Pears, &c.—a highly meritorious contribution.

HARPENDEN HORTICULTURAL.

AUGUST 28.—Favoured with sunny weather, the eleventh annual show of this Society, held in Rothamsted Park, the seat of Sir J. B. Lawes, Bart., the President, was a decided success, both in the number of entries received, the quality of the exhibits staged, and the visitors who passed the entrance-gates.

Plants.—For four stove and greenhouse plants in flower, distinct, there were three exhibitors, the premier honours going to Mr. J. Turk, gr. to P. Bosanquet, Esq., Pondfield, Little Berkhamsted, comprising Cassia corymbosa, Lapageria rosea, L. alba, and Bougainvillea glabra.

The centre of the largest tent was occupied by foliage plants, 1st prize going to Mr. T. Nutting for a grand and effective lot of six plants, which consisted of Croton Queen Victoria, C. Princess of Wales, Areca lutescens, A. Verschaffeltii, Dicksonia antarctica, and Dasylirion acrotrichum. With regard to the Areca lutescens, it was a truly magnificent plant, and thought to be the finest specimen of its kind in the kingdom. It stood in a tub 2 feet across, had ten stems, the tallest being 16 feet high, and seventy fronds which expanded to a distance of 15 feet. In this class the 2nd prize was secured by Mr. J. Turk for capital examples of Pandanus utilis, Croton Youngii, C. majesticus, C. undulatus, Latania borbonica, and Seaforthia elegans.

There was a good show of single and double zonal Pelargoniums, but the Begonias were scarcely up to the standard of excellence. In the exotic Fern competition, Mr. A. Sconce, gr. to J. S. Hill, Esq., Hawkswick, St. Albans, was awarded 1st place for meritorious plants of Gymnogramma chrysophylla, Microlepia hirta cristata, Adiantum Williamsii, A. Farleyense, Platycerium alcicorne, and Davallia Mooreana.

The Coleus collection contained an admirable lot from P. Bosanquet, Esq., Little Berkamsted, which attracted considerable attention, and had no difficulty in winning 1st prize—they were Duchess of Montmart, Ernest, Her Majesty, Mrs. George Simpson, Butterfly, and Pompadour.

Groups for Effect.—In this competition a departure was made from previous years, the groups being arranged on the ground instead of on a platform, and the result was a decided improvement in the general appearance of the exhibits.

Mr. T. Nutting staged a pretty and tastefully arranged collection, which was worthily awarded premier place, and consisted of a groundwork of Maidenhair Ferns, ornamental plants of Panax, Pandanus, Coleus, intermixed with small Crotons; and a border of Isolepsis gracilis. From this groundwork sprang Areca lutescens, Kentia Fosteriana, Cocos Palms, Cannas, Liliums, Dracænas, Gladioli (The Bride), and Begonias.

Facing the entrance to the largest tent was a beautiful non-competing group from the conservatories of Sir J. B. Lawes, Rothamsted (gr., Mr. W. Olver. In the background were fine specimens of Campanulas, with a capital assortment of foliage and flowering plants, including some noteworthy Gloxinias, Begonias, Liliums, Fuchsias, Vincas, and Ferns.

Cut Flowers.—In the class for forty-eight Roses, distinct, there was but one exhibitor, Messrs. G. Paul & Son, of the Old Nurseries, Cheshunt, showing a stand of blooms, that would have been hard to beat at any season.

For twelve Tea Roses: 1st, Messrs. G. Paul & Son, with a charming lot.

Dahlias were less numerously shown than is usual by this Society. In the class for twenty-four blooms, Messrs. G. Paul & Son exhibited a superb stand.

For twelve Dahlias, distinct, Mr. G. Arnold, Leighton Buzzard, the well-known amateur grower of that district, was a good 1st, with charming blooms of Mrs. Gladstone, John Henshaw, Clara, Fanny Stuart, Maurice, Joseph Ashby, Mrs. Theobald, Mr. Harris, J. T. West, Prince of Denmark, Colonist, and Herbert Picton.

Pompon and single Dahlias were a grand feature in the exhibition, several capital stands being set up for competition. Those of Mr. John Henshaw, of Harpenden, who worthily carried off premier honours, were remarkable for symmetry and beauty.

A keen contest was also experienced in the hardy herbaceous cut flowers, which are undoubtedly gaining in popularity year by year.

Messrs. Paul & Son, the Old Nurseries, Cheshunt, and Messrs. W. Paul & Sons, Waltham Cross, both contributed, not for competition, a splendid collection of cut flowers, which were the admiration of all visitors. In Messrs. Paul's exhibit we noticed several new single Dahlias, including W. C. Harvey, Ruby, Winifred, Mrs. Whitfield, Mrs. Gordon, and Aurora; Pompon Dahlias of great merit, Cactus Dahlias, Roses, and hardy herbaceous flowers of every imaginable hue, the beauty of the flowers and their artistic arrangement proving a great acquisition to the show.

No less charming was the superb collection of Messrs. W. Paul, which contained immense baskets of choice Roses; interspersed among which were herbaceous cut flowers, Ferns, Phlox, Cactus Dahlias, show and fancy Dahlias of most brilliant colours, single and Pompon Dahlias, Gladioli, and Hydrangea paniculata.

Fruit was well shown both in the collection of eight dishes (distinct), and in the individual kinds. In the collection, Mr. T. Nutting, was 1st, with Muscat of Alexandria and Black Hamburgh Grapes, Sutton's Invincible Melon, Green Gage Plums, Pine-apple Nectarines, Brunswick Figs, Florence Cherries, and Royal George Peaches.

For two bunches of Black Grapes, Mr. F. Faint, gr. to R. Hoare, Esq., Marden Hill, Hertford, had no difficulty in securing 1st place.

Melons.—Several competitors entered the list for Melons, but an example of Masterpiece, a fruit of exquisite flavour, was far ahead of all others, and was shown by Mr. C. Sibley, gr. to H. T. Hodgson, Esq., Harpenden.

Messrs. Lane, of Berkhamsted, contributed a choice collection of fruit, not for competition, which comprised four varieties of Grapes, ten varieties of Plums, seventeen of Apples, besides various Nuts.

Vegetables were an exhibition in themselves, of fine quality in all departments. *J. J. Willis.*

ROYAL OXFORDSHIRE HORTICULTURAL.

AUGUST 29.—The third exhibition of this Society took place within the quadrangle of Queen's College, the plants and cut flowers being placed upon tables staged under the colonnade, the vegetables finding places on tables along the sides of the walks which intersect the grassy lawn. The weather was delightful, and there was a good attendance.

The principal exhibitors of plants were Mr. G. Jacob, nurseryman, Witney; Mr. C. Jacob, nurseryman, Headington; Mr. C. T. Hawkins, Summertown; the Rev. the Warden of Wadham; Mr. J. Walker, nurseryman, Thame; Mr. J. Mattock, nurseryman, Headington; Mr. T. Anstiss, Brill; and G. H. Morrell, Esq.

Mr. G. Jacob had the best six stove and greenhouse plants, and the best specimen stove plant in flower was Stephanotis floribunda, from Mr. C. T. Hawkins; the best specimen greenhouse, a very fine piece of Valotta purpurea, from Mr. T. Anstiss; the best foliaged plant—Dracæna Massangeana or, more properly, fragrans variegata—from Mr. C. Jacobs; the best specimen hardy plant, a very fine Statice incana, from Mr. R. Price, of Headington. The Warden of Wadham was 1st with six well-grown and flowered Fuchsias; Mr. John Walker had some capital zonal Pelargoniums, and Mr. J. Mattock, good Tuberous-rooted Begonias. Cut flowers were very bright. Mr. J. Walker had the best twenty-four bouquets, and he was 1st with twenty-four and eighteen show Dahlias and nine fancies. Cactus and single Dahlias were also in good form. Messrs. Mattock and Saunders had the best Roses. Asters, quilled and flat-petalled Zinnias, Gladioli, and perennials in bunches, were all very good.

Fruit was somewhat sparingly shown, but Grapes, Peaches, Nectarines, Plums, &c., were all in good condition, and fairly numerous. The best collection of six dishes of fruit grown in the open air, for which handsome special prizes were awarded, came from the gardens of Sir Wm. Throckmorton, Bart.

Vegetables were remarkably fine, Potatos especially being a leading feature. The following varieties were conspicuous by reason of their high quality:—Reading Russett, Vicar of Laleham, The Dean, Mr. Breese, Schoolmaster, Snowdrop, Chancellor, London Hero, and Reading Giant. Some excellent pods of the fine old Jeyes' Conqueror or Ne Plus Ultra Pea were shown.

Among miscellaneous exhibits were stands of cut Dahlias from Messrs. J. Cheal & Sons, Crawley, and Mr. J. Mattock.

SCOTTISH HORTICULTURAL ASSOCIATION.

THE ordinary monthly meeting of this Association was held on the 3rd inst., in 5, St. Andrew Square, Edinburgh. Mr. Robert Morrison, Vice-President in the chair. A paper entitled "A Gardeners' Education," by Mr. John Wilson, B.Sc., St. Andrews University, was read by Mr. McKenzie, Treasurer of the Association. The paper recommended gardeners to acquire a thorough and full knowledge of the several arts and sciences that bear upon the various branches of horticulture. Particular emphasis was laid by the writer on the importance of young gardeners acquiring a mastery of the use of the tools and implements employed in gardening, and a complete knowledge of all manual operations and practical management.

Exhibits on the table were as follows:—Samples of a new garden Beet, from Mr. McCombie, Mitford Hall, Morpeth, which the adjudicating committee considered possessed no qualities superior to other varieties in cultivation, but recommended Mr. McCombie to submit samples of it later in the season, when it had attained maturity. A white seedling Carnation, unnamed, of very superior form, substance, and purity of colour, and a crimson-edged Picotee, of first-rate quality, from Mr. Henry Reynard, The Gardens, Arden Clutha, Hamilton, to both of which the Association's First-class Certificate was awarded. Adiantum Flemingii compactum, and Tropæolum Vesuvius floribunda (!) from Messrs. T. Methven & Sons — the latter a very profuse bloomer, with the habit and colour of the type, was much admired; and the former was awarded a First-class Certificate. Mr. Robert Bell, Baron's Court, Ireland, sent a twin Cucumber about 20 inches long, united, in perfect symmetry, from stalk to apex—a curious but not unusual instance of "syncarpy" in the Cucumber.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending September 2.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 +	87	0	+ 198	+ 4	2 +	164	26.8	19	23
2	1 +	97	0	+ 40	+ 5	4 —	133	18.3	27	30
3	1 +	109	0	+ 31	+ 7	4 —	122	16.5	26	28
4	0 av.	125	0	0	+ 112	1 +	127	17.9	63	32
5	1 +	123	0	— 4	+ 60	5 —	118	20.0	47	30
6	1 +	132	0	+ 38	+ 75	4 —	123	16.4	53	31
7	0 av.	95	0	+ 65	— 23	3 —	139	26.9	24	32
8	1 —	109	0	+ 58	— 1	7 —	126	20.4	24	31
9	1 +	121	0	— 45	+ 88	8 —	126	22.5	48	36
10	0 av.	104	0	+ 16	— 53	1 —	154	25.4	23	27
11	0 av.	111	0	— 11	— 14	6 —	137	24.7	24	34
12	0 av.	134	0	+ 83	— 16	4 —	133	17.3	60	41

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending September 2, is furnished from the Meteorological Office:—

"The *weather* has been fine and dry generally over England, but less settled over Ireland and Scotland, where rain has fallen occasionally. At the end of the period severe thunderstorms were experienced over England, and also at some of the Irish stations.

"The *temperature* has been considerably higher than of late; it has exceeded the mean in most parts of Great Britain, and just equalled it in Ireland. The highest of the maxima, which were registered on August 30, ranged from 70° to 73° over Scotland, from 72° to 73° in Ireland, and from 73° to 83° over England. The lowest of the minima, which were recorded on somewhat irregular dates, varied from 35° in 'Scotland, E.,' 37° in 'Scotland, W.,' and 38° in 'Ireland, N.,' to 44° in 'England, N.E.' and 47° in the 'Channel Islands.' During the greater part of the period the minima were high for the time of year.

"*Rainfall* has been rather more than the mean in Scotland, N.,' and 'England, E.,' but less in all other districts. At most of the English stations the weather was rainless until the morning of September 2.

"*Bright sunshine* shows an increase, especially over England. The percentage of the possible amount of duration ranged from 19 to 27 in the west and north, to 53 in 'England, S.,' 60 in the 'Channel Islands,' and 63 in 'England, E.'"

MARKETS.

COVENT GARDEN, September 5.

MARKET still quiet. Prices remain the same as last week. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 6	Peaches, per doz.	2 0	8 0
Filberts, per lb.	0 10	—	Pine-apples, Eng., lb.	1 6	3 0
Grapes, per lb.	0 6	2 6	— St. Michael, each	2 0	6 0
Lemons, per case	12 0	21 0	Plums, ½-sieve	2 6	5 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, Fr., per lb.	0 4	—	Mushrooms, punnet	1 6	—
Beet, red, per dozen	1 0	2 0	Mustard and Cress, punnet	0 4	—
Carrots, per bunch	0 6	—	Onions, per bunch	0 5	—
Cauliflowers, each	0 3	—	Parsley, per bunch	0 4	—
Celery, per bundle	1 6	2 0	Peas, per quart	1 3	—
Cucumbers, each	0 6	0 9	Shallots, per lb.	0 6	—
Endive, per dozen	2 0	—	Spinach, per bushel	2 6	—
Green Mint, bunch	0 4	—	Tomatos, per lb.	0 9	—
Herbs, per bunch	0 4	—	Turnips, per bunch, new	0 5	—
Leeks, per bunch	0 3	—			
Lettuce, per dozen	1 6	—			

POTATOS.—No improvement in trade. Great difficulty experienced in obtaining really good samples. Beauties, 60*s.* to 80*s.*; Regents, 80*s.* to 100*s.*; Magnums, 60*s.* to 70*s.* Market flat.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ficus elastica, each	1 6	7 0
Asters, per dozen	3 0	6 0	Fuchsias, dozen	3 0	6 0
Balsams, doz.	2 0	5 0	Hydrangea, per doz.	9 0	18 0
Begonias, dozen	4 0	12 0	Lilium lancifolium, per dozen	12 0	24 0
Calceolarias, dozen	4 0	9 0	— auratum, doz.	12 0	30 0
Cockscombs, doz.	3 0	6 0	Lobelias, dozen	3 0	5 0
Cyperus, per dozen	4 0	12 0	Marguerites, doz.	6 0	12 0
Dracæna terminalis, per dozen	30 0	60 0	Mignonette, doz.	3 0	6 0
— viridis, per doz.	12 0	24 0	Musk, dozen	2 0	4 0
Euonymus, in var., per dozen	6 0	18 0	Nasturtiums, doz.	3 0	5 0
Evergreens, in var., per dozen	6 0	24 0	Palms in var., each	2 6	21 0
Ferns, in var., doz.	4 0	18 0	Pelargoniums, per dozen	6 0	12 0
Foliage plants, various, each	2 0	10 0	— Ivy-Leafed, doz.	3 0	4 0
			— scarlet, doz.	2 0	4 0
			Solanums, per dozen	6 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Maiden Hair Fern, 12 bun.	0 9	1 0
Asters, Fr., per bun.	0 9	1 6	Mignonette, 12 bun.	1 0	4 0
— English, per bun.	2 0	4 0	Pansies, 12 bun.	1 0	2 0
Bouvardias, per bun.	0 6	0 9	Pelargoniums, 12 spr.	0 6	1 0
Carnations, 12 bun.	3 0	6 0	— scarlet, 12 spr.	0 3	0 6
— 12 blooms	1 0	3 0	Pinks (var.), 12 bun.	2 0	4 0
Chrysanth., 12 bun.	4 0	9 0	Primulas, double, 12 sprays	0 9	1 0
Chrysanth., 12 blms.	0 6	3 0	Roses, Tea, per doz.	0 6	1 6
Coreopsis, 12 bun.	1 0	3 0	— coloured, doz.	2 0	4 0
Cornflowers, 12 bun.	1 0	3 0	— red, per dozen	0 4	1 0
Dahlias, 12 bun.	3 0	6 0	— Safrano, dozen	0 6	1 0
Eucharis, per dozen	2 0	4 0	Stephanotis, 12 spr.	2 0	4 0
Gaillardias, 12 bun.	2 0	4 0	Stock, 12 bunches	3 0	6 0
Gardenias, 12 blooms	2 0	4 0	Sunflowers, various, per 12 bun.	3 0	6 0
Gladioli, 12 bun.	6 0	12 0	Sweet Sultan, 12 bun.	3 0	4 0
— 12 sprays	1 0	1 6	Sweet Peas, 12 bun	2 0	1 0
Heliotropes, 12 spr.	0 6	1 0	Tuberoses, 12 blms.	0 4	1 0
Lavender, 12 bun.	3 6	6 0			
Lilium, various, 12 blooms	1 0	5 0			
Marguerites, 12 bun.	3 0	6 0			

Orchid bloom in variety, fairly good supply.

SEEDS.

LONDON: *Sept.* 4.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that orders for Trifolium still come to hand; stocks have

now got into narrow compass. For winter Tares and Rye there is a small sale at the low rates current. Some more samples of new white and red Clover-seed are to hand, but values are not yet definitely fixed. There has been a little business doing in Trefoil and Italian Ryegrass. In Rapeseed the tendency is upwards. There is no change in Mustard. Blue Peas are still a slow trade. In birdseeds there is no quotable variation.

Obituary.

HENRY SHAW, a well-known philanthropist of St. Louis, and creator of the famous botanical gardens which bear his name, and of the School of Botany presided over by Professor Trelease, died on August 26 in that city, aged ninety years. It was through his munificence that the works of the late Dr. Engelmann were collected and issued in a separate form. Agave Shawii and other plants will serve to commemorate him.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

DISEASED POINSETTIAS.—Can any of our readers give a clue to the malady affecting the Poinsettias of "E. T.," as described in the following note:—"I would be extremely obliged to you if you could enlighten me as to the cause of Poinsettias losing their roots at this time of year. I have tried them in good loam, sand, and leaf-mould, also in good peat and loam; have grown them in an intermediate-house, also in a cool-house, in different batches; never exposed them to droughts; been most careful as to watering, using pure water, or just coloured with liquid-manure. They do well until August, but as soon as the roots touch the sides of the pot they gradually turn black, the plants lose their leaves, and the bracts are worthless. I have tried them from other places, but the results are the same. I am thinking of planting them out at this stage. An answer through your Notices to Correspondents would much oblige."

NOTICES TO CORRESPONDENTS.

ASPASIA LUNATA: *M. N.* Grow in shallow baskets in sphagnum moss, suspended from the roof, affording the plant plenty of water when growing, and shade in bright weather. It flowers in February. After growth is finished, a good period of rest is necessary, and during which scarcely any water is needed. In fact, the treatment afforded Stanhopeas suits the plant.

BOOKS: BRITISH WILD FLOWERS. *J. P. British Flora* (Bentham & Hooker), L. Reeve & Co., 5, Henrietta Street, Covent Garden, W.C. *Illustrations of the British Flora*, L. Reeve & Co.

BUGS IN BOTHY: *J. L.* Try what washing floors, walls, &c., repeatedly with carbolic acid in water will do. If it do not kill them all, it will tend to drive them away.

CALVARY CLOVER: *Trifolium.* By this term is generally understood Medicago echinus. It is so named because the fruit is covered with thorns, and suggests the "crown of thorns."

CARNATION SEEDLING: *Belmont.* A very regular flower, quite up to the florists' standard, and clove-scented. It is worth preserving.

CLUBBING IN BRASSICÆ: *J. D.* If the clubbing be due to the presence of the larva of Curculio contractus, or of Anthomyia radicum, or root-eating fly—which may readily be ascertained—dressings of soot, salt, and gas-lime, are useful deterrents. Dipping the roots of the young plants into a puddle of clay, soot, and wood-ashes, is beneficial. When clubbing is caused by a fungus it is more difficult to eradicate.

ENCEPHALARTOS: *A Gardener.* This—or more properly, Zamia horrida—is now in fruit in the Glasgow Botanic Garden, and probably has fruited elsewhere.

EUPHORBIA: *H. M.* should see his doctor. General treatment is all that is required—rest, cold applications, abstinence from stimulants, &c.

FUCHSIA: *C. A. S.* The seed-vessel is absent, the sepals are leafy, and there are sundry other changes, such as are often met with in Fuchsias.

INSECTS: *A. S.* Your Ferns are attacked by the small green caterpillars, not of a moth, but of a sawfly, with four clear wings. They will soon form their small oval cocoons, which must be carefully looked for and destroyed. The perfect insect will probably not appear till next spring. *I. O.W.*

NAMES OF PLANTS: *G. L.* 1, Saxifraga trifurcata; 7, S. hypnoides var. leptophylla; 8, S. hypnoides; 9, S. Hostii.—*Veronica.* Lythrum Salicaria.—*W. T. H.* Matricaria inodora fl.-pl.—*A. W.* 1, Sambucus nigra var. laciniata; 2, Quercus ceries; 3, Q. coccinea; 4, Cephalotaxus drupacea; 5, Retinospora obtusa.—*R. H.* 1, Cupressus Lawsoniana var.; 2, Abies Nordmanniana; 3, Thuia gigantea; 4, Abies Pinsapo; 5, Retinospora plumosa; 6, Thuia (Biota) orientalis.—*W. C.* The common Mushroom.—*J. H. E.* Cratægus crus galli, if it has thorns. It is impossible to name these plants from one or two leaves only.—*S. W. R.* 1, 3, and 4 are varieties of Spiræa salicifolia; 2 is S. Nobleana.—*E. D. L.* 1, We do not recognise without flowers; 2, Clematis viticella; 3, Aster simplex; 4, Coronilla varia; 5, Pellionia Davaneana.—*F.* 1, Campanula pulla; 2, Sedum hybridum.—*W. W.* 1, Insufficient without fruit; 2, Asplenium marinum; 3, Asplenium fontanum, var. laxum; 4, Lonicera xylosteum; 5, Specimen insufficient.—*W. M.* The Orchid is Oncidium incurvum, the other Hymenocallis senegambica.—*G. Spencer.* 1, Erica species, of the section pubescens—specimen insufficient; 2, Pholidota articulata.—*Camjee.* Both varieties of Dendrobium chrysanthum.—*J. E. J.* Cyclamen europæum.

NICOTIANA AFFINIS: *G. W. R.* We have no experience. Why not dry some leaves for yourself, and try the effect?

ORANGE ANALYSES, &c.: *W. H. D.* You will find answers to all your questions in *Subtropical Cultivation and Climates*, by R. C. Haldane (London: Wm. Blackwood & Sons).

STRAWBERRY: *J. S.* We have no record of the biggest berry ever shown in London.

TOMATO HAM GREEN FAVOURITE: *F. P.* This is one of the best, if not the best, of all Tomatos—solid, well-flavoured, nice shape, and very prolific.

WORMS ON BOWLING GREEN. *H. E.* Water with Chinese Worm Soap, sold by some florists and nurserymen; or with lime-water.

CATALOGUES RECEIVED.

J. GILBERT, Dyke, Bourne, Lincolnshire—Bulbs and Flower Roots.

THOMAS KENNEDY & Co., 106 and 108, High Street, Dumfries, N.B.—Dutch Flower Roots.

WILLIAM ROSSITER, Paignton—Dutch Bulbs.

CHARLES TURNER, Royal Nurseries, Slough—Bulbous Roots; also Carnations.

BARR & SON, King Street, Covent Garden, London, W.C.—Daffodils, Irises, &c.

W. TAIT & Co., 119 and 120, Capel Street, Dublin—Dutch Bulbs, &c.

ROBERT VEITCH & SONS, 54, High Street, Exeter—Dutch Bulbs, &c.

EDMONDSON BROS., 10, Dame Street, Dublin—Bulbs and Roots.

THOMAS IMRIE & SONS, 137, High Street, Ayr, N.B.—Dutch Bulbs.

W. N. CRAIG, Kendal—Bulbous Roots, &c.

CLARK BROS. & Co., 65, Scotch Street, Carlisle—Spring Flowering Roots.

J. PERKINS & SON, 52, Market Square, Northampton—Dutch Flower Roots.

J. E. BARNES, 9, Exchange Street, Norwich—Bulbous Roots, &c.

T. B. THOMSON, 20, High Street, Birmingham, and Spark Hill—Bulbs and Flower Roots, Roses, Trees, &c.

WM. GREEN, 44, Vicar Lane, Leeds—Dutch and other Bulbs, and Tuberous Plants, &c.

COMMUNICATIONS RECEIVED.—P. E. N.—R. A. R.—W. B.—Harrison Weir.—R. D.—W. S.—J. B.—W. W.—A. D.—W. E.—W. S.—N. E. B.—A. J.—W. D.—J. P.—P. L. S.—D. T. F.—J. D.—W. R.—R. C.—C. W. D.—H. H. D.—W. T.—J. P.—W. T. Rev.—W. S.—H. T.—T. H. S.—F. W. B. (your wishes shall be complied with.—J. A.—Broom.—C. J. M. (answer by post).—R. G.—C. A. S.—W. G. Holmes.—W. S. (next week).—F. G. B.

☞ *Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect in all cases to obtain an answer to their enquiries in the current week.*

To the Trade.

F. C. MALLER begs to offer 10,000 MISS JOLIFFE CARNATIONS, extra strong stuff; also 7000 well berried bushy SOLANUMS. Price per 100 or 1000, on application to Burr Farm Nursery, Bexley Heath.

To the Trade Only.

WILLIAM HOWARD, Southgate, N., begs to offer CALLA ÆTHIOPICA, good strong flowering imported tubers from the open ground, at 24s. per 100, £20 per 1000; BOUVARDIA ALFRED NEWNES, from open ground, 80s. per 100; ASPIDISTRAS, in 48-pots, 150s. per 100, and upwards, net cash.

New Early Strawberry.

"JOHN RUSKIN."—We are now executing orders in strict rotation, for this new, very early, fine-flavoured heavy cropping Strawberry, of which we have the entire stock. Plants, true to name, can be had only direct from us.

LITTLE AND BALLANTYNE. Nurserymen and Seedsmen to the Queen, Carlisle.

O. BURVENICH DE WINNE, Gentbrugge, Ghent, Belgium. Ask for my Prices and Samples before you buy AZALEA INDICA, A. MOLLIS, and RHODODENDRONS. DRACÆNA INDIVISA, Greenhouse FERNS and PALMS, a specialty. 7500 very good AZALEA INDICA, well budded, well mixed, 25 per cent. Deutsch Perle, 25 per cent. Double Whites, 50 per cent. other sorts; £3, £4, £5, £6 per 100.

O. BURVENICH DE WINNE, Gentbrugge, Ghent, Belgium.

FOR SALE, 60 plants of AZALEA INDICA and FIELDER'S WHITE. Healthy plants, well set for bloom. Also a few hundreds MAIDENHAIR FERNS, in 60's and thumbs.

Messrs. ROBERTS AND MENDHAM, Cambridge Nursery, Wisteria Road, Lewisham, S.E.

ROMAN HYACINTHS.—The Subscribers offer a splendid Shipment of Early Single White Roman Hyacinths of extra large size.

Special select Bulb offer, post-free on application.

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SPECIMEN ORCHIDS, ANTHURIUMS, EUCHARIS, PANDANI, CROTONS, AZALEAS, LAPAGERIAS, FERNS, BAMBOOS, CAMELLIAS, Pot RHODODENDRONS (new type), &c., for immediate removal, from the renowned gardens of ED. SALT, Esq., J.P., for alterations. Apply for Priced Descriptive LIST.

WOOD'S PLANT CLUB, Kirkstall, Leeds.

ROMAN HYACINTHS, NARCISSUS, LILIUMS, TUBEROSES, and many other FRENCH BULBS, grown and offered by LOUIS BREMOND, fils, Ollioules, France.

WHOLESALE LIST on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, London, W.C.

LILIES OF THE VALLEY!
English-grown!

The best for early forcing, finest large flowers, and superior in every respect to German crowns. Price per 1000, 10,000, to 100,000 on application.

T. JANNOCH, Lily of the Valley Grower by Special Appointment to H.R.H. The Prince of Wales, Dersingham, King's Lynn, Norfolk.

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A. F. BARRON, turned out of pots, 25s. per 100.
" Runners ... ... 20s. per 100.
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Sixteen varieties grown. Warranted first-class plants.
R. GILBERT, High Park, Stamford.

"GEMS"—"GEMS"—"GEMS" of Choice Stove Plants.

OXERA PULCHELLA—dense clusters, 8 to 10 inches across, of pure white, funnel-shaped flowers, about 2 inches long and 1 inch across. Flowers in winter very lasting, graceful and beautiful. 5s.

SCHUBERTIA GRANDIFLORA—flowers white with delightful, almond-like fragrance, produced in large trusses, similar to Stephanotis. Excellent for cutting. 2s. 6d. and 3s. 6d.

STEPHANOTIS FLORIBUNDA—the finest variety in cultivation, and freest bloomer, flowering at every joint, and blooms in a lower temperature than any other variety we know. 1s., 1s. 6d., 2s. 6d., 3s. 6d., 5s.; and fine specimens, 21s., 31s. 6d., and 40s. each.

STIGMAPHYLLUM CILIATUM (Golden Vine)—flowers rich orange, similar to the lovely Orchid Oncidium flexuosum. Very distinct. 2s. 6d. each.

TOXICOPHLÆA SPECTABILIS (Winter Sweet)—large dense sprays of white flowers, sweetly perfumed. Beautiful winter-flowering plant. 2s. 6d. and 3s. 6d. each.

GLONERA JASMINIFLORA—one of the most beautiful white-flowering plants for either cutting or decoration. Blooms in the winter or early spring, and worthy of a place in the most select collection. 2s. 6d. and 3s. 6d.

CATALOGUES of these, and all you want for a Garden free, by post from

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

PRIMULAS, Double White, in middle 60-pots, ready for potting into 48's, at 25s. per 100.
JAMES OVER, Florist, Mitcham, S.W.

STRAWBERRIES.

LAXTON'S "NOBLE," small pots, 20s. per 100, 3s. per dozen; runners, 12s. per 100.

PRESIDENT, DU THURY, PAXTON, } well rooted runners, 10s. per 1000. in small pots, 12s. per 100, 90s. per 1000. out small pots, 10s. per 100, 75s. per 1000.

PRIMROSE, "Hardy's Grand Hybrid Novelties," very large flowers, about 30 splendid colours, pure white to dark crimson, allowed by competent judges to be the very best and handsomest grown, 5s. per 100, 45s. per 1000.

POLYANTHUS, Hardy's finest selected, gold-laced, show flowers, 5s. per 100, 45s per 1000.

CASH, package free; extra plants sent for carriage.
H. I. HARDY, F.R.H.S., Stour Valley Nurseries, Bures, Suffolk.

PÆONY ARBOREA.—PÆONY SINENSIS.
Great Specialty.
The unique and very best collection in the world.
PÆONIA ARBOREA.
150 of the finest good old varieties.
36 Chinese varieties, introduced direct from China.
50 New and very rare sorts.
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3 Japanese vars., sent out for the first time this present season.
Disposable in plants, 1, 2, and 3 years, strong plants, 4 to 6 yrs.
Specimen plants for Show, from 6 to 15 years old.
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250 varieties of the finest good old sorts.
27 new and rare varieties.
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36 varieties of officinalis and paradonales sorts.
Best time to send Pæonies is September or October, but may be planted until March.
Special collection for Amateurs. Special descriptive Catalogue and prices, printed in English, and sent on demand.
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White ROMAN HYACINTHS, first quality bulbs, carefully selected, 2s. 6d. per dozen; 18s. 6d. per 100.
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LILIUM HARRISII (Bermuda Easter Lily).—Our direct importation from Bermuda of this charming pure white Lily enables us to offer grand bulbs, in the best possible condition, at extraordinarily low prices. Fine selected, 7s. per dozen; 50s. per 100. Extra fine selected, 7 to 9 inches in circumference, 10s. per dozen; 75s. per 100. Potted now, will be in bloom at Christmas and the New Year.
Descriptive CATALOGUE of Dutch and other Bulbs, post-free on application.
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New Early-blooming Hybrid Rhododendrons,
Raised by
ISAAC DAVIES AND SON, and now offered for the first time:—
RHODODENDRON QUEEN OF DWARFS, raised from R. multiflorum, crossed with the best large-flowered hardy white varieties, is of bushy habit, and very free-blooming, bearing large, well-expanded, snow-white flowers, of great substance, and very lasting. Awarded a First-class Certificate by the Royal Botanical Society of Manchester on March 20, 1888. Three plants were planted in the open ground last autumn, and have stood the winter uninjured.
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Prices of plants of any of the above kinds, 3s., 6s., and 10s. 6d. each. All except the smallest size, are well set with flower-buds.
Usual discount to the Trade.
We can also supply the best-named varieties of Hardy RHODODENDRONS, Seedling AZALEA MOLLIS, &c., by thousands, at very moderate prices. The season has been unusually favourable, and they are densely covered with flower-buds. Ormskirk, Lancashire.

SPECIAL OFFER of FERNS for CASH.—Extra strong, in thumbs, for immediate Potting, in the following varieties:—Pteris cretica, tremula, cretica cristata, alba lineata, astata, serrulata cristata compacta, A. cuneatum, and an extra fine lot of Lomaria gibba and Polypodium aureum. Also a fine lot, in 48's, Pteris cretica, cretica major, cretica cristata, serrulata cristata compacta, A. cuneatum, Polypodium, Dicksonia antarctica, Grevillia robusta and cyperus.
Price for thumbs per 100 or 1000 and 48's per 100 on application.
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BULBS—BULBS—BULBS.—Our early importations are now to hand in first-rate condition. Roman Hyacinths, splendid, 14s. to 16s. per 100. Polyanthus Narcissus, Paper White, 5s. per 100; Early Roman, 6s. per 100; Grand Primo, 6s. 6d. per 100. Garden Hyacinths, 10s. per 100; Pot kinds, 2s. 6d. per dozen; first size, finest quality for show, 4s. to 6s. per dozen. Garden Narcissus, a specialty, most of the varieties Home-grown. Iris hispanica, this lovely gem, 1s. 6d. per 100. CATALOGUES free.
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80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto, in large pots, 25s. per 100. Descriptive LIST free.
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HYACINTHS, TULIPS, CROCUSES, SPIRÆA, LILY OF THE VALLEY—all *strong* clumps, and GLADIOLUS Brenchleyensis and Gandavensis, first size bulbs—all very low prices.
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None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
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Protection of Fruit Trees from the Winter Moth.
NOW IS THE TIME TO APPLY
PROTECTIVE COMPOSITION,
AS RECOMMENDED BY MISS ORMEROD.
Particulars on application.
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Quality, THE BEST in the Market. (All sacks included.)
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CHOICE PLANTS, FERNS, HEATHS, AZALEAS, &c.
EPPS & CO. are now prepared to offer PEAT, as above, of first-class quality, at lowest prices. Prices on application. Dépôt for HORTICULTURAL SUNDRIES, LOAM, SAND, LEAF-MOULD, SPHAGNUM, COCOA-FIBRE REFUSE, CHARCOAL, and ARTIFICIAL MANURES.
PEAT MOSS LITTER.
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For GREENHOUSE or GARDEN.

Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
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And in 6d. and 1s. packets.
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Wasps and Flies.
Protect your Fruit from these pests by using
DAVIS'S WASP DESTROYER, Post-free, 1s. 9d. and 2s. 9d. per bottle, with full directions—a certain remedy.
BEGONIAS (a Specialty) are now in full bloom, and will continue until the frost. A sight once seen never to be forgotten.
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BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

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PRICE in Iron 6/6, or in Copper, 21/-



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BONES!—BONES!!—BONES!!!

Crushed Bones in all sizes for Vine Borders, Lawns, Potting, Grass Lands, &c. Also BONE MEAL for Poultry Feeding, GARDEN GUANO, DISSOLVED BONES, Special MANURES and FERTILIZERS for all purposes.

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THE "PERFECT" WEED KILLER



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for permanently destroying vegetation on Walks, Carriage Drives, Ash Tennis Courts, Stonework grown green, &c.

Used at Kew Gardens, Royal Horticultural Gardens, &c., &c.

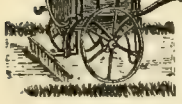
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to all using WEED KILLER bearing our Trade Mark, without which none is genuine. *Refuse Imitations.*

PRICE—Gallon 2/, 5 gal. 1/9, 10 gal. 1/6, 40 gal. 1/4 per gal.

SPECIAL QUOTATIONS FOR QUANTITIES.

Carriage paid 5 gals. and upwards. Trial sample post free.



DISTRIBUTOR for "Perfect" Weed Killer.

Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 ins. wide. Price £4 net on rail Glasgow.

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A CURE AT LAST FOR THIS DREADFUL PEST.

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Prices:—¼ pint, 1s. 6d.; 1 pint, 2s. 6d.; 1 quart, 4s. 6d.; ½ gallon, 7s. 6d.; 1 gallon, 12s. 6d.

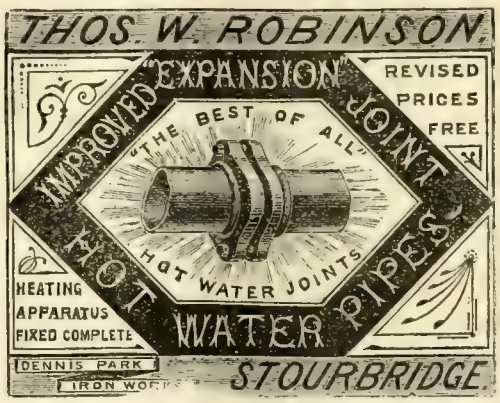
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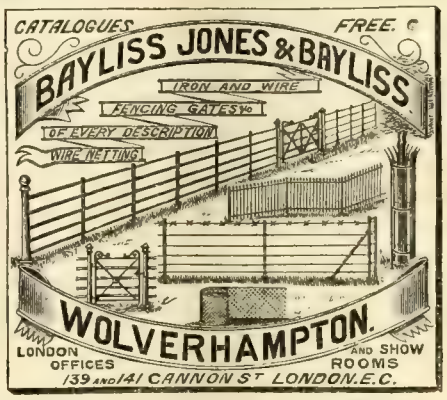
WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

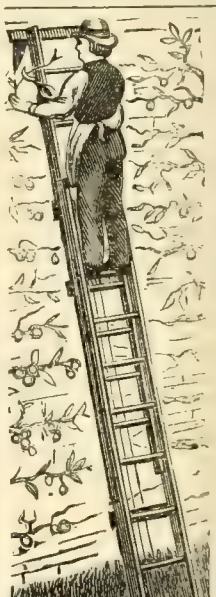
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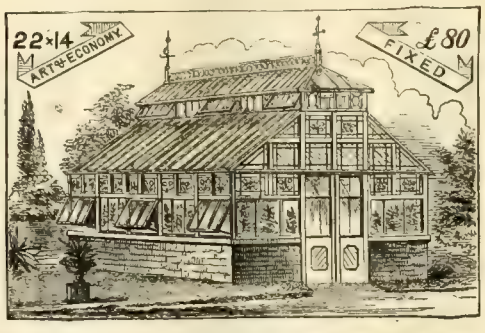
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14×12	20×15
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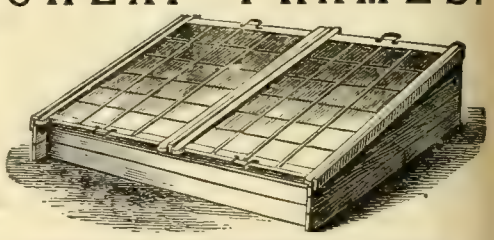
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R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

Prices delivered free to any station in England.

		£	s.	d.
1-light frame, 4 ft. by 6 ft.	Carriage and Packing Cases FREE.	2	0	0
2-light frame, 8 ft. by 6 ft.		3	2	6
3-light frame, 12 ft. by 6 ft.		4	15	0
6-light frame, 24 ft. by 6 ft.		8	10	0

Larger sizes at proportionate prices.

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Hothouse Builders and Engineers, Royal Horticultural Works,

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and keep a fixed temperature under glass, by using "FRIGI DOMO," made of prepared hair and wool: a perfect non-conductor of cold.

PROTECT YOUR PLANTS

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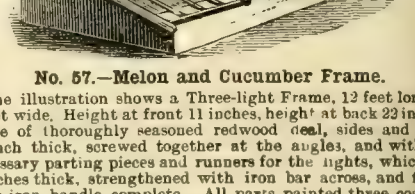
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			£	s.	d.
1-Light Frame	... 4 ft. by 6 ft.	CASH PRICES	2	0	0
2 " "	... 8 ft. by 6 ft.		3	0	0
3 " "	... 12 ft. by 6 ft.	CARRIAGE AND PACKING FREE.	4	5	0
4 " "	... 16 ft. by 6 ft.		5	10	0
5 " "	... 20 ft. by 6 ft.		6	15	0
6 " "	... 24 ft. by 6 ft.		8	0	0

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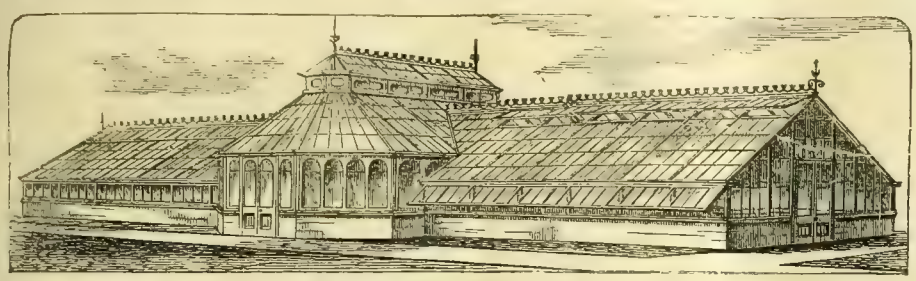


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Five 1st Prize Medals recently awarded in open competition.



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Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

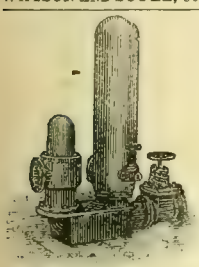
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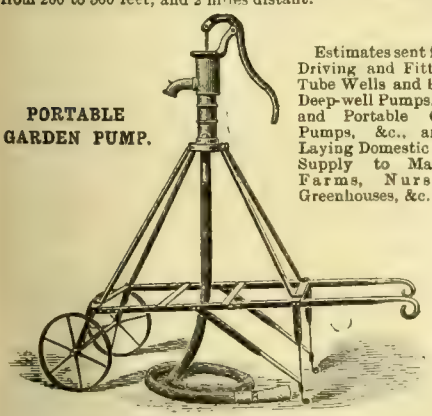
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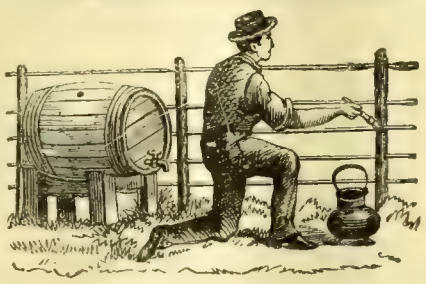
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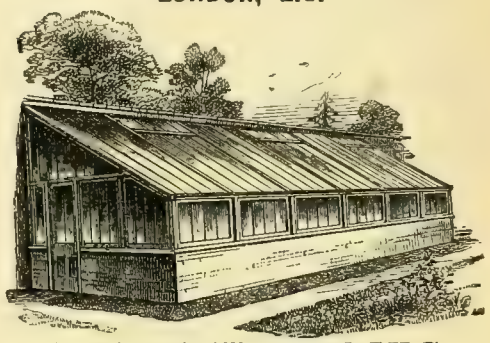
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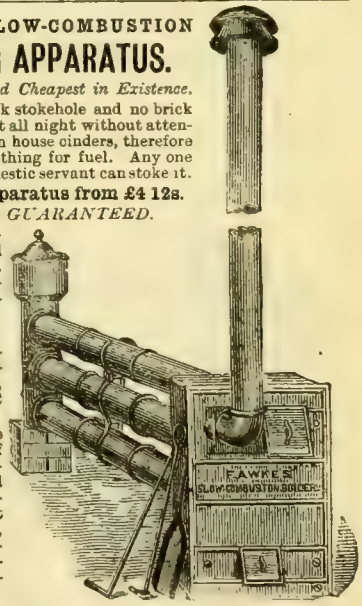
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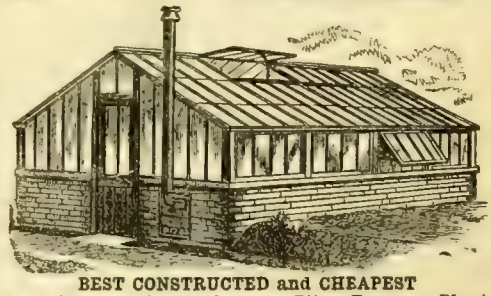
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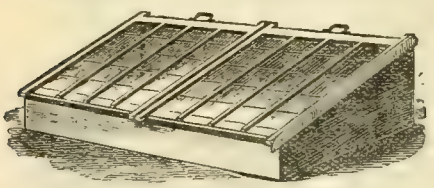
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1	Light Frame,	4 ft.	by 6 ft.	Cash Prices, Carriage and Packing FREE.	£2 0 0
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GARDENING APPOINTMENTS.

MR. F. BOWLES, for the last eight years Gardener to the Hon. R. CAPELL, Watford, has been appointed as Head Gardener to the Right Hon. Lord LAWRENCE, Chetwode Manor, Buckingham.

Mr. F. THIRLBY, lately Gardener to the Hon. E. ASHLEY, Broadlands, Romsey, Hampshire, has been appointed Gardener to Earl FITZWILLIAM, Wentworth, Rotherham.

Mr. GEORGE WILSON, late Gardener at Aspley Hall, Notts, has been engaged as Gardener to JAMES RECKITT, Esq., Swanland Manor, Brough, East Yorkshire.

WANTED, a HEAD WORKING GARDENER, thoroughly up in Vines, Peaches, Stove Plants, &c., Flowers, and Kitchen Garden.—State age, experience, and wages required.—A. NICHOLSON, Highfield Hall, Leek, Staffordshire.

GARDENER WANTED IMMEDIATELY, for very Early Cucumbers, Tomatos, and Strawberries. None but competent Large Growers need apply. Would like Henry Jones to write, by letter only.—GREY, Point Pleasant Nursery, Wandsworth, S.W.

WANTED, a SINGLE-HANDED GARDENER, in Gentleman's family. No Glasshouses. Age not over 35. Married. Cottage found. Would be required to do some work in house and occasionally wait at table. Must have first-class references.—Apply, stating wages, and all particulars, to LAWS AND SON, Nurseries, Beccles.

Decorator.

WANTED, for a Large Private Establishment, a young British GARDENER, with good taste for Table and House Decoration. One who has gained some experience in France preferred; situation permanent.—State wages, experience, and all particulars, to R. F. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a GROWER of Plants and Cut Flowers. Must be quick and energetic, and well up in Bouvardia and Fern.—Age and wages, with references, to X., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, a married Man, as WORKING FOREMAN, to take charge of Outside Department, where Roses, Bulbs, and Herbaceous Plants are grown in quantity for Cut Flowers. Only thoroughly practical men need apply. Wages commencing at 25*s.* per week, with cottage.—State experience and where last employed, to TURNER, BROS., Garston, Liverpool.

WANTED, for a Private Establishment, a young Man, with experience, as ROSE GROWER. Must understand the Management of Roses, both out-of-doors and under glass.—WM. PAUL AND SON, Waltham Cross.

WANTED, a strong, active, young MAN (Single), for Outdoor and Jobbing Gardening, and willing to make himself generally useful. Good character. State age and wages.—W. RATTRAY, Ash Vale Nursery, near Aldershot.

WANTED, a HANDY-MAN, for country, to Work Small Garden and Nursery, &c.; accustomed to Horses.—References, wages, to ROBT. STARK, Chagford, Devon.

WANTED, a strong, active, and industrious Youth, for Inside and Out. Wages, 12*s.* per week.—Apply by letter to GEO. STRUDWICK, The Gardens, Newlands, Sittingbourne.

WANTED, an ASSISTANT, for the Seed, Bulb, Plant, and Cut Flower Department. Must have a practical knowledge of Wreath and Bouquet making.—Apply, H. A., Messrs. HURST AND SON, Houndsditch, London, E.C., stating wages required.

WANTED, a TRAVELLER, for the Wholesale Nursery Trade. None need apply unless thoroughly experienced in the Value of and Nomenclature of Nursery Stock, both Indoors and Out-of-doors; also should be well-known on the road.—Reply, stating salary, experience, &c., to THOS. CRIPPS AND SON, Tunbridge Wells Nurseries, Kent.

Shorthand Clerk.

A VACANCY will shortly occur in the Offices of Messrs. LITTLE AND BALLANTYNE, Carlisle, for a SHORTHAND CLERK, who has been accustomed to the Nursery and Seed Trade.—Apply, by letter, giving full particulars as to age, experience, references, salary required, &c.

MESSRS. W. CUTBUSH AND SON REQUIRE a HANDY MAN accustomed to general Painting, Carpentering, Hot-water Work, and other Such Work in a Nursery. — Apply, in writing, stating where previously employed, and wages required, Highgate Nurseries, London, N.

WANTED, a young Lady, as ASSISTANT, in Cut Flower Department. Must be well up in Bouquet and Wreath-making, &c. — State experience and wages required, to PERKINS AND SONS, Warwick Road Nursery, Coventry.

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JOHN LAING AND SONS can at present recommend with every confidence several energetic and practical MEN of tested ability and first-rate character. Ladies and Gentlemen in want of GARDENERS and BAILIFFS, and HEAD GARDENERS for first-rate Establishments or Single-handed Situations, can be suited and have full particulars by applying at Stanstead Park and Rutland Park Nurseries, Forest Hill, London, S.E.

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GARDENER (HEAD).—Age 40, married, no family; thoroughly experienced in all branches. Good character.—G. M., Mossfields, Whitchurch, Salop.

GARDENER (HEAD).—Possesses a thorough Nursery Training, and can produce Flowers, Vegetables, and Fruit in any quantity.—O. P. Q., 41, Wellington Street, Strand, W.C.

GARDENER (HEAD).—Age 44, married, one child; thirty years' practical experience in Nobleman's Gardens. Good references.—A. SUMMERSELL, Wrotham Park, Barnet.

GARDENER (HEAD), where one or two are kept; age 26.—Mr. EDMUND HANBURY, of Poles, Ware, Herts, wishes to recommend a young man, who for the past four years has acted as Foreman in his Garden.

GARDENER (HEAD); age 35, married no family.—A GENTLEMAN who is giving up, can highly recommend his Head Gardener to any Lady or Gentleman requiring a good practical man, good character, &c.—Please apply to W. W., Sudbury Hill House, Harrow.

GARDENER (HEAD).—J. P. LEADBETTER, Gardener to A. Wilson, Esq., Tranby Croft, Hull, begs to recommend his Foreman, J. Sheddick, as a thoroughly efficient and steady man. Good experience in all branches. Excellent references.

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GARDENER (HEAD WORKING).—Age 30, married, no children; sixteen years' experience in first-class Gardens. Excellent references as to character and abilities.—A. T., Springfield Cottages, Dorman's Land, East Grinstead, Sussex.

GARDENER (HEAD WORKING).—W. STYLES can be highly recommended to any Lady or Gentleman as a thoroughly practical and trustworthy man. Twelve years in present situation.—Address, The Gardens, Brampton Bryan Hall, Herefordshire.

GARDENER (HEAD WORKING).—A LADY wishes to recommend her late Head Gardener to any one requiring the services of a trustworthy and reliable man. Sixteen years' experience in all branches.—J. H., Mr. Bowden, Forder, near Saltash, Cornwall.

GARDENER (HEAD WORKING). — Age 33, two children; thoroughly practical, energetic, and trustworthy. Excellent recommendations from previous employers. Eight years as Head.—CUBA, Mrs. Wessons, Paper Office, Baker Street, Enfield.

GARDENER (HEAD WORKING), where more are kept.—Age 35; fifteen years' experience in all branches of Gardening. A First Prize for Grape Growing. Four years in last place.—For character, apply to Mr. TOOTH, 38, St. Aubyn's, West Brighton; left at N. Austin Post Office, Beconfield Road, Brighton.

GARDENER (HEAD WORKING), where one or more are kept; married, one daughter (age 14).—A GENTLEMAN can thoroughly recommend a man as above. Experienced in Stove and Greenhouse Plants, Vines, &c.; also Land and Stock if required.—G. C., 7, Church Terrace, Deadworth, Windsor.

GARDENER (HEAD WORKING), where two or three are kept —Age 32, married; strongly recommended by present and previous employers as thoroughly competent in all branches. Has been two years in present situation. Leaving through the place being let and reducing of hands. Mr. BRADLEY can highly recommend as a thorough industrious and neat Gardener, G. Davis, Calcot Gardens, Reading.

GARDENER (HEAD WORKING, or good SINGLE-HANDED).—Age 33, married, three children; thoroughly understands Vines, Melons, Cucumbers, Peaches, Tomatos; Stove, Greenhouse, Flower, and Kitchen Garden. Three years' character.—W. H., Ingersell House, Willesden Green, N.W.

GARDENER (HEAD WORKING). — Age 47, married; abstainer. Twenty years' good practical experience. Forcing of all kinds, Fruits, Flowers, and Vegetables; good Kitchen and Flower Gardener; can also take charge of Land and Stock. Fifteen years' good characters, and highly recommended.—F. H., 27, Kingsley Road, Maidstone, Kent.

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GARDENER (HEAD, SINGLE-HANDED), or where more are kept. Fifteen years' experience in all branches. A 1st prize for Grapes. Four years last place. - For character apply, Mr. TOOTH, 38, St. Aubyn's, West Brighton, Sussex.

GARDENER (HEAD or good SINGLE-HANDED).—Age 38, married, two children; thoroughly good all-round man; hardworking. Three years' character.—GARDENER, 16, Salisbury Road, Manor Park.

GARDENER (SINGLE-HANDED), or would take any place of trust.—Age 43, married, no children; good references.—Address, first instance, F. B., Chilton Mill, Hungerford.

GARDENER (SECOND), or SINGLE-HANDED would suit.—Age 24; good experience and reference.—G. W. S., 48, Boove Street, Lee, London.

GARDENERS (SECOND or SINGLE-HANDED). —Two young men, ages 24 and 26. Seven years' experience; four years' good character.—J. MAY, The Gardens, Westfield, South Hayling.

GARDENER (SECOND, or SINGLE-HANDED).—Single; total abstainer. Ten and a half years' experience. Good character.—J. WELLS, South Farm, Worthing, Sussex.

GARDENER (SECOND), where three or four are kept.—Age 24, single; ten and a half years' experience. Good character.—G. H., 31, Cowper Street, West Brighton, Sussex.

GARDENER (SECOND); age 26, single.—WALTER WILKINSON, Esq., Ashley House, Wood Lane, Handsworth, Birmingham, can with confidence recommend Alfred Busby, to any Gentleman or Gardener requiring a steady industrious young man.—BUSBY, Ashley House.

GARDENER (SECOND, or good THIRD), in Large Establishment.—Age 23; seven years' experience. Good references.—B. T., The Gardens, Cave Castle, E. Yorks.

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GARDENER (UNDER), Inside or Out; age 23. —A. HAWKES, Bishopshalt, Hillingdon, would be pleased to recommend a young man as above. Honest and obliging, and neat in his work. Leaving through death. Address as above.

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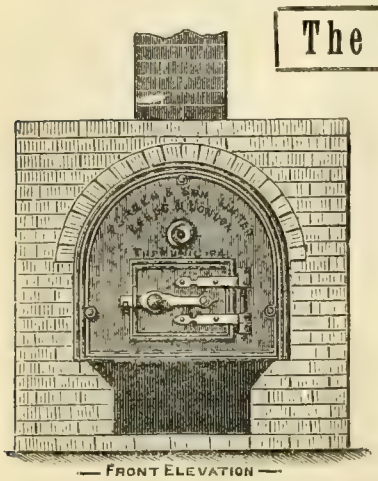
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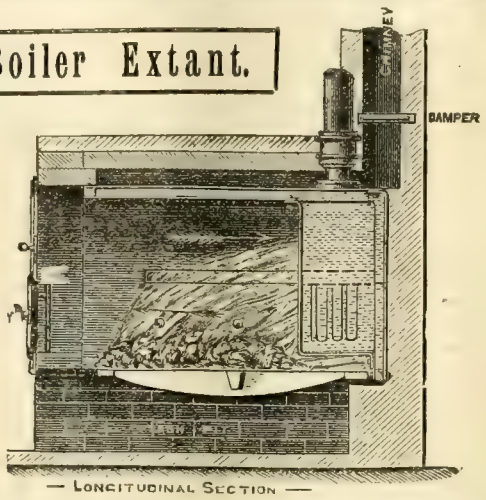
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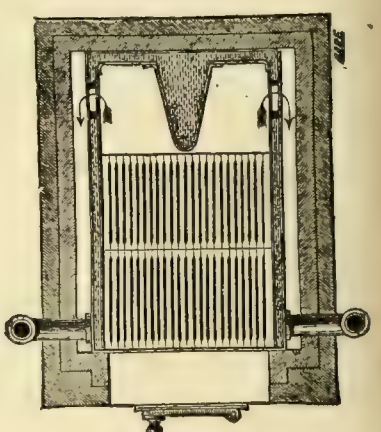
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, September 7, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2542.

No. 142.—Vol. VI. {Third Series.} SATURDAY, SEPTEMBER 14, 1889. [Regt. as a Newspaper. {PRICE 3d. Post-Free, 3½d.

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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

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MESSRS. PROTHEROE AND MORRIS are instructed by Mr. H. B. May, to SELL by AUCTION, on the Premises, Dyson's Lane Nursery, Upper Edmonton, on MONDAY NEXT, September 16, at 11 for 12 o'Clock punctually, in consequence of the large number of Lots, about 45,000 STOVE and GREENHOUSE PLANTS, remarkably well-grown and in the best possible condition, including:—

- 20,000 Ferns, all of the most useful market sorts, and many novelties.
- 10,000 Tree Carnations, including a fine lot of Mrs. Reynolds Hole, Mdlle. Carle, A. Alegatierre, Andalusia, Old Crimson Clove, &c.
- Tea Roses in Pots, Maréchal Niel, Gloire de Dijon, and W. A. Richardson.
- 10,000 Bouvardias, including President Cleveland, Mrs. Robert Green (new); Jasminoides, Candidissima.
- 6000 Genistas, fine bushy stuff.

Crotons, Dracænas, Eucharis amazonica, Aralias, Statices, Euphorbia jacquiniflora, &c., Ampelopsis Veitchii, Clematis, and Ivies, Cyclamen, Double White Primulas, English-grown Camellias, well set with buds; Azaleas, forward in bud, for early forcing; Ficus elastica, Aralia Sieboldii, small Heaths, Genistas, Bouvardias, &c., for growing on, and a great variety of other useful plants.

May be viewed any day previous to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

Lee, Kent, S.E.

GREAT ANNUAL TRADE SALE, to commence punctually at 11 o'Clock, there being upwards of 1200 lots to Sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons, to SELL by AUCTION, on the Premises, the Burnt Ash Lane Nurseries, Lee, Kent, S.E., adjoining the Lee Railway Station, S.E.R., on TUESDAY NEXT, September 17, at 11 o'Clock punctually, without reserve, a large quantity of remarkably well-grown WINTER BLOOMING HEATHS, and other STOVE and GREENHOUSE PLANTS, consisting of:—

- 20,000 Erica hyemalis
- 5,000 ,, gracilis
- 2,000 ,, Cavendishii
- 1,000 ,, coccinea minor
- 600 ,, caffra
- 600 ,, melanthera, all well set with bloom-buds
- 2,500 Grevillea robusta
- 1,000 Ampelopsis Veitchii
- 34 Camellias, specimens
- 600 Cyclamen
- 1,500 Epacris
- 800 Boronia megastigma
- 5,000 Genistas
- 3,000 Solanum capsicastrum, well berried
- 2,500 Bouvardias
- 1,000 Adiantum cuneatum
- 500 Lomaria gibba
- 800 Tea Roses (in pots)
- 500 Aralia Sieboldii

with a large quantity of young Erica hyemalis, E. Cavendishii, E. gracilis, and others; also Genistas, all in 60-pots for growing on.

The Stock is now on view. Catalogues may be had on the Premises; at the Seed Warehouse, 61, High Street, Lewisham, S.E.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Wednesday Next.

1000 AZALEA INDICA, from Belgium, including 500 Deutsche Perle.
100 CAMELLIAS.
200 AZALEA MOLLIS, and 400 lots of DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above at their Central Auction Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, September 18, at half-past 11 o'Clock precisely.

On view Morning of Sale, and Catalogues had.

Lea Bridge Road, E.

ANNUAL UNRESERVED TRADE SALE of FINE WINTER-FLOWERING HEATHS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. John Fraser to SELL by AUCTION, on the Premises, the Lea Bridge Nurseries, Lea Bridge Road, Leyton, E. (close to the Hoe Street Station, Great Eastern Railway), on WEDNESDAY NEXT, September 18, at 11 o'Clock precisely, in consequence of the large number of lots, a large quantity of WINTER-FLOWERING and other PLANTS, including:—

- 12,000 Erica hyemalis
- 3,000 Tree Carnations
- 4,000 Erica gracilis
- 6,000 Genista fragrans
- 6,000 Ampelopsis Veitchii, 4 feet
- 2,000 Epacris
- 2,000 Lapageria rosea superba
- 6,000 Cyclamen persicum (Fraser's superb strain)
- 2,000 Passiflora Constance Elliot and cœrulea
- 1,000 Variegated and other Ivies
- 2,000 Maréchal Niel, Gloire de Dijon, William Allen Richardson, and other Roses, 8 to 10 feet
- 6,000 Clematis Jackmanii, and other best-named sorts
- 1,000 Deutzia gracilis, established in pots
- 6,000 Bouvardias, including a lot of "President Cleveland"
- 5,000 Solanums, beautifully berried
- 1,000 Clematis indivisa lobata

and a great number of Araucaria excelsa, Erica perspicua erecta, Erica caffra, large-flowering white Jasmines, Honeysuckles, Stephanotis floribunda, Ivy-leaved Geraniums, Boronia megastigma and heterophylla, Escallonia macrantha, Gum Cistus, Japanese Honeysuckles, Ceanothus, and other plants. Also a large quantity of young Heaths and Genistas, for potting on.

The whole of the Stock is in the best condition, and ready for immediate sale.

HOE STREET STATION, on the Great Eastern Railway, is within a short distance of the Nursery. Trains from Liverpool Street every half-hour.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C., and Leytonstone, E.

Enfield Highway, N.

The Brimsdown Nursery, adjoining Brimsdown Station, G. E. R.

TWENTY-FIRST ANNUAL TRADE SALE of STOVE and GREENHOUSE PLANTS. The Sale to commence punctually at 11 o'Clock, there being upwards of 1200 Lots to Sell in one day.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. Maller, to SELL by AUCTION, on the Premises, The Brimsdown Nursery, Green Street, Enfield Highway, N., adjoining the Brimsdown Station, G. E. R., on THURSDAY NEXT, September 19, at half-past 10 for 11 o'Clock punctually, in consequence of the large number of Lots, large quantities of remarkably well-grown STOVE and GREENHOUSE PLANTS, comprising:—

- 15,000 Winter-blooming Heaths, including hyemalis, gracilis, caffra, Wilmorea, ventricosas in variety, &c.
- 5,000 Solanums, exceptionally well-grown and berried
- 5,000 Ferns, Adiantums, Lomarias, Pteris, &c.
- 3,000 Tree and other Carnations, leading varieties, including 200 "Germania"
- 1,000 Epacris to name
- 5,000 Bouvardias, including President Cleveland, Vulcan, and other best varieties
- 1,000 Grevillea robusta
- 5,000 Genistas
- 1,000 double white Primulas
- 1,000 Stove and Greenhouse Climbers, including Allamandas, Bougainvilleas, Stephanotis, Tacsonias, &c.
- Dipladenias of sorts
- 1,000 Passiflora
- 2,000 Ampelopsis Veitchii
- 500 Crotons, beautifully coloured
- 150 Chrysanthemum "Mrs. Alphæus Hardy," strong plants in 48's, Palms, Ficus, Camellias, and Azaleas for cutting

Many thousands of small Ericas, Genistas, Ferns, &c.

Large quantities of Acacias, Gardenias, Euphorbia jacquiniflora, Geraniums, Chrysanthemums, Poinsettias, Euonymus ovatus aureus, &c., suitable for the Trade and other extensive Buyers.

May be viewed. Catalogues had on the Premises, and also at the Brunswick Nursery, Tottenham; and of the Auctioneers, 67 and 68, Cheapside, E.C., and Leytonstone, E.

N.B.—The whole of the Stock is in first-rate condition, the Ericas being especially well set for flower, and the Solanums unusually well berried.

Friday Next, September 20.

SPECIAL SALE of ESTABLISHED and IMPORTED ORCHIDS. Important to the Trade.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Sander & Co. to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, September 20, at half-past 12 o'Clock, a large quantity of IMPORTED and ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

The First Portion of the Entire Stock of Established

ORCHIDS, by order of Mr. J. E. Bonny, who is relinquishing the business, and disposing of the Nursery.
FOR SALE ENTIRELY WITHOUT RESERVE.
Important to Gentlemen forming Collections.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. E. Bonny, to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY, September 27, at half-past 12 o'Clock precisely, the first portion of the entire collection of unusually well-grown ESTABLISHED ORCHIDS. Mr. Bonny has the reputation of being one of the best Orchid growers in the country, and the whole of the plants offered are particularly clean and healthy.

Further particulars will appear next week.

N.B.—The LEASE of the NURSERY is FOR DISPOSAL. There are 6 GREENHOUSES, all admirably heated; Stables, and 1 Acre of Ground; held at the very moderate rental of £20 per annum.

Full particulars of Messrs. PROTHEROE AND MORRIS.

Preliminary Notice.

The well-known Collection of ESTABLISHED ORCHIDS, formed by the late C. J. Partington, Esq., of Heaton House, Cheshunt, and including undoubtedly the finest lot of Phalænopsis that has been offered for many years.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to prepare for SALE by AUCTION, in the month of OCTOBER NEXT, the above well-known Collection of ESTABLISHED ORCHIDS, including an exceptionally fine lot of Phalænopsis, the whole of the plants being remarkably well grown, and in excellent condition. The Collection also includes a very fine batch of Cattleya Mendelii, five plants of C. Gaskelliana alba, C. Mossiæ, a splendid lot of Masdevallias, and others.

Further particulars will appear in future announcements. Catalogues are now in course of preparation.

67 and 68, Cheapside, E.C.

To Nurserymen, Florists and Others.

AT NOMINAL RESERVES.—LARGE PLOTS of FREEHOLD LAND, on the Millbridge Estate, Edmonton. Possession on Payment of Deposit, Balance spread over Five Years. Free Conveyance.

MR. ALFRED RICHARDS is instructed by the Directors of the Land Investment Company (Limited), to SELL by AUCTION, at the Angel Hotel, Edmonton, on WEDNESDAY, September 25, at 6 for 7 o'Clock precisely, in the evening, in Lots, about 13 ACRES of most eligible FREEHOLD LAND, situate immediately in the rear of the Main Road from London to Hertford. The Lots will be offered in blocks varying in size from a quarter of an acre to 4 acres, and will be eligible either for the erection of Glass-houses for Florists or Nursery Purposes, or for sub-division and re-sale in plots. The payment of the purchase money may (if desired), be spread over a period of five years. Possession of the Land may be had on payment of 10 per Cent. deposit, and a free conveyance will be given by the Vendors. The Millbridge Estate is a short distance from the Edmonton Station, on the Great Eastern Railway; the trams pass along the main road, and the new line of railway, from Edmonton to Cheshunt, now in course of construction, will materially enhance the value of the land to be offered.

May be viewed, and particulars, with plans and conditions of Sale, obtained of G. THATCHER, Esq., 19, Bennet's Hill; and of the Auctioneer, Tottenham, and 8, New Broad Street, E.C.

TO BE SOLD, a bargain!!! A grand old NURSERY, in the West of England. Established upwards of a century, containing about 20 acres of rich fertile Soil, enjoying special climatic advantages, splendid young Stock, nearly 40,000 feet super of Glass, Trade Buildings, large and commodious Dwelling House. Held on lease. Incoming £3500. The stock is believed to be worth about £5000, as between nurseryman and nurseryman.

Apply for particulars to Messrs. PROTHEROE AND MORRIS, Auctioneers and Land Agents, 67 and 68, Cheapside, London E.C.

London, N.W.

FOR SALE, a capital NURSERY, comprising about an Acre of Ground, with Dwelling-House, 14 Glasshouses, all heated; Pits and Stabling. Rent £60 per annum. Price for long Lease, Goodwill, Stock, Glasshouses, and Utensils in Trade, £1700. Part could remain.

Apply, PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Extensive and desirable Nursery Business for Sale,

at Annan, Dumfriesshire.

THERE IS FOR SALE, by Private Bargain, as a going concern, the Old-established NURSERY BUSINESS, so long and successfully carried on, under the firm of Messrs. John Palmer & Son, by the late William Palmer, Nurseryman, Annan.

The Nurseries extend to 54 acres or thereby, 8 acres being held on lease from Mrs. Clarke of Galabanks, which expires at Candlemas, 1890, and 46 acres belonging to the trustees of the late Mr. Palmer, with whom arrangements could be made for a Lease on very moderate terms.

The Nurseries are in the highest state of cultivation, and the Stock is exceptionally healthy and good. It consists of seedling and transplanted Forest Trees; seedling and bedding Shrubs of all sorts; and a fine collection of good growing Coniferæ; with ornamental Trees, and Roses of the finest and most varied sorts. There is also a fine and varied stock of Fruit and other Trees, all in excellent growth and in great demand. In connection with the Nurseries, there are Sheds and Grounds set apart and completely fitted up, for propagating and other purposes.

The Nurseries are situated close to the Station of Annan, on the main line of the Glasgow and South-Western Railway; and also near to the Station, on the line of the Caledonian Railway Company.

This excellent situation affords a very ready and advantageous outlet to all the English and Scotch Markets, and is one of the great advantages which these Nurseries possess. There is also a convenient outlet into Cumberland and the West Coast, by the Solway Junction Railway.

This is a most favourable opportunity for any party acquiring, on most advantageous terms, such an excellent Nursery Stock and Business, which has for so long held a prominent place among the Nurseries of Scotland.

Application for any further particulars may be made to Messrs. BROWN AND LITTLE, British Linen Company Bank, Annan, who will arrange for inspection of the Nurseries.

Hampton-on-Thames.

To FLORISTS, NURSERYMEN, and OTHERS.

FOR SALE, with immediate possession, a FREEHOLD ORCHARD, containing over 5 acres, crowded with excellent Fruit Trees, &c.; 3 minutes from station. Price low to an immediate purchaser. Also several small sites well adapted for Nursery purposes.

Apply to Mr. JOHN EMBLETON, Auctioneer and Estate Agent, Suffolk House, New Hampton.

Surrey.—To Plant and Fruit Growers.

TO BE LET, on LEASE, an Acre of walled-in GARDEN, and several Glass-houses, heated, attached to a Gentleman's Residence.

Rent, and full particulars, of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

TO BE SOLD, the Roots of 2 Acres 5 Perches of RHUBARB, adjoining the Holborn Estate Almshouses at Tooting.. To be viewed on application to the GARDENER, at the Almshouses. Tenders for the same to be sent on or before MONDAY, the 23rd inst., to the CLERK of the Holborn Estate Charity, 16, Houghton Street, Strand, W.C.

To Gardeners and Others.

FOR SALE, complete or any part of same, a splendid CIRCULAR, IRON and GLASS ROOF, with the return Hip, containing fourteen Circular Wrought-iron Girders (lately forming the Roof of the Conservatory at the Horticultural Gardens, South Kensington); the Glass will be Sold separately, or together with the Ironwork.

Apply to Mr. GOODMAN, Hartham Works, Hartham Road, Holloway, N.

TO BE LET, for Christmas Next, the well-appointed family residence BAGOT MANOR, within a mile of St. Helier's, Jersey, with all its Vineries and Greenhouses and extensive Fruit Plantations of upwards of 50,000 choice Pear Trees now in full bearing. The property is divided into three sections, surrounded with high walls, extending over two miles, on which grow choice Fruit Trees also in full bearing.

SECTION 1.—Contains the family Residence, with Ornamental Trees, Flower Gardens, Conservatory, and extensive Outhouses, Coach-house and Stables, Packing and Fruit Rooms, walled Kitchen Garden, 7 Greenhouses and Vineries, and 7 acres of Fruit Plantation and Gardener's Cottage.

No. 2.—Contains 11 acres of Fruit Plantation laid out in squares, edged by Strawberry and Asparagus Plants, all of which is completely walled in.

No. 3.—Contains 3½ acres, most of which is also planted with choice Trees in full bearing, all completely walled in.

For particulars, apply to G. P. BENEST, House and Estate Agent, 18, Queen Street, Jersey.

Channel Islands.

TO LET, Highfield, St. Saviour's, Jersey, delightful RESIDENCE, with 15 Green and Hot Houses, in full bearing.

Particulars, Mrs. BRAYN, on Premises.

TO BE LET, at Michaelmas next, the PILTDOWN NURSERIES, Maresfield, Sussex, 2½ miles from Uckfield Station (L. B. and S. Coast Railway), and a little more from Buxted and Sheffield Park Stations.

These Nurseries were for many years owned and occupied by the late Mr. James Mitchell, one of the most successful exhibitors of Roses of his day, and they are particularly suitable for their growth. They are also well adapted for all kinds of Coniferæ and Flowering Shrubs, and Fruit and Forest Trees. They are about 15 Acres in extent.

The Nurseries are well stocked with Roses of the best kinds, Ornamental Shrubs, Fruit and Forest Trees, &c. It has been for five years, and is now in the occupation of Mr. G. W. Piper.

They are an easy distance from the Stations on the London, Brighton, and South-Coast Railway, on the direct Tunbridge Wells and Brighton Line, and are therefore in direct railway communication with these towns, as well as Lewes, Hastings, and Eastbourne.

For full particulars, and to view, apply to MARK SANDFORD, Estate Agent, Maresfield, near Uckfield, Sussex.

HUMBLE APPEAL TO THE TRADE and Others.—By Misfortune through an Action in the Court of Queen's Bench.

Would any kind, generous Friend help me with a few spare PLANTS, BULBS, CUTTINGS, &c., to Grow on, suitable for Cut Stuff, by that means enable me to still carry on business, and confer a lasting favour. Parcels can be sent through CARTER, PATERSON, or PICKFORD, who deliver here, and will be promptly acknowledged by

GEO. PURNELL, Lion Nursery, Bexley Heath, Kent.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Make SPECIALTIES of the following:—

ORCHIDS, of which they have an immense stock, and they are constantly receiving fresh importations from various parts of the world.

ORCHID BASKETS, made of the best Teak and Copper Wire.

COWAN'S PATENT ORCHID POTTERY, which should be used for all Orchids.

ORCHID PEAT of best quality. Sphagnum MOSS. Best Wood CHARCOAL.

TEA and other ROSES in pots. The Company have a large and splendid stock, all healthy and vigorous.

FERNS, a large and fine stock of the leading kinds.

GRAPE VINES. The Company's Stock is, as usual, unsurpassed by any in the country. Strong Vines raised from eyes this season, fit for immediate planting.

ROMAN HYACINTHS, 1st size, 5 to 6½ inches circumference, 17*s.* 6*d.* p. 100; 2nd size, 15*s.* p. 100; 3rd size, 12*s.* 6*d.* p. 100.

The Company offer all the above at the lowest possible prices. New Illustrated LIST, post-free, on application to

THE VINEYARD AND NURSERIES,
GARSTON, LIVERPOOL.

CLAPTON NURSERY, LONDON,

and BUSH HILL PARK, ENFIELD.

The GLASS STRUCTURES cover an area of upwards of 315,000 feet.

EIGHTY HOUSES DEVOTED TO CULTURE OF ORCHIDS, PALMS, and FERNS.

Immense quantities of Winter and Spring Flowering Plants in variety, Ornamental Foliaged Plants, Fruit Trees, Grape Vines, Roses, Shrubs, &c.

Inspection of the Stock invited.

HUGH LOW AND CO.

DAFFODILS and NARCISSUS.—From 50 to 100 per cent. fall in all sorts of Daffodils and Narcissus. Write for "Hartland's 36 quarto-page Book" on the subject. It is acknowledged to be the most complete extant. Price 1*s.* 6*d.*; returnable unless considered value. Certainly as a *work of art*, it should be in the hands of all lovers of "old fashioned" flowers.

WM. BAYLOR HARTLAND, Seedsman and Florist, 24, Patrick Street, Cork.

SCOTT'S WASP DESTROYER. — The original article has gained a wide-spread reputation as being thoroughly effectual in destroying these pests. Post-free, 1*s.* 8*d.* and 2*s.* 9*d.* per bottle, from

JOHN SCOTT, The Royal Seed Stores, Yeovil.

LEMON OIL INSECTICIDE.—The best of all preparations for easily, cheaply, and effectually cleaning Plants from Green-fly, Thrip Scale, Bug, &c. Follow the directions, and you will always use it.

Pint, 1*s.* 6*d.*; quart, 2*s.* 9*d.*; ½ gallon, 5*s.*; 1 gallon, 9*s.*; 4 gallons, 34*s.* Ask your seedsman for it, or apply to

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

CLIBRAN'S EUCHARIS MITE KILLER.

A CURE AT LAST FOR THIS DREADFUL PEST.

Eucharis, treated according to the directions, and grown with ordinary cultural care, become healthy in a short time, as a trial will convince. *Numerous Testimonials.*

Prices:—½ pint, 1*s.* 6*d.*; 1 pint, 2*s.* 6*d.*; 1 quart, 4*s.* 6*d.*; ½ gallon, 7*s.* 6*d.*; 1 gallon, 12*s.* 6*d.*

Ask your seedsman for it, or apply to

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

BENTLEY'S INSECTICIDE.

Mr. J. H. ROSE, *Lockinge Park, writes:*—"Bentley's Insecticide is the most effective and cheapest I have ever used."

For full particulars apply to **JOSEPH BENTLEY,** Chemical Works, Barrow-on-Humber, **HULL.**

London Agent: Mr. A. ROBINSON, 8, Leadenhall Street, E.C.

GENUINE GARDEN REQUISITES, as supplied to Royal Gardens, &c.

SPÉCIALITÉ TOBACCO PAPER, the best and strongest in the market, 10*d.* per lb., 28 lb. for 21*s.*

SELECT ORCHID PEAT, 8*s.* per sack, 5 for 35*s.*

SOILS and MANURES of finest quality, and GENERAL SUNDRIES. Price list free.

W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

EFFECTIVE, SAFE & ECONOMICAL.

IMPROVED & ONLY GENUINE

MEDICATED TOBACCO PAPER

(READY CUT UP FOR USE),

REDUCED PRICE, 1/6 per lb.

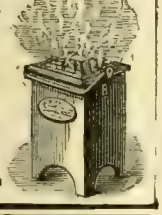
28 lbs. and upwards—Carriage Paid.

Parcels for trial, sent Free by Parcels Post, viz:—
2 lbs. 3/4, 4 lbs. 6/8, 6 lbs. 9/9, 8 lbs. 13/-, 10 lbs. 16/-

Dicksons Improved Fumigating Pan

Is vastly superior to any other.

PRICE in Iron 6/6, or in Copper, 21/-



DICKSONS

(Limited)

The Royal Seedsmen,

CHESTER.

THE

NORMAL FERTILISER

For GREENHOUSE or GARDEN.

Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
	2*s.*	3*s.* 6*d.*	5*s.* 6*d.*	9*s.*	14*s.*

And in 6*d.* and 1*s.* packets.

To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts. Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1*s.*, 2*s.* 6*d.*, 5*s.* 6*d.*, and 10*s.* 6*d.* each, or 1 cwt. Bags, sealed, 13*s.* By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

"PICRENA," THE UNIVERSAL INSECTICIDE.

SAFE—ECONOMICAL—EFFECTUAL.

15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95° I find it kill Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

Sold by Chemists, Nurserymen, and Florists,
in Bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.*; in Tins (1 and 2 gallons), 10*s.* 6*d.* and 20*s.* each; in quantities of 5 gallons and upwards, 9*s.* per gallon.

Prepared only by
DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from

WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.



GARDEN REQUISITES.

TWO PRIZE MEDALS.



Quality, THE BEST in the Market. (All sacks included.)

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each.

GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Cloth or Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c. Write for Price List.

Terms strictly Cash with order.

CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Union Bank of London.*

Complete Satisfaction Guaranteed

To all using preparations bearing our Trade Mark in accordance with our directions. *Refuse Imitations.*

THE "SWIFT & SURE" INSECTICIDE. Bottles, 1/6 & 3/6; gall., 10/6; 4 galls., 30/

"PERFECT" WEED KILLER.—Gallon, 2/; 5 gal., 1/9, 10 gal., 1/6, 40 gal., 1/4 p. gal.

"PERFECT" WORM DESTROYER.—Bottles, 1/6 & 3/6; gal., 7/6; 5 gal., 5/p. gal.

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As a Supplement

TO THE

GARDENERS' CHRONICLE

FOR

Next Week, September 21,

WILL BE

Published an Ink Photograph

OF

PALMS in the Public Gardens, MADEIRA.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 14, 1889.

A HISTORY OF ENGLISH GARDENING.

(Continued from p. 12.)

DURING the first half of the fifteenth century, two English treatises on gardening were current in England. The first of these was a translation of a Latin work by Palladius; the other appears to have been an original work by one Nicholas Bollarde, a monk of Westminster. There are several copies of these two works existing in our various public libraries; but, perhaps the best are among the Sloan MSS. in the British Museum. The Sloan MS., No. 7, contains the two works in question, written in clear and distinct hands, and, consequently, very easy to read; but, notwithstanding this, little can be gleaned from them as to the plan or arrangement of the gardens of the period. They show us, however, that the processes of gardening were simple and easy, and that the gardeners' skill consisted chiefly in the knowledge of the seasons for sowing and planting different trees and herbs, and of the astrological circumstances under which these processes could be performed most advantageously. They show us also that the great ambition of the fifteenth century horticulturists was to excel in the various mysteries of grafting, and that he entertained theories on this subject of the most varied and visionary character. Many of the directions given are very singular. "If thou wilt that thy Apples be red, take a graff of an Apple tree, and impe it upon a stock of an Elm or an Elder, and it shall bear red Apples." Another receipt directs that if one want "many Roses," one should "take the hard pepins that be right ripe, and sow them in February or March, and when they spring, water them well, and after a year thou mayest transplant them; and if thou wilt have early Roses, delve about the roots one or two handbreadths, and water their scions with warm water."

But it is not from the works on gardening that our knowledge of the plan and arrangement of the fifteenth century gardens is derived; we must go to

the poets for this, and then we shall not lack for information. Nearly all our fifteenth century poets mention gardens, and not a few give beautiful descriptions of them. One of the most interesting of these is a description of the garden adjoining Windsor Castle, given by King James I. of Scotland, in his poem entitled the "King's Quhaire."* King James was imprisoned in the Castle for upwards of eighteen years, and writing verse appears to have been one of his principal employments during his incarceration. The following is his description of the garden which lay before his prison window at Windsor :—

"Now was there made, fast by the Towris wall,
A garden fair; and in the corners set
An arbour green, with wandis long and small
Railèd about, and so with treès set
Was all the place, and Hawthorne hedges knet,
That lyf was none walking there forbye,†
That might within scarce any wight espy.

"So thick the boughes and the leaves green
Beshaded all the alleys that there were,
And mids of every arbour might be seen
The sharpë greenë sweetë Juniper,
Growing so fair with branches here and there,
That as it seemed to a lyf without,
The boughès spread the arbour all about.

"And on the smallë greenë twistis ‡ sat
The little sweetë nightingale, and sung
So loud and clear, the hymnis consecrat
Of loris use, now soft, now loud among
That all the gardens and the wallis rung
Right of their song."

This beautiful description gives a good idea of an English garden in the first half of the fifteenth century. In the latter half, however, several new features were introduced into the English gardens. The principal of these were the fences of trellis-work, which were placed around the garden-beds, and over which Roses and other climbing plants were trained. They are seldom alluded to by the poets of the period,§ but representations of them are very common in fifteenth century illuminated MSS. Their arrangement may be well seen in the background of the annexed woodcut (fig. 43, p. 295), which represents a scene in the early French romance of *La Quatre Fils d'Aymon*. Towards the end of the fifteenth century, the art of topiary work was also introduced into the English gardens, and it must often have produced a very singular effect. In a poem of Stephan Hawes, entitled *The Pastime of Pleasure*, we read of a garden in which—

Rampande lyons stoode up wonderfly,
Made all of herbes with dulcet sweetness
With many dragons of marvaylos likeness
Of divers flowers made full craftely
By Flora coloured with colours sundry.

These lines, imaginary as they may look, are probably founded upon fact; for soon after they were written, topiary work was undoubtedly a common feature of the English garden. Leland, in his *Itinerary*, a work which was written in the early part of the sixteenth century, mentions several places in England where fine specimens of the work might be seen. "At Uskelle village, about a mile from Tewton," he writes, "is a goodly house longing to the prebend of York, and a goodly orchard with walks *opere topiario*."‖ At Woesehill Castle also were orchards with "mounts *opere topiario*, written about in degrees like turnings of cokilshells."¶

With regard to the plants cultivated in the English gardens of the fifteenth century, very little information can be derived from the two gardening treatises that were then current. There are, however, several MSS. of that period still preserved, which contain lists of plants then considered necessary to be grown in a garden. The most important of these is one contained in the Sloan MS., No. 1201, which was written apparently about the year 1450, It first gives a list of the plant names in alphabetical order, and then a list of those kinds which were most esteemed for "potage," for "salades," for their "savour and beauty," &c. This portion of the manuscript we print here entire :—

Herbes for Potage.—Borage, Laugdebefe (Buglos), Ryolettes, Mallowes, Marcury, Dandelion, Avence, Myntes, Sauge, Parceley, Goldes (Marygolds), Marjoram, Fennelle, Red Netylle, Oculus christi (Clary), Daysys, Cherfil, Lekez, Colewortes, Rapez, Tyme, Chives, Beetes, Alysaundre, Letyse, Betanye, Columbine, Allia, Basil, Dylle, Detany, Hertestonge, Radish, Cabagez, Setewale, Spynache, Colianndre, Nepte, Pacience.

Herbes for Sauce.—Hertestonge, Sorelle, Pelytory, Pellytory of Spayne, Deteyne, Vyolettes, Parcely, Myntes.

Herbes for the Coppe.—Cost, Costmary, Sauge, Hysop, Rosemary, Goldez, Clary, Marjoram, Rue.

Herbes for a Salade.—Buddus of Stanmarche (Alexander's), Vyolette flourez, Parceley, Red Myntes, Syves (Chives), Cresse of Boleyne, Purselain, Damsons, Calaminte, Primerose buddes, Dayses, Daundelyon, Rokette, Red Nettle, Borage flowers, croppus of Red Fennel, Chynkenwede.

*Herbes to Stylle (distil).**—Endyve, red Rose, Rosemary, Dragans (?), Skabiose, Ewfrace (Eyebright), Wermode, Mogwede, Beteyne, wylde Tansey, Sauge, Hysope, Ersemart.

Herbes for Savour and Beauty.—Gyllofre gentylle (common Gillyflower), Sweet Marjoram, Stycadose, Melonces, Scalacely (Solomon's Seal), Popy Royal, Germander, Cowsloppes of Jerusalem, Verveyne, Dill, Seynt Marie Garlic.

Rootes for a Garden. — Parsnepez, Turnepez, Radyche, Karrettes, Galingale, Eringoes, Saffrone.

Plantes for an Herbere.—Vynes, Rosers, Lyles, Thewberries, Almondez, Bay trees, Peche trees, Pyne-apples, Pyany Romaine, Rose Campion, Seliane, Columbyne gentyle.

Another fifteenth century list of garden plants is given in a work by Gilbert Kymer,† and it is chiefly interesting from the fact that it mentions several kinds of plants not given in the former list. Among these may be noted, Lettuce, Smallage, and two or three varieties of Onion. According to Kymer, nearly all the vegetables cultivated in his time were eaten, boiled with meat; but he observes that some were eaten raw in spring and summer with Olive-oil and spices, but he questions the propriety of the custom. Almonds, Hazel-nuts, Quinces, Damsons, Cherries, Strawberries, green Figs, Mulberries, and Medlars are also mentioned by him as having been grown in the fifteenth century orchards. *P. E. N.*

(To be continued.)

ORCHID NOTES AND GLEANINGS.

VANDA KIMBALLIANA, *Rchb. f.*

THIS fine Vanda was described as recently as February 23 of the present year, from dried specimens imported by Messrs. H. Low & Co., of Clapton. It is now flowering for the first time in this country, with the same firm, and flowers have been sent to Kew for preservation. It is allied to V. Amesiana, though the flowers are very distinct, and quite bear out the statement of Messrs. Low's collector that they are pure white, with a beautifully rosy-purple lip. This latter colour, however, is confined to the front lobe, for the side lobes are light yellow, beautifully spotted with light-brown. The flowers are 2 inches in diameter, and the spur half this length, tolerably straight; at least, I should not speak of it as "recurved, which is quite peculiar and new," from the flowers now sent. The white of the segments is of a semi-pellucid nature, and there are faint traces of lightest purple present. The other characters of the plant are fully given at p. 232 of the last volume. It is a very pretty species. Nothing appears to have been divulged as to its native country at present, but we hope this will be given hereafter *R. A. Rolfe.*

ONCIDIUM RETEMEYERIANUM, *Rchb. f.*

This is a highly curious species of the group Sarcoptera, and thus allied to O. Lanceanum and Cavendishianum, yet so anomalous in some of its characters that it might easily be taken for something else from flowers alone. A small part of a raceme has just been sent by M. Kienast-Zolly, of Hirslanden, Zurich, for determination, having been imported by him from Mexico. Reichenbach compares the lip with that of Cottonia peduncularis, to which it certainly bears some resemblance; while to me it immediately suggested some Ophrys. It is broadly pandurate, the centre yellow, and surrounding this a broad blackish-purple margin. The segments are pallid, with numerous pale flesh-purple blotches. The leaves are fleshy, beautifully spotted with brown, and the habit of the plant quite typical of the section to which it belongs. Unless very free-flowering, I fear it will be thought more curious than beautiful. There are three figures of the plant: *Refurgium Botanicum*, ii., t. 74; *Xenia Orchidacea*, iii., t. 218; and *Belgique Horticole*, 1872, t. 14. It was described as early as 1856. *R. A. Rolfe.*

ANGRÆCUM SCOTTIANUM.

This singular and beautiful species is in flower in Mr. Gordon's nursery, Amyand Park Road, Twickenham. Its singular, large, waxy white flowers, with 6 inches long cinnamon-coloured tails showing very effectively on the slender-stemmed plants, with their curious terete leaves. It grows best in a basket suspended in the intermediate-house. *J. O'B.*

CYPRIPEDIUM NIVEUM, &c.

A beautiful little group of Lady-slipper Orchids, quite distinct from the rest of the genus, is formed by this species, C. concolor, C. Godefroyæ, and C. bellatulum. They are the dwarfest of Cypripediums, the scapes of C. niveum, which are the tallest, being rarely more than 6 inches high. The dainty appearance of the flowers in which the "greens" and "brownish-purples," so prevalent in this genus, are altogether absent; and the handsome dark green marbled surface of the leaves make these plants veritable gems—far and away, indeed, the most charming of Cypripediums.

The first to be introduced was C. concolor, a native of Moulmein, where it was discovered a quarter of a century ago by the Rev. C. Parish. The scape is 2 inches high, and bears one or two flowers of a rich creamy-yellow minutely dotted with crimson.

C. niveum, which is perhaps the most delicately beautiful of the group, was introduced in 1869, and is a native of the Malacca Straits and the west coast of Siam. The flowers are of a pure snowy-white, saving a few cinnamon or purple specks at the base of the sepals and petals. Usually the flowers are smaller than in the other species, but there is a fine form figured in *Bot. Mag.*, t. 5922, with flowers 3 to 3½ inches in diameter, which was introduced by Mr. Bull from the Tambelan Islands—a small group lying midway between Singapore and Borneo. When out of flower, C. niveum may be recognised by its darker green and comparatively narrow leaves.

C. Godefroyæ has the foliage of C. concolor, but its flowers are nearer those of C. niveum. They have the same white ground, the distinguishing feature being the purple spots of various shades, which are distributed over the whole flower. The first plants that appeared in this country were sold for large sums, but numerous importations have reduced its price to that of the others.

One of the most distinct and remarkable plants introduced in 1888 was C. bellatulum, for which Orchid-lovers are indebted to the enterprise of Messrs. Low. The bold marking of its flowers make it certainly the most striking species in this group; it is also the largest both in foliage and bloom. A glance at the figure in the *Gardeners' Chronicle* for June 16, 1888, clearly shows its character. Flowers

* Book. † None of the passers-by could look within.
‡ Twigs.
§ Skelton (*Poems*, vol. i., p. 388) mentions a garden containing beds "enrayled with Roses and Vynes engraped."
‖ Leland, *Itin.*, vol. i., f. 47. ¶ *Ibid.*, vol. i., f. 60.

* In the *Household Accounts* of the fifth Earl of Northumberland for 1502, is given the following list of "herbes to stylle":—Borage, Columbine, Buglos, Sorrel, Cousloppes, Seabices, wild Tansey, Wormwood, Endyff, Sauge, Dandelion, and Hart's-tongue. † See Sloan MS., No. 4, f. 81.

have been measured over 4 inches across. They are white (frequently of a yellowish tinge), freely marked with roundish spots of purple-brown.

All the species thrive under stove treatment. They may be grown singly in pots, but if sufficient plants are available, a better effect is produced by growing several together in broad, shallow pans. In their native condition they are most frequently found on limestone, and it is beneficial to them to mix nodules of this with the compost, which in other respects should consist of equal parts of fibrous peat and loam, with a sprinking of coarse sand. Abundance of water is essential during the warmer months, but in foggy districts like London there is a danger of giving too much in winter. It is necessary also to guard against water lodging in the centre. I may add, however, that in February I saw a perfectly healthy collection of these Cypripedes, which had been freely watered, and given growing treatment throughout. But the situation was one where London smoke did not reach—a very great advantage in Orchid cultivation.

Besides the above species, which are mentioned in the order of relationship, a number of varieties exist, but being simply intermediate between them, it is unnecessary to enumerate them. *W. B.*

SAXIFRAGA MACNABIANA.

Saxifraga Macnabiana is considered to be the most showy of all the cultivated Saxifrages, having the scape of S. Cotyledon, but with the petals dotted over with deep carmine spots. It was raised at the Royal Botanical Gardens, Edinburgh, in 1876, when Mr. MacNab was the curator, and was named after him. Mr. Lindsay, the present curator, who was the real raiser of the plant, informs me that nothing whatever was known of its parentage, but that S. nepalensis produced the seeds. This is merely a garden variety of S. Cotyledon, which occurs in the wild state throughout Europe from the Pyrenees to Lapland. In Lapland it is called the Fjeld frier, and it is the sweetheart's gift to his lady-love in that country, where it produces lovely panicles of white flowers 2 feet high. Mr. Lindsay, when in Norway, in 1877, gathered many specimens of S. Cotyledon differing considerably from the type in flowers and foliage. It will be seen that this susceptibility to variation is characteristic of the plant under cultivation.

When S. Macnabiana was raised, the only plant near S. Cotyledon was S. lingulata, a species of dwarfer growth, the petals spotted with pink, and the foliage edged with encrusted pores. Mr. Lindsay therefore believes that S. lingulata was the pollen parent, and this is probably the case, as many of the seedlings are like this species, and the dwarfer habit of the plant may also have been brought about by this cross. S. Macnabiana seldom exceeds half the height of S. Cotyledon. Its leaves are also much smaller. A fine flower-scape will number over a hundred flowers. One fine plant of S. nepalensis, in flower at Brockhurst in 1883, carried forty-four branches from the centre stalk, each having from twelve to twenty-two flowers, so that there were about 750 flowers, each the size of a fourpenny-piece, in one panicle of bloom. Now as these flowers occur in succession, it will be clear that there may be considerable variety in the time of ripening of the flowers, and thus there is room for great divergence.

In 1886, a fine scape of S. Macnabiana ripened its seed in my garden, and a quantity was saved from it. This was sown, and produced a large crop of plants. It was soon noticed that there were great differences amongst the seedlings, and these increased as the plants grew. The most notable were therefore separated, and were grown on in small pots, and of these 110 varieties are now exhibited, every one resulting from the seed of this one single scape. In the garden where the plant grew, there were nearly all the known species and varieties of Saxifrage, at least 150; and, therefore, it is possible enough that pollen from a great variety of Saxifrages might be carried by insects to the mother plant. Likenesses are evident, amongst the 110 seedlings, to the following species and varieties of Saxifraga:—lingulata, Hostii, crustata, pectinata, elatior, carinthiaca, Cotyledon, Aizoon, and Guthreana.

Here, then, we have a remarkable illustration of the multiplication of varieties from a single scape of bloom; and it affords an excellent example of the truth of Darwin's investigations on the fertilisation of plants by insects.

Sprengel was, I believe, the first to point out that many flowers were fertilised by insects; and Andrew Knight showed that in no plant does self-fertilisation occur for an unlimited number of generations. Our own Dean Herbert nearly made the same discovery, as he found that advantage was derived from the seed obtained by pollen from another individual of the same variety, rather than its own. Darwin, however, finally showed by careful investigation that plants were improved by crossing with another



Fig. 43.—A fifteenth century garden (see p. 294).

stock; that the application of pollen to the pistil of the same flower is less efficient than pollen from another individual. He also showed how frequently self-fertilisation is prevented by the relative position of the reproductive organs, or by their ripening at different times. This subject has been carried much further by Müller, whose book contains minute descriptions of the reproductive parts of every class of flower, and long lists of the insects which are found to frequent each flower in search of food. Müller, however, does not appear to have observed the Saxifrages, and he gives no list of insects frequenting them. He merely states that Dr. A. Engler investigated thirty-eight species of Saxifrages, and found them all to be proterandrous; the pollen-tipped stamens moving singly, in succession, towards the centre of the flower. In this way the pistil became fertilised. This, I find, may readily be observed in many of the Saxifrages, and particularly in S. oppositifolia, and there is but little variety in this class of self-fertilised Saxifrages. Müller then remarks that in some Alpine species there is the peculiarity that the anthers are withered before the stigma has ripened. He does not name S. Cotyledon, or any species having these habits, but herein we have the key to the question before us.

Julius von Sachs, in his *Physiology of Plants*, just translated by Professor Marshall Ward, describes this peculiar arrangement under the term "Dichogamy,"—*i.e.*, the non-simultaneous development of the two sexual organs. When this occurs, as it does in S. Cotyledon and S. Macnabiana, insects are the means by which the pollen is carried to the ripe pistil, and thus a great variety of pollen may be carried to the individual flowers of a single scape, and the progeny will be varied accordingly.

The 110 varieties of Saxifrages now exhibited are illustrations of this curious subject. *W. Brockbank, in "Memoirs of the Manchester Literary and Philosophical Society."*

NURSERY NOTES.

FRUITS AT MESSRS. J. VEITCH AND SONS, LANGLEY AND FULHAM.

Langley Nurseries.—The soil and situation is most favourable here for Apples, and they are grown in large quantities as standards, pyramids, on Crab and Paradise stocks, cordons, horizontal, and fan-trained. The trained trees are bearing profusely, more especially those on Paradise stock. Amongst good bearers we noted on a recent inspection the following dessert varieties:—Reine Jaune Hâtive, one of the most beautiful of the early dessert Apples, a variety that should be extensively cultivated; St. Edmund's Pippin, a very pretty early Russet; Scarlet Nonpareil, medium size, handsome, and well-flavoured: the tree forms a fine pyramid, and is an abundant bearer; Peck's Pleasant, apparently a variety of Newtown Pippin, but hardier, and a more vigorous grower; Borovitsky (Duchess of Oldenburg), large, flesh yellowish-white, crisp and juicy, a nice early Apple; King of Tomkin's County, very large, greenish-yellow, streaked, hangs on the tree late, and keeps well till May, when it is an excellent dessert Apple; tree very hardy, free-growing, and profuse bearer: makes a good standard or pyramid. Margil, small, richly flavoured, and highly perfumed, one of the finest dessert Apples; the tree is a small grower, but forms a neat prolific pyramid. Cumberland Apple, a rather large conical variety, suitable for dessert or culinary use; the ever-popular Cox's Orange Pippin, one of the finest dessert Apples: the tree forms a good pyramid, and is an abundant bearer. Of other noteworthy sorts may be mentioned King Harry, the handsome Worcester Pearmain, Oslin, a first-rate summer Apple—the tree is a great bearer; Reinette du Canada, Cornish Aromatic, Mannington Pearmain, Kerry Pippin, A 1 as an early Apple and a prolific bearer; Duke of Devonshire—the tree forms a handsome pyramid; Dutch Mignonne, Pitmaston, Nonpareil, &c.

Kitchen Apples.—Bismarck, a good culinary Apple, that keeps well, and retains its flavour till the end of April; very free-bearing both on the Crab and Paradise stock. The Sandringham: this fine novelty, on account of its large size and handsome appearance, is unquestionably the best and most useful introduction of late years; the tree is of good habit, of hardy constitution, and an excellent bearer. Bramley's Seedling, one of the best culinary Apples; tree hardy and robust. Transparent du Croncelles, not much known, a good sort. Early Russian, bearing well; North End Pippin, very little known, but a very heavy solid Apple, keeping till June. Niton House, like Stirling Castle, but larger, and keeping till March; the tree is a better grower, and bears equally well. Ecklinville Pippin: the tree forms a good pyramid, and is a most abundant bearer. Hawthornden, large, excellent and prolific. Graham's, an excellent keeper; Mrs. Barron, large yellow, flesh sweet, and of first quality; Gascoigne's Seedling, Domino—a good early Apple; Barnack Beauty, a useful late variety; Baumann's Red Reinette, a good keeper, tree very prolific; Peasgood's Nonsuch, extra

fine and free-bearing; and Pott's Seedling, an excellent culinary variety.

Pears.—Amongst Pears we noted Marie Benoist, one of the best late keepers, makes a good cordon or small pyramid on the Quince. Triomphe de Vienne, large and russety, flavour rich, tree prolific, just now in perfection. Of other good sorts at the time of our visit, we noted Belle d'Ecully, above medium-size, flesh tender, melting, and very juicy; Bergamotte Heinbourg, a fine sort, with the flavour of the old Autumn Bergamot; and Beurré Dumont, medium size, richly flavoured, with fine musky perfume. We noticed good quarters of pyramids, from 3 to 6 and 7 feet high—fine bearing trees—and large numbers of trained trees, both fan and horizontal. One of the great and interesting features at Langley is the large collection of Apples, Pears, Plums, and Cherries planted out for trial—borders over half a mile being devoted to them—the collection of Apples containing about 350 sorts, Pears 230, Plums 150, and Cherries 80, from which the fruit exhibited at the Royal Horticultural Society and other exhibitions is taken. Three trees of each kind are planted, thus giving a good idea of the value of each sort. A most instructive portion of the nursery.

Plums.—These fruits are grown in quantity, as standards and pyramids. Cherries were noted in large numbers, standards, pyramids, and dwarf-trained in various sizes, up to large fruiting trees 8 to 9 feet across. Gooseberries, Currants, and Raspberries are a fine stock. Superlative Raspberry is thought very highly of. The fruit certificated by the Royal Horticultural Society was grown here. An extensive collection of Strawberries in all the best sorts is grown. Waterloo has been very fine and good again.

Southfield Nursery, Fulham.—Although the pure air of Slough does not obtain here, it is surprising what fine trees are grown—trained trees very largely. Peaches and Nectarines, standard, half-standard, and dwarf-trained, in all sizes—one to five years trained trees that will bear crops the first season after removal. Trees in pots, in fine condition, comprise Peaches, Nectarines, Plums, Apricots, Pears, and Cherries. Trained Plums, in large quantities, of all sizes, including many fruiting trees, Pears, trained fan and horizontally in all sizes, many noticed with six tiers of branches. Cherries, especially on Mahaleb stock, are grand. Here they make exceptionally fine trees, and, even in a young state, bear freely. Some of the trained trees are 10 feet across. Apricots, dwarf-trained and standards, are very clean and good. Pyramid Apples are grown in quantity; those on Paradise succeeding well, and bearing good fruit. Trained Apples carry good fruit in many cases. Pyramid Pears were noted in various sizes, both on Pear and Quince stocks.

Cordons: Pears, Apples, Plums, and Cherries, are in quantities, many 6 to 7 feet high, finely set with buds. Figs are grown in quantity, in all the most approved sorts. Amongst new varieties Violette Sepov is an acquisition. It is a very large, dark-fleshed fruit, syrupy, very sweet and luscious; plant dwarfish free bearing, with stout, short-jointed branches. Pingo de Mel and St. John's are also good new varieties.

Amongst miscellaneous subjects were large quantities of Gueldres Roses, Deutzias, &c., all established in pots for forcing, and well set with buds.

In conclusion, a word of praise is due to Mr. F. Morle, under whose excellent management these nurseries are. *X.*

Messrs. J. Laing & Sons.

Begonias.—If ocular demonstration of the esteem with which the Begonias are held by the gardening public were needed, a visit to the nursery at Stanstead Park, S.E., would furnish it. My notes, which were made quite recently, fall naturally under two headings—indoors and outdoors. To refer briefly to some of the more noteworthy varieties found in the former. Single-flowered varieties.—A spacious house is devoted to the cultivation of these. A stage runs down the centre of it, and there is a stage on each side. Here I saw a fine variety for planting in baskets, and appropriately named pendula. The flowers were 6½ inches across, of a deep rose colour; the stems often exceed 9 inches in length, carrying nine flowers on a spike.

Amongst the erect-flowering varieties (a point which, with good habit, has received a considerable share of successful attention here) may be noted Guardsman, brilliant scarlet; the effect produced by the sun shining on a number of plants of this variety was very beautiful. Golden Queen, one of the finest of the yellows—a fine form; Mrs. Weekes, white, edged with rose-pink, as in a Picotee, is novel; Mrs. Chamberlain is a beautiful flower of rose and white; Duchess of Edinburgh is deep shaded yellow—a very fine flower; Queen Victoria has immense deep rose-coloured blooms, over 7 inches in diameter, and is fine in form, besides possessing splendid foliage; Prince Albert Victor, of the brightest scarlet, with a shade of orange, stately in habit, and good in form; Lady Brougham is pale salmon-rose—very fine; Lady Cloncurry, a vivid bronze vermilion, is superb; Lady Iddesleigh is of fawn, tinted with orange-pink—a novel combination of colour, and very distinct; Miss E. F. Cooper is a lovely blush colour, as is Blushing Bride.

Double-flowered Varieties.—A striking novelty is Duchess of Teck, the colour of the flower being that of Maréchal Niel Rose; Leonora, another good novelty, of very pale salmon colour, edged with pink; Viscountess Cranbrook is rose-coloured, with a white centre; F. Nettlefold, a beautiful scarlet, crimped flowers; Miss White (Crousse) is one of the best of the continental flowers I saw, and is of a distinct apricot-colour—quite rose-bud-like flower; Miss French (Crousse) is a beautiful cream-coloured flower; Melaine Soupert (Crousse), pale cream. The varieties sent out by Crousse constitute a good trio. Marquis of Stafford is a deep carmine-crimson—a magnificent flower; alba fimbriata is pure white, beautifully fringed—quite a novelty; Mrs. Amy Adcock, salmon-red, has a distinct white centre, and is an acquisition; Goliath, lovely carmine-crimson, very fine; Alice Manning, yellow, bearing enormous trusses—good for basket-work; Henshaw Russell, bearing rosettes of bright orange-scarlet flowers—an acquisition.

Several good things were noted amongst the doubles and singles which were under numbers, thus rendering distinct reference to them impossible just now, but which must, by their present promising condition, be heard of hereafter.

This makes the ninth year that tuberous Begonias have been bedded out at this nursery, and it may with perfect safety be said that the test has been a perfectly successful one. Used for this purpose, the Begonia is destined to hold a foremost place in the outdoor flower garden decoration of the future. About an acre of space is devoted to them here. There are about 120,000 plants in eighteen long narrow beds, running at right angles to the main road—plants of the variegated Maize, introduced at fitting points, constitute happy breaks to the veritable blaze of colour afforded by the crimsons, scarlets, roses, yellows, and the various other shades of colour so difficult of accurate description. Amongst miscellaneous subjects some beautiful clumps of Phloxes were noted. An extensive and well-grown collection of Chrysanthemums promises good returns at a later date. Vines are greatly in demand, and all the popular sorts are grown. *B.*

THE SHOW DAHLIA.

By Mr. Harry Turner.

History.—The first double or semi-double flowers were obtained about the year 1814 by Mr. Donkelaar, of the Botanic Gardens, Louvain, and from three plants which bore double flowers many varieties were raised, and were imported into this country during the winter of that year, the number of Show and Fancy varieties steadily increasing until we find sixty varieties were cultivated by the London Horticultural Society in the year 1826. Various shades of colour and the quality of the flower gradually improved until the year 1832, when the most decided advance was made by the raising of Springfield Rival, a crimson flower described as superb; and in the year 1841, the number had so increased that one grower claimed to have in his garden 1212 double varieties. After that year, many Show and Fancy flowers were raised, and in the year 1840, we find then some popular flowers were exhibited—viz., Sharp's Beauty of the Plain in eighty-nine stands, forty-four of which were 1st prize stands. Cox's Defiance, a yellow flower, was also exhibited sixty-seven times in forty-one 1st prize stands. Two of the best flowers in 1841 being Conqueror of the World, a yellow ground slightly tipped, and Rival Revenge, a yellow flower, very much ribbed, and which would be discarded from any stand of the present day. Another of the same date, Burnham Hero, having a very bad outline, and rough open petals. In the next year, 1842, Whale's Attila was sent out, a lilac ground with a faint crimson stripe, and also Beauty of Wakefield, a large loose petalled variety with a Picotee edge of lilac, and Princess Royal (Hudson's), a rough flower. The next flowers of importance were Beeswing, a dwarf-growing variety, with crimson flowers, which was exhibited in all the winning stands in 1845; Essex Pride was also good at this time. Amongst the new and improved varieties in 1846 was Cassandra, Magician, Marchioness of Cornwallis, a blush-white, not unlike our present Mrs. Gladstone in colour, but not approaching this latter variety in quality, and Princess Radziwill, a white ground flower tipped with rose, but with a long pointed petal. About this time the flowers had so much improved upon former varieties, that only one variety exhibited in the 1st prize stand of the same number of blooms in 1846 was exhibited six years previously, and that variety was Springfield Rival. The next year, 1847, brought out Scarlet Gem and Berryer, the latter a very dark flower, but with a very ribbed petal; the next variety of note was Shylock, a scarlet flower that obtained fourteen 1st prizes and First-class Certificates; in the same year Toison d'Or, a French variety, obtained some notoriety. In the next year Mr. Seldon was introduced, a very constant flower, which remained in cultivation for fifteen or sixteen years. In 1851, Barmaid, raised by Mr. Holmes, was the most successful flower; it was a tipped variety, after the style of our present Mrs. Shirley Hibberd, but not so constant or good in quality. Mrs. Hansard of this year, a Fancy variety, yellow tipped with white, was a great addition to this class. Bob, a scarlet variety, was about this time grown very successfully—it was a very tall growing variety. The next year, 1853, was an important year: John Franklin, Queen Victoria, and Miss Caroline were some of the principal introductions.

The outline of the flower about this time was much improved, and in 1856 a standard flower, which has been grown to the present time, was raised by George Holmes, Esq., viz., Lord Palmerston. After this came Lord Derby, Leah, Earl of Pembroke, George Rawlings, Harriet Tetterill, John Wyatt, Lady Gladys Herbert, Mrs. Henshaw, Umpire, a chaste flower, but rather small; Fanny Sturt, Gem, Sultan, and Queen Mab, most of these varieties being grown up to the present time. The great improvement which has taken place in the Show and Fancy Dahlia in the last twenty-five years is in the outline, well-shaped petal and perfect centre, the flowers of the present day requiring little or no dressing in comparison to the time it took thirty years since to prepare a stand of Dahlias for exhibition. The improvement in the flower has also had some effect on the habit, and the Show varieties of the present day are not nearly so tall in habit as those grown twenty-five years since.

Cultivation.

The plants intended to be planted out to produce show flowers should be transferred from the small 5-inch pots (in the early part of May) into 48's or 32's, and placed in a cold frame until planted out early in June. Nearly all the varieties make strong plants, and succeed well if grown from cuttings, but a few varieties such as Bendigo, Mrs. Foster, Burgundy, Herbert Turner, &c., which are very double, or are apt to come with green centres, are better grown from pot roots or old divided ground roots. The plants should be planted 5 feet by 4 feet apart, if in a border, arranging for the tallest flowers at the back. After the ground has been squared out, dig

holes about 2 feet square and the same in depth—into each hole put a spadeful of light potting shed or other soil mixed with a little manure—this is to give the plant a start—break up the soil taken out of the hole before returning it; and after the plant is planted, lightly tread when replacing it. A light stick will hold the plant for a few days, and when planting is finished, put a stout stake 4 to 5 feet high to each plant, and tie the stem of the plant to the stake rather loosely to allow for the stem to swell in due course. As soon as the main stem throws out laterals, add four smaller stakes to secure the side-branches to keep them well tied out, so that plenty of light and air are admitted to the plants during growth.

There is no general rule for disbudding, every variety has to be studied in this respect—to commence to disbud some coarse-growing varieties, such as Champion Rollo, Royal Queen, &c., as soon as the bud appears, would make the flowers coarse the whole season, whilst all varieties should be sparingly disbudded at first by taking only one bud away, and then within three weeks of the exhibition the grower can choose the bud which is perfect, and will be likely to be in flower about the date of the exhibition, and remove all the other buds. Should the variety be a thin and small flower, then remove all the side shoots down from the bud to the stem; but should the variety be inclined to become coarse, only thin sparingly until a week or so before the show. This is most essential to a Show Dahlia. The soil should never be allowed to be dry at their roots from the time of planting; and I think I might here state that after the plants have been staked and tied out, the surface of the soil should be forked over, and the plants top-dressed with a good dressing of stable manure—this will keep the roots moist and encourage the roots to the surface to feed. Should the weather be hot and dry, the plants should be sprinkled overhead every night in addition to the watering at the roots, which at first should not be excessive, but sufficient to keep them moist and growing. Heavy watering should be commenced three weeks before the exhibition, as the plants will be sufficiently large to take plenty of water, and should be continued until a week previous to the show, the last week lightly sprinkling round the plants to keep them fresh and moist; too much water a few days previous to the show has a tendency to cause the flowers to shoot their petals after being cut for exhibition.

To protect the buds from earwigs, caterpillars, greenfly, thrips, &c., a muslin bag, 6 inches by 8 is best, and should be placed over the bud as soon as it shows colour. The bag should be fastened with bast or raffia round the stem of the flower, and must be taken off every morning to see if any insect has by chance got into the bag, and the flower examined to see if it is growing properly; and as the flower progresses the bag should be lifted every morning, so as not to check the growth of the flower. Shades are best made of a stout wire frame with a thick canvas covering, and should the weather prove very hot, a few leaves of Rhubarb should be laid on the shade over the full grown flowers. Shading should be commenced a week previous to the exhibition. Some tipped or light edged flowers are much improved by a flower-pot (24) placed over them on a table a week or ten days before a show, with a piece of glass over the hole in case of rain.

Exhibiting.

The stands on which the flowers are exhibited are usually painted green, and are made of one uniform width—viz., 18 inches, and should be supported by legs 9 inches at the back and 3 inches in front, holes being made to receive the flowers 6 inches apart, and for a stand of twelve flowers 24 inches long. In selecting blooms for exhibition, place deep circular flowers at the corners of the stand, and introduce as much diversity of colour as possible, selecting quality before size, a large coarse flower often spoiling what would otherwise have been a good stand. The perfection in a show flower should be fair size, globular form with good depth, the petals short and cupped, smooth on the edge, the outline a perfect globe, the centre high but not above the face of the flower, the centre should be close, and the petals radiating from the centre should expand by degrees; types of the most perfect flowers being Mrs. Gladstone, Bendigo, Joseph Green, and Sunbeam. The colour of a self should be bright and clear, of one uniform shade from the centre to the back petals; if an edged flower, the marking should extend round the edge of each petal. *Read at the Dahlia Conference, Sept. 6.*

Cultural Memoranda.

HYDRANGEAS.

Perhaps the decorative value of this plant is best illustrated by dwarf single stemmed specimens. These, when well grown, are very effective and useful for furnishing purposes. To have them in good condition for the ensuing spring no time should now be lost in putting in the cuttings, these small plants being always best when raised from cuttings annually. In selecting the cuttings, choose strong short-jointed points, with about three or four pairs of leaves, removing the bottom pair only. Insert them singly in small pots, and plunge in a moderately moist frame with but little or no bottom-heat; too much heat or moisture is apt to cause the leaves to fall prematurely, a result which should be avoided, as they assist the plants in making plenty of roots, and maturing a bud more likely to flower when they are started in spring; therefore, endeavour to retain the leaves until they fall naturally in the autumn. A good plan is to insert a small stake, and tie them up loosely by running a piece of bast round them. They can then be watered more freely without danger of their decaying, which they might do if allowed to lop about on the surface of the plunging material. At first they will require to be rather heavily shaded, but gradually discontinue it, as soon as it is found they will stand exposure, at the same time giving more air, until final exposure may be allowed towards the fall of the year, when the foliage will drop naturally; they should then be stored away in a cool-house, and kept comparatively dry, until it is desired to start them in spring, at which time they should be repotted and introduced into a growing temperature, when flowers should soon make their appearance with the young growth. Hydrangeas like a rich loamy soil, but for the cuttings it ought to be rather sandy. The common H. hortensis is best suited for these dwarf plants, but the small white variety (Thomas Hogg) might be included if smaller plants are desired. There is also a white variegated-leaved variety, which is very useful for brightening up masses of green plants. *F. R.*

Aristolochias for Pot Culture.

It is difficult to explain why the free-blooming Aristolochias do not find greater favour amongst growers. Although some hardier species grow and bloom but little, or not at all, the fact remains that such species as A. elegans (described and figured in the *Gardeners' Chronicle*, September 5, 1855), is a very beautiful and free flowerer, of not too rambling growth, and adapted for cultivation in pots; and although that most singular flowering species, the Bird's-head, or A. ornithocephala, is of such vigour as to attain to a height of 20 feet in its native land, it can be bloomed very freely, trained on a balloon in 12-inch pots. Both this species and A. elegans were staged at the exhibition of Weston-super-Mare last month. The form and markings of A. elegans are likely to promote it to the front rank of exhibition plants; and A. ornithocephala, with its larger blooms, can be similarly treated with marked success, which should give it greater prominence in the estimation of lovers of the extraordinary and beautiful.

Another remarkable species is A. ridicula, with its two backwardly ascending lobes, reminding us of the antennæ of a snail, and the whole plant covered with hairs. It blooms at every joint freely, once the energies of a plant centre develop into flowering wood; whilst the gaping A. ringens; the deciduous, or giant A. gigas; A. grandiflora, from Jamaica; A. tricaudata, and A. Duchartrei, exemplify a wealth of variety worthy the attention of gardeners. Though objection may be made to some of the species on the score of their objectionable odour, it was observed that A. elegans is free from the objection. Their culture is simple: pot into a mixture of peat and loam, with the addition of a little silver sand, and provided they are potted betimes, so that the roots take possession of the soil before growth is nearly finished for the season. It is of importance to place the plants in full sunshine, and to ventilate freely during the period of growth, as without this, the young wood will not become sufficiently matured to form flower buds. *William Earley, Ilford.*

PLANT PORTRAITS.

Adiantum tetraphyllum var. obtusum, *Illustration Horticole*, t. 86.—Discovered in Lower Congo by M. Auguste Linden.

Æchmea Drakeana, *Revue Horticole*, August 16.—A Bromeliad from Ecuador, with tuft of strap-shaped entire leaves, from the centre of which uprises a scape, bearing at its upper extremity a spike consisting of two rows of densely-packed flowers. Each flower measures nearly 2 inches in length; the ovate calyx is about half an inch in length, orange-crimson; the tubular corolla has a 3-lobed limb, and is twice or thrice longer than the calyx, clear blue.

Anguloa Clowesii, *Lindenia*, t. 191.—Venezuela.

Anthurium Scherzerianum var. Mlle. Lucienne Linden, *Illustration Horticole*, t. 85.—Spathe white, spotted, and blotched with crimson.

Cattleya Mossiæ var. Warsoqueana, *Lindenia*, t. 192.—Segments white, lip fringed with an orange blotch, streaked with crimson.

Cattleya Warscewiczii, *Reichenbachia*, t. 72.

Dietes Huttoni, *Garden*, August 24. A yellow Irid.

Lælia maialis, *Lindenia*, t. 190.—A good figure of this noble Mexican Orchid.

Odontoglossum Roezlii, *Reichenbachia*, t. 69.

Oncidium ampliatum majus, *Reichenbachia*, t. 70.

Renanthera Lowii, *Reichenbachia*, t. 71.

Stapelia marmorata, *Revue de l'Horticulture Belge*, September.

Stapelia mutabilis, *Revue de l'Horticulture Belge*, September.

Thunia Marshalliana, *Lindenia*, t. 189.—A beautiful species, with white perianth segment, and a lip with an orange-coloured blotch.

KÆMPFER'S IRIS.

Botanists tell us that these are only varieties of Iris lævigata, a statement which may satisfy the requirements of science, but not the gardener, for there is an immense difference between the two, for when we take the type of lævigata and compare it with the best Japanese Iris Kæmpferi, the great differences in point of size, substance of flower, and variety in colouring, can be seen at a glance. Moreover, the duplication of the petals to form a double flower, indicates a step further in development. These Irises seem conveniently to divide themselves into three groups—those in which the three outer perianth pieces or falls are much reflexed, and larger than the three inner or standards. This group is very similar to the lævigata type, only that we have seen Kæmpferis with flowers close on 12 inches over—a difference which, of course, is very important. The second group is the duplex flower, in which all the six pieces of the perianth are of about the same size, and all laying flatly on the same plane, giving the flower a nicely rounded, symmetrical appearance, and perhaps those Irises may yet acquire that ideal precision in form which is characteristic of florists' flowers.

The third group have their flowers much more double, owing to the essential organs having become petaloid. These have a massive appearance, and are the true double Kæmpfer's Iris. The colours are very varied and beautiful, the shades running from dark blue to the lightest lavender, many gradations of rose, salmon, purple, and mauve, to pure white. A conspicuous feature in those flowers is the lovely venation and mottled marbling, which are freely disposed throughout, and generally with a more or less distinctly lined yellow blotch on the claw of the petals. The Japanese seem to have made a specialty of this Iris, and to them we are indebted for most of the best forms which have been imported direct; indeed, several traders do quite a large business in these plants—perhaps no one more so than Mr. W. Gordon, of Twickenham, and from whom we recently had the pleasure of inspecting a fine batch of flowers, amongst which were noted as being good:—Kaiser Wilhelm, a grand flower, bluish-purple or dark heliotrope, mottled and veined, shading to lilac in the centre—a duplex flower; the New Emperor, large fine full flower, purplish crimson, standards lighter blue, both flaked and splashed with lighter and darker colours; James Flood, a bold, large flower, rich claret, with a finely veined yellow centre blotch; Chevalier, a dark bluish purple, with inner petals greyish-lavender, finely veined with white; Lady Grant Duff, a rich purple, splashed with light lavender, white, conspicuous yellow claw; James O'Brien, fine maroon-purple, mottled and splashed with white—a good double flower; Grand Lilas, violet, striped, and veined and suffused with light blue at the base; Gloria Mundi, reddish-brown and white, shading to purple, and suffused with lavender; Boule de Neige, a fine three-petalled, white, nice lemon-yellow blotch on the claw; Dorothy, a large three-petalled white; Dora, nearly white, but distinct from the preceding; Violet Queen, a very neat flower, whitish, deriving the name from the dark violet centre petals; Alba compacta, a fine pure white flower; Exquisite, a very double flower, a white ground, heavily striped with purple and violet—a grand flower. These are the names of a few which seemed to me to be the most striking at the time, but no doubt there were others equally meritorious; and even some unnamed flowers were not to be despised—indeed, I have seen mixed batches of seedlings with very fair flowers amongst them. Only quite recently, I saw a fine bed of such at Burford Lodge, Dorking, where, by timely watering, and attention in other details, excellent results were attained in a rather unpromising soil. That these Irises can exist in a variety of situations and soils I have had ample opportunity of observing, but they are found to do the best when treated as bog plants, not exactly aquatic treatment, but simply that the water-level shall be only about a foot below the surface of the soil in which they are planted. The soil itself should be of a rich alluvial character, and to which decayed manure may be added at the time of planting. As to the planting itself, the root-stock should only be just under the soil; but as they are apt to get injured in winter when this is too much exposed, I have found it good practice to mulch the beds lightly with leaf-mould, or some similar material, and this top-dressing assists growth wonderfully.

After repeated mulchings, should the beds get too high, the plants are benefited by being replanted, trenching and manuring the ground at the same time. This operation also offers the best and readiest opportunity to propagate any special varieties. As seeds do not always come true to the original characters, and moreover, take two years to arrive at the flowering size, division of the roots, if it be carefully done at the end of September, is a better way, as these small pieces will flower next season just as well as if they had not been broken up; but I have received imported roots in February which have flowered well the same season. However, I have found early autumn planting and division the best. As was before said, a good deal of success depends on the situation in which they are grown; but where there is water at command, they may be grown as easily as our common yellow water flag. They have a splendid effect when planted in masses along the margin of a lake; but they can be equally well grown, if the necessary steps are taken, where the water supply is limited, by constructing islets; and there are very few gardens where this could not be done. The water-way need not be wide, nor the volume of water large—merely sufficient to percolate through and moisten the mass of the islets. When grown in this way, it is advisable to trench the soil at least 2 feet deep; and if the subsoil is poor or of an unkindly nature, to remove it, making up the bed with peat or leaf-mould, well mixing the whole. Under such conditions, success would be all but a certainty; and I feel sure no one would ever regret having taken a little extra trouble in securing success in the cultivation of this plant—undoubtedly the king of Irises.

Independently of their beauty, these Irises flower in summer after the other Irises have passed away—a fact which ought to be an additional inducement to those who have not yet taken up their cultivation, and who desire beautiful flowering hardy plants in summer. Although they like an open position, yet slight shade is not prejudicial, if this be caused by distant objects, but is rather advantageous than otherwise, as also is shelter from strong wind, the flowers lasting much longer. *F. R.*

New or Noteworthy Plants.

PODOPHYLLUM PLEIANTHUM, *Hance, n. sp.*

This is a most remarkable new introduction (fig. 44), different in every respect from the others in cultivation, and promising fair to outstrip even the very beautiful P. Emodi, which is probably the most common of the species yet in cultivation. With regard to the present plant, the late Dr. Hance says:—"Although during the past twenty years I have been able to add no inconsiderable number of species of various plants to the Chinese flora, it is doubtful if it has often been my good fortune to record a more interesting discovery than the above. Specimens were first sent by Mr. T. Watters, H.M. Consul at Tam-Sui, in the spring of 1881." Again he says:—"The occurrence of Diphylleia and Caulophyllum in Japan and Sachalin, and of Jeffersonia in Manchuria would, of course, have prepared us for the present discovery. Although agreeing in its isostemonous flowers with the well-known P. Emodi, the present is otherwise as distinct from that species as the American one. The leaves have a curiously subulate toothed margin, and quite shallow lobes. They are peltate, orbiculate, 6 to 8-lobed, the lobes triangular acuminate. Dr. Hance does not say whether P. pleianthum has any economic uses in Formosa similar to P. peltatum, the May Apple of the United States, where the fruit is eaten and a purgative resin prepared from the rhizome. *D. D.*

Eulophia callichroma, *Rchb. f.**

This species has been recently introduced from the Zambesi region by Mr. James O'Brien. It is not an attractive species, in spite of the name given to it by Reichenbach; but on examination of the type specimens, I find that he was misled as to the colours being purplish, white, and green, owing to what is evidently a misplacement of one of the labels, as the label with one of the specimens states the colour to be "yellow," which is nearly correct, as they are light greenish-yellow; the other label which is the one Reichenbach quotes, has on it, "Mesoch. purplish, bordered white, epi and hypoch. green," which clearly shows that that label must by some accident have been misplaced, as the lip of E. callichroma is remarkable as being almost entire, there being scarcely a trace of the usual three-lobed character in this species, much less any distinction of hypochile, mesochile and epichile. The pseudobulbs are erect and moderately stout, and produce flowers and leaves at the same time. The leaves are a foot or more long, linear, ⅛ to ¼ inch broad. The flower-stem is 1 to 2 feet long, simple or branched, with long racemes of small flowers, entirely of a light greenish-yellow colour, except the crests and margin of the lip, which are white; all the segments are narrow, the sepals and petals being linear obtuse, about 5 lines long, and the lip linear-oblong, crenulate at the apex, with about six, very slender, crested keels. The spur is slender and nearly 3 lines long. *N. E. Brown, Kew.*

* *Eulophia callichroma*, Rchb. f., *Otia. Bot.*, Hamburg, p. 116.

The Herbaceous Border.

ERYNGIUM OLIVERIANUM AND OTHERS.

The few Eryngiums in common cultivation are much confused in the naming. Perhaps the finest of them is E. Oliverianum of Laroche. This is not known anywhere as a wild plant, but was raised from seeds brought from the Levant, and is considered by E. Boissier (*Flora Orient*, vol. ii., p. 829) to be certainly a hybrid, and he names as its probable parents E. giganteum and E. planum. I find that it rarely produces a fertile seed. If the parentage is rightly given by Boissier, it is curious that the radical leaves instead of being entire, as in both the parents, are deeply three-cleft, being generally divided quite to the base. It is the earliest Eryngium to flower with me, and the heads and upper stalks are always of a rich amethyst colour. It is often sold in nurseries as E. amethystinum. The true E. amethystinum of Linnæus, from the Alps of Germany and Italy, is a plant of much smaller dimensions, growing not more than half the height of the last, the heads being round, and hardly half an inch in diameter, with very long narrow involucral leaves; the heads and upper stalk are of a bright amethyst colour; the lower leaves are long, hard, spiny, and much dissected, and the growth of the plant much branched and bushy. I have seldom seen it in cultivation. The commonest of the small-headed Eryngos, and a very ornamental plant, is E. planum, a plant native in the south-east of Europe, and perfectly hardy. It has smooth, nearly round, radical leaves, on long stalks, with a heart-shaped base. The stalk rises erect, and divides at 2 or 3 feet from the ground into a branched corymb of many lavender-coloured heads, which continue flowering for several weeks. E. alpinum, as figured in *Bot. Mag.*, tab. 922, with blue heads, I have never seen. The plants sent me under the name from the Alps, have always had ivory-coloured stalks and heads, though I believe they are true to species. The heads are large and few, and except by its dwarfer growth—the heads never being more than three on a stalk—it might be E. giganteum, a Caucasian species, which is far commoner in gardens. This, although called perennial, generally dies after flowering, and seedlings come up in abundance round it, which flower the second year. It is said that in its native place it bears blue heads, but in England the heads are generally grey, with hardly a tint of blue. Another hardy Eryngo, E. Bourgati, a Pyrenean species, is worth cultivating for its elegantly variegated foliage, the marks being almost as distinct as they are in the Milk Thistle. *C. Wolley Dod.*

Herbaceous Plants.

Although most of us have railed about the weather and the unfavourableness of the season, it has evidently suited herbaceous plants and most hardy perennials, for never before do I remember to have seen them so fine and full of flower; and although the general class of "bedders" have not blossomed freely, borders have been very gay with the grand show the first-named have made. Among the most conspicuous, Phloxes may be mentioned, and these have stood out boldly, the frequent rains and cool atmosphere having enabled them to send up stout stems and big trusses, that have continued to open their buds and give a long succession of bloom. If the

wet has spoiled or injured this one day, the heads seemed just as full the next, or very soon after; and in Ipswich, at the Messrs. Gilbert's nursery, I saw a bed of white Queen from which a cartload of flowers might have been cut, and a man could easily have hidden among the plants without being seen, so tall and luxuriant were they in the growth they had made. Another plant that appears to delight in a wet summer is the Rudbeckia Newmani, as the more it is wetted and washed, the brighter and fresher it looks. This is a great favourite of mine, and is, I think, one of the most effective things anyone can have in a border, as its bright yellow petals, and the contrast they afford with the dark velvety disc, are very telling, and the flowers are of much service for cutting. The Helianthus, too, such as H. multiflorus, are invaluable, as no amount of rain harms them, and they are very telling in the foreground of shrubs. The single form is preferable, as the double kind is too heavy and lumpy in appearance, and, therefore, is not so dressy in glasses when cut. To come in before this Sunflower, Helianthus (Harpalium) rigidus is the thing, and this no garden should be without; nor is there much fear of that when once planted and started, as its growth is strong, and it spreads by sending out large creeping roots that throw up suckers or young stock around the old stool. These show themselves early in spring, and may then be dug up and replanted; but they should have the ground prepared by deep digging, and a dressing of manure worked in. Michaelmas Daisies are just coming on, and these Asters are also wet weather plants, the best among them being A. bessarabicus, the flowers of which are large and high coloured. This Aster only grows about 2 feet high, and has stout stems that branch out freely, and produce a great quantity of bloom in succession. *J. Sheppard.*



Fig. 44.—Podophyllum pleianthum: reduced. (see p. 298.)

Florists' Flowers.

THE HYACINTH.

The Dutch bulbs are now being received, and in a few weeks we shall be engaged in potting the general collection. Those who have grown these bulbs for a long period of years, will be able to verify the marked improvement which has taken place in Hyacinths from Holland. The exhibitions in London and other towns have afforded the means of sowing useful information far and wide as to the best methods of culture necessary to obtain large and handsome spikes, together with the names of the best varieties to cultivate. Many persons who have visited the garden under my care when the Hyacinths have been in bloom, and noted the quality of the spikes, have said, "Oh! it is all very well to grow such spikes for exhibition, but we only want the ordinary varieties to make a display in the greenhouse or conservatory." This is altogether a wrong assumption, and I have pointed out to those who entertain it, that it is just as easy to grow good as inferior varieties, and, as a rule, there is not much difference in the first expense; and, moreover, it may be assumed that those varieties which are best adapted for exhibiting, are the best for the garden and the greenhouse.

The Dutch growers find the difficulty also, in getting their customers to purchase the more modern and better bulbs in place of those that are older and inferior. When I first exhibited Hyacinths at shows, the best dark blue to be got for a reasonable price was Baron von Thuyll. King of the Blues, considered now the best of the dark blues, was so scarce, that I had to pay as much as a sovereign for one bulb. Now it can be bought for ninepence a bulb. In white Hyacinths we had to grow Alba maxima and Mont Blanc, until a La Grandesse appeared, which was sold at about the same price as King of the Blues was at first; now it can be bought for tenpence. Vurbaak is the best crimson Hyacinth, but it is still rather dear; it is, however, an immense improvement in colour and length of spike on Robert Steiger. The lists of show varieties given in the *Gardeners' Chronicle* are likewise, without doubt, the best to grow for general garden purposes. The price will not often be an obstacle in most instances. The better varieties, such as Fabiola, pale rose; La Joyeuse, rosy-pink; Cavaignac, pink; Charles Dickens, rose, with carmine stripes; Solfaterre, orange-red; Von Schiller, salmon-pink, striped crimson; and Queen of Hyacinths, rosy-scarlet; are not dearer than some of the very old ones.

The same remarks apply to white and blue Hyacinths. Next in quality to La Grandesse, just mentioned, is Mont Blanc. Baroness Van Zuyll, a sport from the blue variety; Baron Van Zuyll is distinct, and produces a long, though not massive spike. Grandeur à Merveille was the best blush variety until it was displaced by Princess Amelia. I have already named the best dark blue. Others are Marie and Souvenir de J. H. Veen, both distinct and good. The best of the blue-blacks are Sir H. Barkley and General Havelock. The new pale blue varieties are far in advance of the old well-known Grand Lilas, the best of them being Czar Peter and Lord Derby; but the newer Princess Mary of Cambridge is distinct and good, and should be included. The newer yellow Hyacinths are still rather expensive. Ida is the best of them, but it is a primrose-coloured bloom at first, and changes to straw colour as it advances. I do not grow many double-flowered Hyacinths, but this year I purchased Lord Wellington, rosy-blush; Princess Dagmar, bright red; Charles Dickens, dark blue; Laurens Koster, indigo-blue; Van Speyk, pale blue; Koh-i-noor, the best of all double Hyacinths, and of a beautiful salmon-pink colour. The above list of names is not a long one, still it will be found to include the best flowers in the various classes, most, if not all of which are to be bought at reasonable prices.

The cultivation of the Hyacinth is very simple. The soil (if possible) should be prepared about two months before it is wanted, and it should be light and rich; the object in getting it ready so long beforehand being to thoroughly incorporate the manure and the soil. A compost of two parts loam, one leaf-mould, one decayed manure, and one of river sand, is what I have used for many years, and it will be found to answer admirably. If we were to imitate the soil of the Haarlem bulb fields, it would consist, at least, of one-half sand. There is no need to use very large pots, and to do so is an error some growers are apt to fall into. Some varieties have much larger root-stocks than others, and produce a larger mass of roots, and so I place these larger bulbs in 6-inch and the smaller ones in 4½ and 5-inch pots. The planting of the bulbs is of some importance; those who have been successful in bulb culture or indeed in any branch of gardening, have given careful attention to the most minute details of their work. Some persons take their bulbs and press them down into the soil, causing the material to be very firm just underneath the bulbs, or at least firmer than that surrounding them, the roots push out rapidly and altogether, with the result that they cannot freely penetrate the soil, and the bulbs are pushed up out of the soil. The right way to pot a bulb is to make a hole in the soil with the fingers, and put the bulb into it; place a little clean sand about it; the soil should then be pressed moderately firm around the bulb, leaving the crown just above the surface. After the bulbs are potted, place them out-of-doors on a hard, well-drained bottom of coal-ashes, and cover the pots to a depth of 4 inches with cocoa-nut fibre refuse; and here they must be left until roots are formed. The bulbs may at any time be potted from the present until the first week in November, for early and late flowering.

When those which are intended to be forced are

taken out of the cocoa-nut fibre, they should be placed in a cool-house for a few days, and then put into a mild warmth to begin with, after a time giving additional warmth. Always keep them near to the roof of the house, as when they are placed at a distance from it, or shaded by other plants they cannot produce satisfactory spikes. *J. Douglas.*

COLONIAL NOTES.

NEW ZEALAND.—In a previous note, I gave a few observations on the climate and the appearance of our public parks and gardens in our summer season, which commences in December. Winter has now fairly set in, a great change having taken place in the weather since the commencement of the present month, June (corresponding with December in Great Britain). In Auckland we have had but one slight frost; but from the South news reaches us that severe frosts have been experienced at Dunedin, Timaru, and Ashburton, where frosts, lasting for six nights threatened to cut off the water supply to the towns. Skating on the ice has been freely indulged in, and the north part of the Ashburton River has been frozen over; this is said to be the first time such a thing has been known. By news received on the 19th inst., a thaw had set in.

After a lovely day here on June 7, the barometer began to fall rapidly, and on June 8 registered 28·9, the lowest reading recorded for the past twenty-two years, being a full degree lower than the glass denoted at Samoa during the terrible hurricane in March last. Throughout the day, June 8, a gale of wind from the north-west blew fiercely, accompanied at intervals by heavy squalls of sleet and rain. Fortunately the storm was not so severe as the warning indicated by the barometer would have led us to expect.

Meteorological observations recorded at Auckland for June are as follows:—Mean temperature in the shade, 51°.7 (previous twenty-one years, 53°.3); maximum temperature, 63°; minimum temperature, 39°. Total rainfall for month, in inches, 3.030 (average for same month previous twenty-one years, 4.774). Number of days on which rain fell, nineteen (average for previous twenty-one years, twenty-one).

The present is our worst season for flowers, Chrysanthemums and Dahlias being now over. The following are the principal kinds in bloom, Tecomas, Daturas, Habrothamnus, Proteas, Laurustinus, Daphnes, Plumbagos, Bouvardias, Epiphyllums, Acaias, and Durantas; the latter, D. Plumieri, bearing blue, and D. Ellissi white flowers, are useful shrubs, both when in flower and in berry—the latter of an amber-like yellow colour, borne in great profusion, are very attractive. Both these plants are largely used for hedges in many parts of India, for which purpose they answer exceedingly well when properly pruned. Camellias, which are largely cultivated in suburban gardens, are now coming into bloom, and promise a good display. Some of the leading horticulturists are taking preliminary steps to organise a show of this popular flower during the coming spring, on the same footing as the Chrysanthemum show recently held here.

The greater part of the trees growing in the vicinity being evergreen, the signs of autumn's reign and the approach of winter is less noticeable, owing to the absence of the gay colours of decay of the leaf, than is frequently seen in parks at home, where the Elm, Oak, Beech, and other deciduous trees present some beautiful pictures, especially at sunrise and sunset, when the leaves are gradually ripening off before affected by severe frosts. I well remember how my attention was arrested by some such pictures seen in parks in different parts of Essex, Kent, and Dorset, in the autumn of 1885; sights scarcely felt by those familiar to the views, but very attractive to visitors, especially so to one like myself who had been absent from England some ten years.

The grandest effect I ever saw produced by various tints on trees was in the Punjaub, India, in the autumn of 1883, when the strange coloured effects—and unusual brilliancy in the sky at sunrise and sunset—was a subject of general remark among both Europeans and natives. I heard several strange theories given by the latter as the probable cause of the unusual phenomena, which, I believe, was observed in many different parts of the world. After sunset, and when daylight had departed, a peculiar lurid glow of red, orange, green, and purple, appeared in the sky, passing through various tints to a delicate pink before finally disappearing, sometimes not until a late hour. The effects produced by these brilliant colours on the foliage of several kinds of trees, then ripening their leaves, viz., the Chinese Tallow tree (Stillingia sebifera), several species of Rhus, Bassia, Salix, Croton, and others, with, in places, a background formed with the dark green foliage of clumps of Mango trees, the stately Date Palm, viewed from an elevation to which, for the purpose, I ascended, was as grand a picture as is seldom seen.

In my opinion, the appearance of what is known here as the Western Park would be much improved by the introduction of more ornamental deciduous trees and shrubs; the large proportion of closely-planted Pines gives the park, especially at this season of the year, a very sombre appearance.

In to-day's *New Zealand Herald*, a proposal is being ventilated to take steps to organise a fruit exhibition, to be held in Auckland next year, with a view to showing what can be done here in the way of fruit culture, and to impress upon the people the value of developing an industry capable of almost unlimited extension. It is also proposed to hold at the same time a convention of fruit growers to discuss all matters pertaining to the industry, and, if possible, to form a fruit growers union similar to what they have in California. The following are included in the wide range of subjects for discussion: The best varieties of fruit to grow, how to pack the fruit, markets, canning of preserved fruits, dealing with fruit pests, wine and cider making, &c. Fruit-growing readers are invited to express their views upon the above proposal through the columns of the *New Zealand Herald*. Among experimental fruit culture in this district, the Prune tree has lately been attracting some attention. The result of the experience of one cultivator, who has both grown and cured the fruit, is hopeful, and gives encouragement that it is likely to be the foundation of a large industry in the near future.

This being the midst of the planting season, the Auckland nurserymen are drawing the attention of intending planters to their stock by the issue of catalogues of supplementary memoranda, containing the latest additions to their fruit trees, ornamental shrubs, shelter trees, &c. Some of the more recent introductions I will notice at a future time. *Edgar Spooner, Auckland, New Zealand, June* 22.

NOTICES OF BOOKS.

A HANDBOOK OF CRYPTOGAMIC BOTANY. By A. W. Bennett and George Murray. (Longmans, Green & Co.)

"In traversing so wide a field it is impossible that a single worker, or even two, can be practically acquainted with more than a comparatively small portion of it. It is necessary, therefore, to consult a literature, the extent of which, even for a single year, is appalling, and in which it is often difficult to distinguish between trustworthy and untrustworthy observations." This statement, with which the authors preface their work, is so true that we are at the very outset compelled to express our acknowledgments to the authors for even attempting the task. Not only is the field wide, but much of it has been unsurveyed, and where it is otherwise, the number of surveyors is very large, and their methods not always comparable.

This latter point has in the past, and still offers a terrible obstacle to the student, and perhaps even a more formidable one to those botanists more or less familiar with other departments who wish to refresh their knowledge of cryptogamic botany to keep pace with its progress, or even to gain a general idea of the tendencies and scope of modern research. To a certain extent the difficulty is undoubtedly inherent in the subject itself. New methods of study are being discovered, and the results of these open out new views of life and structure, the details of the new are not, except in a general sense, comparable to those of the old, and hence new expressions, a new terminology, a breaking-up of old land marks, a fluctuating and uncertain laying down of new boundaries. Until the whole course of the life-history of each organism is fairly well known, and adequate comparison between different forms is thereby rendered possible, cryptogamic botany must needs be more or less chaotic. Admitting all this, and admitting also, as we are bound to do, the brilliant and persevering efforts of many naturalists to bring order out of confusion, we can, nevertheless, not avoid the conviction that much of the difficulty lies at the door of the cryptogamic botanists themselves. Compared with the system and method adopted by their colleagues, who have to deal with flowering plants, the procedures of the cryptogamist seem comparatively destitute of law and order. The law of priority, and the desirability of making oneself acquainted with, and of taking into account what has been done by our predecessors, is less well understood or acted up to; individual workers become a law to themselves, apply new terms of their own invention without consideration or with relatively little necessity, or they employ old terms in a novel sense, and specially they shrink from any attempt at a definition, even an arbitrary or artificial one. Let us suppose a reader, with some previous knowledge of botany, desirous of knowing something of the characteristics and limitations, say of Orchids or Composites, a single paragraph in any text-book will give him what he requires. Often the desired information may be summed up in two or three lines. On the other hand, let him turn, say to the Hepaticæ or indeed any of the groups in one of our leading modern text books, and he will find a treatise of many pages, with elaborate details and full descriptions, but with no general comprehensive and comparative statement or summary whatever. This has to be elaborated with pain by the unfortunate reader, whose difficulties are thus needlessly and enormously increased.

Inadequate historical research, (which cannot be charged against the present authors), want of arrangement, absence of condensation, and a deficient sense of proportion in the treatment of details, these are features unpleasantly prominent in many of the books on Cryptogamic botany, and on histology, especially in German books; and this is true of books written by no inferior hand, but by the acknowledged leaders in their several departments. The sooner the method followed in Phanerogamic botany is adopted, and the general usage and practice of botanists conformed to, the more rapid will be the progress of Cryptogamic botany.

The authors of the volume before us have evidently appreciated the necessities of case to some extent, for they contrast the higher Cryptogams, which are so well known, that something like finality is arrived at in their classification, with the lower groups, where the imperfection of our knowledge is such that at the best only provisional arrangements are possible. That will be granted of course, but let us have the provisional arrangements. Let us have a Linnean system till a Jussieuan one becomes possible, and even then let us have our artificial system as a convenient index to the more philosophical arrangement. Turning, as before, to the Hepaticæ, where surely it would not task the ability of two such eminent botanists to frame a definition that would be adequate for the purpose, we find sixteen pages devoted to the explanation of their organisation and life history, and those of the subordinate groups, but an absence of any such summarised and comparative statement, as in this case, at any rate, we have a right to expect. But the present volume, consider-

ing the enormous difficulties of the task, is so useful, so great an advance upon anything we had before (Berkeley's *Introduction to Cryptogamic Botany* was published as long ago as 1857) that we are not at all disposed to find fault, or even to criticise. There is, indeed, little to find fault with, while critical discussion here would be out of place. A few neologisms are introduced, and a laudable attempt is made to introduce uniformity and symmetry in the nomenclature of "spores." We fear, however, the use of macrospore is too ingrained by custom ever to give place to the more correct megaspore; and the corresponding terms "macrocarpa," "macrophylla" are in such general use that we fear it is useless to attempt to displace them. To those desirous of obtaining a general knowledge of the several groups of Cryptogams, together with their life-history, which is in the present state of science of such transcendent importance, this excellent book is indispensable. It is well printed, well illustrated, and has a full index. All that it seems to want is a systematic synopsis and a glossary of terms. These can be readily supplied in that new edition a demand for which is sure to spring up at no distant date.

Le Petit Jardin.

M. Bois, an assistant in the horticultural department of the "Museum" in Paris, has published through M. Baillière fils, a useful little book on gardening for amateurs, beginning with tools and ending with cockchafers, the intervening space being filled up with chapters relating to the soil, to manures, frames, greenhouses, cultural operations of all kinds, landscape art, and so on. The largest part of the volume is, however, occupied with a brief description of the trees, shrubs, and flowers used in gardens, arranged alphabetically. The information, so far as we have tested it, appears correct and judicious, and it has the great merit of conciseness and clearness.

The Orchid Houses.

Work in the Houses.—Catasetums, Mormodes, Cycnoches, Galeandras, and allied plants, as they make up their growths to the full size, and begin to show by the fading of the leaf that their resting season has arrived, should be put away on a shelf or some part of the house which is unshaded, and where they may be kept cool (say 50° to 60°) and dry until they show signs of again starting into growth. These singular plants are always thought much of when in bloom, but with many they have the character of being bad doers, and consequently are avoided. No section of Orchids, however, is more easily grown when once the proper culture is understood. In order to make the matter intelligible to all, I need only say that they require to be treated just like deciduous Dendrobes, D. Wardianum, &c., and, like them, have a distinct season of growth, and as marked a period of rest, in some dry, cool quarter, after the growths are completed. Coming, as they do, from various latitudes, all the species do not finish their growths together, but if put away to rest—say with the resting Dendrobes, it is easy to remove them there as soon as they are ready. If left mixed up with the general collection when at rest, these Catasetums, &c., invariably deteriorate. All the sunlight it is possible to allow without injury to the plants should be admitted to all the houses from henceforth, and especially on Cattleyas, Lælias, Barkerias, and intermediate-house Oncidiums, &c.; but Phalænopsis, all evergreen terrestrial Orchids, and the Odontoglossums, should be carefully shaded when the sun is powerful. *J. O'B.*

The Flower Garden.

Fuchsias in Bedding Out.—Recent correspondence would lead one to infer that the use of these in the summer flower garden was of recent origin, but that is not so, as, for at least 20 years, they have occupied a large place in the bedding arrangements at this place, and many others, and have always been very satisfactory, either used in masses, or singly, in beds of dwarfer plants; and at this season we have no flowering plants at once so pleasing or graceful as these, of large beds that are well filled, and especially if these were with Violas of various colours; moreover, the shade afforded by the Fuchsias is of benefit to the latter. Fuchsias are grand subjects wherewith to form pyramids in nooks and corners where there is a background of shrubs, or a creeper-covered wall, and I know no flowering plant that is better adapted for planting as single specimens on the lawn, or beneath the shade of trees; many varieties, in fact, need shade, and about the best proof I can give of this are some plants at Dropmore that I saw a few days ago—large specimens, from 5 to 8 feet high, with heads proportionally wide, and flowered to perfection. These plants are growing beneath the shade of Limes, Oaks, and Firs (of course not contiguous to the roots), and they are about as fine specimens as any I have ever seen. I was much impressed by their beauty, and by their appropriateness in a small flower-garden, partially shaded, and wholly surrounded with trees.

Potting-up Plants and Propagation.—The colder nights show the advisability of potting all bedding plants struck in the open, and affording them the shelter of cold frames, &c. Till fresh roots are made, keep the lights on in all weather except during warm sunshine. Tender kinds of plants in dung frames, and which are not yet rooted, must be covered up at night, but as soon as they are rooted remove them to the drier atmosphere of shelves in Melon-pits or Pine-stoves.

Calceolarias, Violas, Pansies, Leucophytons, Gnaphaliums, and nearly all kinds of succulents, strike and winter well in cold frames, and it is now high time that the cuttings were put in. When the making of cuttings of plants which need protection in winter is finished, the hardy plants employed for edgings and the ground-work of beds should be propagated. I know this is not usual, but the old roots are split up at planting time in the spring, and this way sometimes answers fairly well; but the results do not bear comparison with those obtained by employing young plants. The best way is to prepare a border in the kitchen garden by digging in a fair amount of leaf-mould, and, after rolling the ground, to plant small pieces of the desired plants in straight lines at 3 or 4 inches apart, and a couple of inches between the cuttings. When planting is finished, run the roller over the plants, and no more care will be necessary till frosts have partially heaved the plants out of the ground, when another rolling will be needed. The plants we raise in this way are the dwarf Sedums, Saxifragas, Veronica incana, Antennaria tomentosa, and Hermaria glabra.

General Work.—Keep flower beds carefully picked over, and foliage and the seed-pods removed from Dahlias, and all tall plants closely tied to the stakes. Roses also should be kept free of bad flowers; they are flowering well again now, and will repay any little attention that can be afforded.

Gladiolus and Lilies that are to be lifted should be labelled ere their stems die off, and note should be taken of any seedling Dahlias that may be worthy of preservation. Preparation ought now to be made for the transplanting of shrubs; after the first heavy rains we shall make a beginning. It would be folly to attempt the work while the soil is so dry, as that would mean a lot of watering. *W. Wildsmith, Heckfield.*

Fruits Under Glass.

Peaches.—Houses in which late fruit is ripening require a little fire-heat in dull wet weather, and plenty of air should be kept on when fine. See the fruit is well exposed to the sun; keep a good look-out for mildew, and apply sulphur on its first appearance. Where the fruit has been gathered from the trees, remove all the shoots not required for next season's fruiting, shorten back a little all the strong growing ones, and do not tie in too closely. I always find the wood ripens better when allowed to hang about loosely; a little fire-heat may be necessary in dull damp weather, to help the ripening. The early houses should be kept cool as yet.

Tomatos.—If planted or potted as advised last month, these will now be making strong and free growth, and showing fruit; train them to a single stem, giving plenty of air when the weather is fine and mild, and in dull wet weather a little heat will be beneficial.

Strawberries should be constantly looked over for weeds and runners, and the pots being full of roots, a plentiful supply of water will be necessary. Keep them a sufficient distance apart, so as to allow free air.

Melons.—In the houses where the late fruit is ripening, plenty of air should be kept on when the weather is favourable, and more or less fire-heat will be required to get good flavour; not so much moisture will be required in the atmosphere as was the case earlier in the season, but, at the same time, the borders should not be kept too dry. *W. Bennett, Rangemore Gardens, Burton-on-Trent.*

The Hardy Fruit Garden.

The present is a good time to take notes of the different varieties of fruit trees best suited to the locality. A visit to a good fruit nursery at this season of the year is always interesting, and the newer kinds may be seen growing in quantity, so that an idea of their merits may be formed. Here we have no varieties which for regularity in cropping surpass Grenadier, Ecklinville Seedling, Cox's Pomona, Lane's Prince Albert, and Potts' Seedling; the latter grows exceptionally fine on cordons. As the best time for planting will shortly be at hand, no time should be lost before getting everything into order for carrying out the work. It is of the greatest importance in early planting to keep the roots out of the ground as short a time as possible. The soil which is to be used in planting and root-pruning, and the lifting of any of the Peaches, Pears, &c., should be mixed up in readiness. To follow up the Williams' Bon Chrétien Pears, some of the next early kinds should be gathered, and placed in a proper place to ripen. We find Madame Treyve and Triomphe de Vienne two good varieties for that purpose.

See that the walls and shelves of the fruit-room for the reception of the autumn stores are thoroughly clean and sweet. A good brush down of the walls, followed with a lime-wash, and the shelves well scrubbed with clean water, to remove any decay or mould, is advisable. *H. Markham, Mereworth Castle, Kent.*

The Kitchen Garden.

Cabbages.—In general, the brake on which the spring Onions grew, is that planted with early Cabbages, and if it has been well manured no more dressing will be required unless the soil be very light, sandy, or stoney; in heavy soils it is rather injurious. That portion which was occupied with shallots and transplanted spring Onions may be simply hoed, raked, and planted with Ellam's Early Cabbages, at about 9 inches apart each way. Enfield and larger growing varieties may be planted at a distance of 1 foot each way, and both to be cut out in winter as Coleworts, so that in spring they would stand respectively at 18 and 24 inches apart. Do not let the plants get crowded in the seed beds before they are planted out, or they will make little or no progress for a long time afterwards, and will be less able to withstand frost. It is better to prick out the seedlings into nursery beds for a few weeks, and by this means secure a large ball of roots at transplanting time. Plant them with a trowel. Some plants of Ellam's and Stuart and Meins No. 1 should be allotted a warm sheltered spot on a rich border to secure an early cutting. Continue to plant Coleworts as ground becomes vacant, and these we plant at 12 inches apart each way.

Ply the hoe amongst young crops until such time as the leaves of the plants meet. Where pressure of other work has prevented the destruction of weeds, no time should now be lost in getting all the quarters and walks thoroughly cleansed.

Cardoons.—These plants, to prevent them bolting, should have soakings of manure-water and clear water, and a few of the most forward plants should be tied up to blanch. This is best secured by tying up the leaves closely together with bast, then some stout brown paper, in three or four thicknesses, may be rolled round them, and a covering of straight straw to the thickness of 3 inches, may be put around this, and secured by tar ties; and further, two boards should be so fastened as to form a ledge, to prevent the lodgment of water in the hearts of the plants. Too many plants should not be tied up at one time, as they do not keep long after they are fit for use. *W. M. Baillie, Luton Hoo.*

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETING.

TUESDAY, SEPT. 17 — Royal Horticultural Society: Fruit and Floral Committees.

SHOW.

FRIDAY, SEPT. 20—Manchester (two days).

SALES.

MONDAY, SEPT. 16 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Greenhouse Plants, &c., at Dyson's Nursery, Upper Edmonton, by Protheroe & Morris.

TUESDAY, SEPT. 17 — Heaths, Greenhouse Plants, &c., at the Burnt Ash Lane Nurseries, Lee, S.E., by Protheroe & Morris.

WEDNESDAY, SEPT. 18 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Heaths, Stove and Greenhouse Plants, &c., at the Lea Bridge Nurseries, Leyton, E.

THURSDAY, SEPT. 19 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Stove and Greenhouse Plants, at the Brunsdown Nursery, Enfield Highway, N.

FRIDAY, SEPT. 20 — Established and Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 21 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—57°.2.

British Apples.

THE Apple Congress of 1883, held at Chiswick, was in all ways the most successful and practically important of the series of similar meetings held of late years, under the auspices of the Royal Horticultural Society. It enlisted to a remarkable degree the sympathies not only of professional gardeners, but of the public also. This was shown by the circumstance that the Report of the Committee, edited by Mr. BARRON, was speedily exhausted, and copies are now not to be had. The success of this Congress was so great, that last year it was determined to hold a second meeting of the kind on somewhat different lines. In 1883 the object was to get together as complete a collection as possible, with a view to settle the nomenclature, and arrive at some estimate of the worth of the varieties. Last year selection rather than collection was the main object, and an endeavour was made to get together a representative collection of the sorts best adapted for particular localities and particular purposes.

As a result, 236 exhibitors in all parts of the country sent specimens of their produce, no fewer than 10,150 dishes being exhibited, of which 913 came from Kent, and 908 from Middlesex. The number of varieties noted as presumably distinct, amounts to the large total of 1445, the names and synonyms to 2020, figures which will give some notion of the labour that devolved upon the judges and scrutineers.

Details relating to the locality, soil, stocks, and method of cultivation were supplied, together with estimates for each county, of the sorts best suited for market, culinary, and dessert purposes. An immense mass of material was thus secured, which has now been published by the Royal Horticultural Society, under the editorship of the zealous Secretary, Rev. W. WILKS, and the no less energetic Treasurer, with the assistance of Mr. BARRON, the Superintendent. The statistical details prepared by Mr. BARRON for the earlier report, have been incorporated in the present one, which thus forms, without doubt, the fullest and most reliable work on Apples and their culture that has ever been issued.

In addition to the statistical details, a full report of the proceedings of the Conference is included, with papers on Apples for profit by Mr. G. BUNYARD, Mr. W. PAUL, and Mr. CHEAL. Mr. WILDSMITH descanted on dessert Pears, Mr. SHIRLEY HIBBERD on pruning, Mr. TONKS and Mr. DOUGLAS on canker, Mr. FRASER on the injurious insects and fungi; Mr. COLEMAN, Mr. MALCOLM DUNN and Mr. SAUNDERS treated of Apple cultivation in Herefordshire, Scotland, and Jersey respectively; while Mr. BAILLIE, Mr. BEAR, and Mr. TALLERMAN discussed the thorny questions relating to marketing, railway rates, and the land question. All, or most, of these papers were printed in our columns at the time, but many will be glad to read them in a collected form.

The extraordinary pressure on our space at this season of shows, forbids us at present from entering into details, for which we refer to the book itself. It must suffice to say that the popular vote, as to the degree of merit of particular varieties, as here recorded, is not fully to be trusted, inasmuch as several really first-class varieties occupy a lower rank than that to which their merits entitle them, because they are not yet sufficiently known or sufficiently distributed, such as Lane's Prince Albert, Golden Spire, Grenadier, Bramley's Seedling, and several others. Of culinary Apples, Lord Suffield heads the list, obtaining 101 votes out of 130. The most popular dessert Apples are Cox's Orange and Blenheim Orange, the latter receives a larger aggregate of votes (115) in both sections—culinary and dessert—than any other. On the whole, the returns are singularly uniform, and the inference to be drawn is that the varieties of Apples really worth cultivation may be reduced to comparatively few.

The committee seems to have been rather too sparing in the elimination of useless sorts, useless in the sense that there are so many superior that can equally well be cultivated. So far as culinary Apples are concerned, all those under three inches in diameter are recommended to be discarded; but there are many reasons in addition to size which would have warranted the rejection of many more sorts.

Lastly, a descriptive list of all the Apples that came under notice is given, with their synonyms, the classification being based on the purpose for which grown; the season when fit for use: first early, early, mid season, or late; the size: small, under 2 inches; medium, from 2 to 3 inches; and large, above 3 inches in diameter. The form is noted under the head of round, oblong, flat, conical, and ovate, terms which need no explanation. The surface is next considered, whether angular or smooth; then comes the ground colour, green yellow, red, bronze, or russet, and streaked or flushed.

In this manner an admirable record has been compiled, one that does credit to all concerned, and one which will, we trust, prove to the public how eminently worthy of support is a Society which is thus shown to be capable of doing such good work for horticulture and the public.

FERRIERES.—Within a short distance from Paris, on the Eastern Railway, is this, the estate of Baron ROTHSCHILD, to which reference has frequently been made in these columns. The large Renanthera, Vandas of equal merit, and other subjects are well known examples of the fine culture which characterises the place. The view now given (fig. 45), represents the winter garden, as seen across the flower garden. The house is constructed of iron, and its length is about 95 feet with a width of 32 feet. The interior is a charming piece of decoration, there being large beds, over the surface of which a carpet of Selaginella is growing, and large Palms and Tree Ferns are gracefully grouped at the corners. Until last year there was a rockery in the centre of this house, but it has been removed, and a bed of Areca sapida occupies its site. Sabal Blackburniana, Latania borbonica, and a few Tree Ferns, with a grand piece of Cibotium regale, are among the most conspicuous specimen plants in this house. The verandahs at each end of the house are clothed with Virginian creepers, and the beds in the flower garden contain a bright show of Pelargoniums, Coleus, Maize plants, &c., mixed together, the carpet-bedding having been discarded.

NATIONAL CHRYSANTHEMUM SOCIETY.—A meeting of the committee took place at ANDERTON'S Hotel, Fleet Street, on Monday evening last. Mr. R. DEAN in the chair. The minutes of the last meeting having been read, the Hon. Sec., Mr. W. HOLMES, stated that the Catalogue sub-committee had decided to issue a Supplementary Catalogue of 8 or 9 pages, bringing the lists up to date, and that copies would probably be ready on Wednesday. The price of the Supplement would be 3*d*. In reference to the Centenary celebration in 1890, the Centenary Committee had got through a certain amount of preliminary work, and they were now in communication with the authorities of the Royal Aquarium. The sub-committee would be prepared with a definite report at a future meeting. The Hon. Sec. also set forth the arrangements of the Conference at the September show. Communications had been received from the Auckland and New Zealand Horticultural Societies, enquiring on what terms affiliation with the National Chrysanthemum Society could be made; facts which Mr. HOLMES instanced as evidencing the work of the Society was watched with interest at the antipodes. The Hon. Sec. reported that the Penzance, Crediton, and Dalston and Haggerston Chrysanthemum Societies had been admitted to affiliation. Twenty-nine new members were elected.

THE VEGETABLE CONFERENCE AT CHISWICK, September 24, 25, and 26, progresses in a promising manner, and, as might be expected, many interesting questions have arisen to demand consideration by the executive committee. Amongst these is one that is perhaps of primary importance. Intending exhibitors in a few instances desire to present collections, and to keep these intact as such. The committee have determined that the printed schedule must be strictly followed; for, in the first place, this is not a competitive affair—there is, in fact, no ostensible competition—and the work of the committees of selection cannot be efficiently performed unless the subjects submitted are grouped in classes, as required by the schedule. And this is a simple matter enough, and the schedule is as definite as can be desired. For the important work of selection six committees of the most experienced cultivators have been arranged, each of these six committees comprising men familiar with the subjects they are appointed to operate upon, both as to nomenclature and the selection of typical examples. A large committee of referees will supplement the labours of the working committees, these being held in readiness

to settle doubtful points, and to advise generally as the working committees may desire. The placing of all exhibits in the classes appointed for them is not only necessary to enable the committees to act, but to render practicable in the way intended in the primary idea of the Conference—the final awards of certificates. For these will be awarded to the subjects, and will notify recognition of purity of types, as well as good cultivation, the genuineness of the several "types" and "strains" being a matter of the first importance. At the dinner on the evening of the 24th, at which Mr. Harry Veitch will preside, we shall hope to see a great force of horticultural talent, as it is to be in a special sense a "gardeners' dinner." Intending diners would do well to secure tickets early by application direct to Mr. A. F. Barron at Chiswick.

held by any suitable surface. So that when ripe and easily detached from the plant, the fruit by means of these hairs might sometimes be caught by the fur or feathers of a passing animal or bird, and be conveyed to a considerable distance, and the conclusion can hardly be avoided that this is at least one of the means by which these grasses have been so widely dispersed.

The Umbrella Pine—Sciadopitys.—Questions have recently been asked as to the size to which this curious Japanese Pine has attained in this country. At Penny Hill Park, near Bagshot, as we are kindly informed by Mr. Park, the gardener, the tree is over 19 feet in height, with a diameter at 3 feet from the ground, of 15 feet, and a circumference of 46 feet. There can be few, if any, finer than this specimen.

grow without being stopped, the largest heads being produced on branches 3 feet long. If treated in the same way as answers for other Ixoras, *i.e.*, frequently stopping the growths with a view to obtaining a compact shrub, no flowers will be developed. The leaves are 10 inches long, and dark green. No flowering stove plant surpasses this when grown as at Kew where, in the Victoria-house it is annually very attractive.

Plumeria bicolor.—The Plumerias belong to that class of plants, which in gardens, grow freely, but do not flower well. Large specimens have been specially treated with a view to make them flower as they are known to do in their native haunts, but they have stubbornly refused to respond. Nothing could be finer than a large example of P. rubra, the Frangi-



Fig. 45.—the winter garden at ferrières. (see p. 302.)

The Dispersal of the Fruit of Pharus. — Plants that are at all widely distributed by other means than man's agency, writes Mr. N. E. Brown, are frequently found to have some evident structural peculiarity, that would more or less tend to aid or bring about a wide dispersal of the plant. One of the several arrangements that plants possess, to aid in their dispersal, consists in the development of hooked spines on hairs or barbed bristles. Under this class must be placed Pharus, a genus of Grasses containing five species, two of which are widely dispersed in tropical America, and the other three may perhaps be but local forms of them. The fruit or caryopsis of this genus is, together with the pale, enclosed in the flowering glume, which is somewhat hardened, and is partly or wholly covered with very short, minutely hooked hairs, which readily become entangled and

In unfavourable localities the growth is extremely slow. We had a small plant, knocked out of a pot in the first instance, for some fifteen years, during which time it did not grown as many inches, though apparently healthy. Possibly the roots were pot-bound when planted. The specimen possessed some little historic interest, which led us to take great interest in it, until a Vandal of a painter destroyed it by placing his ladder upon it.

Ixora macrothyrsa.—This fine Ixora was introduced from the South Sea Islands in 1878, and distributed under the name of I. Duffii. It is by far the handsomest of the many garden Ixoras, the terminal heads of vivid crimson flowers, measuring 9 inches across, and they are as compact as those of a Snowball tree (Viburnum opulus). To flower this species it is necessary that the branches should be allowed to

pani or Jasmine Mango of Brazil, with its large heads of rosy-red fragrant flowers; or, the Goolachin of Indian gardens, P. acutifolia, which has flowers of a soft pink outside, white within. This species is planted over graves in India, its flowers falling and strewing the graves with fragrant petals. P. bicolor has its flowers in large terminal heads, and each flower is 3 inches across, creamy white, with a deep yellow eye, and fragrant. The Kew plant is 3 feet high, and stands in the Succulent-house (No. 5).

Crocosma aurea and its Varieties.—The typical C. aurea is in flower in any gardens at this time of year. It is a useful hardy plant, and when happily situated, it makes a fine display of colour in autumn. But in the variety imperialis, for which our gardens are indebted to Mr. Max Leichtlin, we have a much finer form. The stems

are 3 feet or more high, and the flowers are fully 3 inches across, with broad segments, and a deep orange, almost scarlet colour. Some of the plants of this variety show a slight tendency to the spotting which is so conspicuous in that recently described by Mr. Baker as var. maculata. The flowers are as large as those of the variety imperialis, and the three inner segments of the corolla have each a broad band of purple a little distance from the base. These plants, with the Montbretias and the numerous progeny of the two so-called genera, are certain to become almost as popular as Daffodils when they become better known.

Allamanda violacea.—All the Allamandas, except this one, have yellow flowers. Gardner who discovered A. violacea in the province of Ceara, Brazil, and afterwards described and figured it in Fielding's *Sertum*, called it the most beautiful of all Allamandas, and described the colour of the flowers as "violaceous." A. violacea is distinct and attractive, but it is not as beautiful as the yellow-flowered kinds. It is now in flower at Kew. The habit of the plant is as in A. cathartica, but the leaves are in verticils of four, and they are covered on both sides with scabrid hairs. The flowers are in terminal clusters, and they are as large as those of A. cathartica. The lower, narrowed portion of the tube is 1 inch long, and green; the inflated part is 1¼ inch long, and ¾ inch wide at the mouth; the five spreading corolla lobes form a limb nearly 3 inches across. The colour is somewhat difficult to name, "crushed strawberry," some call it, others call it salmony-purple. The corolla is of good fleshy substance; calyx five-lobed, three of the lobes seven-eighth by three-eighth inch, the other two much smaller. This species was in cultivation in 1861, as is shown by a note in the *Gardeners' Chronicle* for that year, from a Mr. Wentworth Buller, of Exeter, who had it in flower. But it appears to have disappeared long ago from English collections. The Kew plants were procured from the Natal Botanic Gardens, whither they had, no doubt, been sent from England years ago. A picture of A. violacea will be published in the *Botanical Magazine*.

Chrysanthemum Golden Fleece, alias Mrs. Hawkins.—On Tuesday, 10th inst., the arbitrators appointed in the action of Hawkins & Bennett *v.* Ware met to hear the evidence. The question was with reference to the new Chrysanthemum "Mrs. Hawkins." The arbitrators were Messrs. Wm. Paul, Steele, and Ker, of Liverpool. On the conclusion of the evidence, the arbitrators took time to consider their award. We defer our report of the case until the award has been published.

Anomatheca grandiflora.—This fine Irid is proving itself a first-class hardy bulbous plant, as it has thriven out-of-doors at Kew two years, and has grown and flowered freely. It is now in fine condition in the border devoted to Cape bulbs, its large rich crimson flowers being most attractive. As the bulbs develops runners and offsets at least as freely as the Tritonias and Montbretias do, the plant will soon become common enough. When grown in pots, it was not nearly so handsome as it is in the open ground. The figure of it in the *Botanical Magazine* gives only a poor idea of its beauty. The species was introduced from Delagoa Bay to Kew in 1885. It has the habit of a Crocosma, a branching spike 2 feet high, and flowers 2 inches across.

Cyphomandra fragrans.—Of the two species of Cyphomandra cultivated at Kew, that here named is much the handsomer as a flowering plant, although it lacks the attractiveness and usefulness of the fruit which characterise the Tree Tomato, C. betacea. Indeed, C. fragrans very rarely fruits under cultivation. Its main stem is erect, whilst the branches are horizontal, and clothed with smooth green leaves. The flowers are very abundant, and they hang gracefully in pendent racemes from the leaf-axils. They are at first a rich deep blue colour, but after a few days they change to a soft yellow. They remain fresh on the plant a long time, the specimens in the temperate-house having been in bloom all the summer. The shape of the flower is that of a deep urn-like cup, nearly 1 inch deep and wide. Another name for this species is Pionandra fragrans.

Royal Salep.—In the last-issued number of the *Annals of Botany*, Dr. Aitchison has an interesting paper on the source of "Badsha" or Royal Salep, a substance largely used as food in some parts of Afghanistan. Dr. Aitchison has now been able to identify this substance with the bulbs of a species of Onion (Allium Macleanii, *Bot. Mag.* t. 6707). One remarkable characteristic of this species, which it shares with a few others from the same district, is that the bulb does not consist of a number of tunics wrapping one round another, but of a central solid mass of Potato-like consistency, surrounded externally by a few thin scales, and itself investing the central axis or growing point. Another characteristic is a negative one, that is, the pungent smell of Onions is scarcely present in these bulbs. The bulbs are full of granular and mucilaginous matter, to which, no doubt, their value as food is due. Like other Onions they contain, it is to be presumed, no starch.

The Paris Exhibition.—At the competition on August 5, M. de la Devansaye obtained the 1st prize for Anthurium album maximum as a new seedling raised by the exhibitor. The same gentleman obtained a like award for Vriesia platynema, a new Bromeliaceous plant purchased from the collection of the late Professor E. Morren, and shown for the first time in flower.

Medinilla amabilis.—This plant, described by Mr. Dyer in the *Gardeners' Chronicle* (see illustration April 29, 1882, p. 561), is very similar to the grand old M. magnifica, differing chiefly in having erect instead of pendulous racemes. It is very useful for large stoves, and is a really noble plant when grown to a large size. The stronger the shoots the larger are the flower-heads, which are terminal, and not, as in M. magnifica, sometimes produced directly from the old wood. The plant at Kew is 4 feet high, and has very large bright green foliage, whilst the flower-heads are nearly a foot through, and are composed of numerous rosy-pink flowers. The species was introduced in 1874 from India, and is figured in the *Botanical Magazine*, t. 6381. M. erythrophylla has also flowered in the Palm-house; it has erect woody branches, ovate, dark green leaves, and numerous rosy-red flowers, which are developed from the leafless parts of the branches, and are very ornamental. It appears to be the same as what is cultivated as M. Teysmannii.

Hong-Kong.—Mr. Ford, Director of the Botanic Gardens, Hong-Kong, writes to the Royal Gardens, Kew, under date May 31, 1889, announcing that "Hong-Kong has just had a terrible visitation, in the way of an electric and rain-storm, which lasted about thirty-six hours. Of rain we had 24 inches in twenty-four hours. A part of our gardens, the Glenealy Ravine, which is very precipitous, has been almost obliterated with landslips, and the bursting of an underground culvert; 10,000 dols. will scarcely repair the damages. The damage to public property is estimated at about 150,000 dols."

Solanum Wendlandi.—The enormous genus Solanum is represented in gardens by at least two valuable esculents—the Potato and Egg-plant, and also by a considerable number of useful decorative plants, in which foliage, or fruit, or flowers, are the chief attraction. S. Wendlandi belongs to the handsome-flowered section. It is a succulent, scandent shrub, with spiny stems and leaves, the latter lobed or pinnate, and it bears terminal cymes of large blue flowers. Strong branches produce cymes a foot across, and as each of the many flowers is over 2 inches across, saucer-shaped, with yellow anthers, the effect produced by a strong plant is really fine. It requires moist stove treatment, plenty of sunshine, and immunity from the knife. It goes to rest in winter. A fine example of it has been in flower for some time in the Water Lily-house. The species was introduced from Costa Rica by Mr. Wendland, and flowered for the first time at Kew in 1882. It is figured in the *Botanical Magazine*, t. 6914.

GEORGE B. TILLYARD.

It is with regret that we have to record the death of Mr. Tillyard, late of Brocklesby Park Gardens, who died on the 6th inst., after a lengthened and trying illness. He did not keep his bed at all, as the disease was of such a nature that he could not rest in one position for any length of time. For the last twenty-five years Mr. Tillyard was gardener to the Earl of Yarborough, whose respect he enjoyed, as well as that of the late Earl. He was well known to gardeners throughout the kingdom, and in the early part of his career he served the late Duke of Buckingham at Stowe, the late Lord Eversley, and, previously to his coming to Brocklesby, he served the late Sir John Kelk, Bt., at Bentley Priory, Middlesex. Who in the gardening world has not heard of the famous pyramid flower-beds at that place during the time Mr. Tillyard was at the Priory? At Brocklesby his hand did not lose its cunning, for the pyramids there were equally beautiful. Mr. Tillyard was not only successful in the flower garden, but he was an excellent kitchen gardener, and cultivator of fruit of all kinds.

Mr. Tillyard was born at Hendon, Middlesex, in 1819. The funeral took place at Brocklesby on Monday, September 9, many friends showing by their presence their respect for the deceased.

[Our illustration, see p. 305, was taken some years ago, and was considered by those who knew him to be a good likeness of Mr. Tillyard. Ed].

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

Birds and Fruits.—Under this heading, in a recent issue, there are a few notes signed "Bird's Friend," and which I cannot let pass without comment, for the reason that I think it wrong to attribute to certain birds the possession of habits and ways to which they have no claim whatever. But this, I am sorry to say, of late has become more or less frequent; irresponsible persons giving as facts, and as though from actual observation, many more than doubtful details of bird-life, and which are, to say the least, most misleading. It would be just as true to call a Dahlia a climbing plant. It is so easy, by keen careful observation with a binocular glass, as well as by good eyesight, not only to observe the doings of the animal and bird world about us, but also to impart to others most useful information, which cannot be done in a perfunctory way. Thus it is that the naturalist so frequently has thrust before him errors which should be apparent even to the uninitiated, and of which he is painfully conscious. The article on "Birds and Fruits" is an example of this, and were it not put forth with pretentions of setting others right on the subject, I should pass it over in silence; but I feel I should not be doing my duty to either men or birds if I did. The writer states broadly that birds are in general more plentiful this season than usual, particularly starlings, swallows, thrushes and chaffinches, and goes on to say that there has "never been less inclination to molest fruit crops and seeds." This, at first sight, looks well, but why should these birds mentioned touch the fruit crops and seeds? Only two—the starling and the thrush—ever take fruit, and neither of these—the starling especially—if the weather is damp and insects rife. I had a number of these birds nesting about my premises for many years, and they never took any of my fruit, but they did me an immense amount of good by eating the grubs of several kinds of insects—especially on the grass-land. Thrushes are never plentiful, as their mode

of life prevents it, for the reason that one pair will not allow of the presence of another within a certain radius—I only wish they would. Now, as to the swallows—they are purely insectivorous, so their not touching the fruit is nothing unusual; nor do the sparrow and chaffinch devour it. So this statement is purely imaginary; but after saying they do not touch the seeds—and only two of them do, as a rule, at most times—I might almost say at any—I allude to the depredating sparrow and chaffinch—the writer proceeds to say they keep nets, wire protectors, and other means to keep them from the seeds. What need of them, if they do not eat the seeds, as he states? But two of them do so, though he implies they do not. But before I go further, I will notice what the writer speaks of as "the tangible reason" why they have not touched the fruits, viz., "the shoals of aphis and slugs." Now, the starling and thrush do not eat aphis, the swallow only when the insect is on the wing, and the sparrow and chaffinch only when feeding their young. Yet the broad statement is given with an air of apparent truthfulness the reality of which certainly is lacking. Now, as to the slug, especially the white slug—not one of these birds will eat it. I have had my garden full of slugs, and yet starlings in number, some thrushes, blackbirds, sparrows, chaffinches, robins, &c., were fed there. Why will people continue to write on subjects, and put forth such statements without full and proper study of that about which they pretend to instruct. It is vexatious. It does the cause of the birds no good, if that is the idea, but absolute harm; for when the naturalist, who knows by experience and otherwise, the true state of things, recommends such and such birds as both useful, charming, ornamental, and in every way desirable, then he is disbelieved, because there has been so much stated that has been proved continually by trial to be simply said for the sake of talking, writing, or the yet more simple notion that it is amiable to praise all bird life. But let me say, at the same time, there are very few birds that do not well deserve the kindest attention at the hands of man, still not for the reasons that are too often given as to their especial food. No one is more fond of birds than I am, and having such love for them, I feel annoyed when I see them misrepresented, as they certainly have been, by the writer "Bird's Friend." Now, as to the slug. Ducks eat them with avidity, and fatten quickly. There is no better bird in the garden than a small duck. Curlews, gulls, and some other wild birds are useful, but I prefer ducks for many reasons. Now, as to the cats. Here again "I feel quite at home." They are useful in a garden in many ways, more especially to kill marauding mice and rats; but they do much injury to bird life of the lesser kinds, robins, wrens, hedge-sparrows, white-throats, and other soft-billed, very useful birds being easily taken by them. While blackbirds will not unfrequently drive these guardians out of the place, though after much battling and resistance. So will jays, starlings, and thrushes. Also cats kept only for garden purposes, seek out, find, and destroy the nests of the small birds and eat their eggs. But, if the cats are fed and let out only at night, they do an enormous amount of good in killing the vermin that prowl about after dark. I have had a bevy of cats at one time, both in the house, cow-houses, poultry-houses, and about the premises, and thereby have proved, many a long year, their usefulness. The only drawback with them has been their killing the small and useful birds, and the destruction of nests. I do not write the foregoing with any captious feeling, but for the reason that it is time that far-fetched sentimentality was put aside, and facts, instead of fancies, regarding the true usefulness of birds were written. Then the public would rely on and know the exact value of each and every bird without fallacies which are now so plentiful, and to the feathered tribes highly prejudicial. *Harrison Weir, F.R.H.S., Iddesleigh, Sevenoaks, Aug.* 31, 1889.

A NEW CURE FOR RHEUMATISM.—An itinerant medicine vendor, who had stationed himself within the grounds of the recent Sandy flower show, was offering for sale a Mandrake embrocation, which he asserts is an instant cure for many of the ills flesh is heir to, and especially rheumatism, cramps, gout, &c. On his table, laden with bottles of drugs, was a large root of white colour, resembling a huge, many-branched Beet, which he represented to be that of the common Mandrake (Mandragora officinarum), but probably one of the Deadly Nightshade (Atropa belladonna), the root of which is known to grow to a great size, when established in an old bank or suitable place. The novelty offered by the medicine man greatly attracted the attention of the country people, and he appeared to be doing a good business. *R. D.* [The root was probably that of Bryony, a dangerous poison. ED.]

THE VEGETABLE CONFERENCE.—"Vegetables are everywhere grand this year," is the burden of the report of those whose business it is to visit flower shows in the provinces. I have had some opportunities of seeing the same thing, and I believe testimony is universally to the effect that we have never had a better season for vegetables than the present one. That fact specially justifies the holding, this year, of the proposed Vegetable Conference, for it would have been a misfortune to have held such a gathering during a year when the desired products were in bad condition. It has been suggested that seedhouses specially interested in vegetables should issue appeals to their customers to send representative products of their various districts to the Conference. Without doubt, some such effort might be productive of considerable good. Whilst, no doubt, every seed firm will evince some desire to see its specialties in force at the Conference, so far as the time of the year will allow, and the samples of the very best form; yet a higher aim might be found



in a desire to see the special district over which each firm might be said to specially operate, thoroughly well represented. It is stated that Messrs. Vilmorin, of Paris, propose to send over a large representation of French vegetables. If that be so, how much the more should our home seedsmen be stimulated to secure representatives of all the vegetables of their respective districts, that the British growers may cut a good figure by the side of the French growers. As to how far the trade element may be introduced into the Conference, I have no special knowledge, but certainly it is the desire that no large miscellaneous trade collections be shown, but that every exhibit must be found in its proper section and class. No matter by whom shown, were miscellaneous trade collections admitted, no space would be left for the ordinary classes; still further, the educational results in relation to vegetables, looked for from the Conference, would be valueless. It will be one of the special features of the Conference as a vegetable exhibition, that almost for the first time, perhaps, we shall see no mixed collections, but every kind of vegetable will be found under its proper heading, with ample opportunity given for comparison with others, and the selection of the best samples and types for honourable mention. It is to be desired that we may see some examples of vegetable culture from Ireland and Scotland, in addition to English and Welsh products. Certainly these countries at the time of year should be fully able to emulate southern growers in the matter of vegetable representation. Those sending products, especially over long distances, can hardly take too much pains with the packing, and each head, bulb, or root of any kind, as also dishes of smaller products, would travel all the better for being wrapped in newspaper. As to the ultimate disposal of what may prove to be rather a large bulk of vegetable produce after the Conference is over, whilst some may wish to remove specially good samples of roots and bulbs for seed purposes, yet much will probably be useless to the exhibitors; could not some arrangement be made by which all this surplus could go to the London hospitals, where, doubtless, it would find welcome acceptance. Intending exhibitors may perhaps think the matter over prior to the time of holding the Conference. *A. D.*

DENDROBIUM FORMOSUM GIGANTEUM.—We have a small plant of this. It was imported three years ago, and this year it has made two growths, and on one there are fifteen flowers, and on the other thirteen, the highest number last year being twelve. I should like to know if this is an unprecedented number of flowers to be found on a single growth? *S. N.* [Four or five, usually. ED.]

HAM GREEN FAVOURITE TOMATO.—We have in the above Tomato one of the best varieties that has ever been sent out. I have enclosed you two bunches of fruit. I find it one of the heaviest weighing for its size, and best shape we have. We have some plants loaded with fruit, which are a remarkable sight. A sample of the fruit I have enclosed for your inspection. *F. P.* [Excellent in every way. ED.]

YUCCA GLORIOSA VARIEGATA.—We have here a fine plant of the above, planted out in the conservatory, now in full bloom. The plant stands 10 feet high and the flower-spike bears flowers of a creamy-white, and is nearly 3 feet long. *W. Duthie, Staincliffe Hall, Hartlepool.*

UNPRUNED ROSES.—That some Roses answer to grow entirely unpruned for purposes of garden decoration is exemplified by the plant of Rêve d'Or, from which the enclosed are cut. The truss has now four blooms fully open; one has fallen, and there are seven more ready to open. There is another truss on the plant, carrying twenty-five unopened buds, and there are any number of smaller trusses in and coming into flower. The plant was brought with me here from Norfolk in the autumn of 1884, and is budded on an 18-inch dog Brier. It now measures 20 feet from tip to tip one way, and about 10 feet the other, and is 8 feet high, growing vigorously on every side; but its extension is considerable checked by neighbouring trees and shrubs. Anyone desiring to see it may do so by calling at my house for the purpose. *J. E. Ewing, Sea View, Havant.*

SCOTLAND.

DALKEITH SHOW.

THE annual show of the Dalkeith Horticultural Society was held in the Corn Exchange, Dalkeith, on the 7th inst. The Society is a flourishing one, and the show, in point of quality, was quite equal to the average of the past twenty years, but there was a falling off in the gardeners' entries, which gave the hall a thinner appearance than usual. Vegetables were especially good.

In the gardeners' section, the competition for the collection, which was very keen, lay between Mr. T. Pringle, Westfield Cottage, who was placed 1st; and Mr. Smith, Oxenford Castle, who was an excellent 2nd.

A strong feature of the show was made by the entries, seven in number, for an "open to all" prize—a sewing-machine—for eighteen distinct species of cut flowers, in bunches, quality and taste in arrangement to be the basis of judgment. The first position was awarded to Mr. Smith, and the 2nd to Mr. McKinnon, Melville Castle, both being very fine stands, and distancing all others very much. Asters, quilled especially, were very fine; African Marigolds were also remarkably large, clean, and well grown.

In the amateurs' classes were some notable examples of excellent plant culture, as, for instance, in the splendid specimens of Aloysia citriodora, two of

which were respectively nearly 4 feet in diameter, by about 2½ feet in height, the other about 3 feet in diameter, by about 2 feet in height, both models of what such a plant should be, neither having stakes or support of any kind, but were standing on their own stems, and had been pinched into the close symmetrical habit each had assumed. The principal prize-taker in the gardeners' section, besides the two named above, was Mr. Bowman, gardener to Lady Deas, Lasswade. Among amateurs the honours were pretty equally taken by Messrs. Dodds, Dalkeith; Williamson, Eskbank; Allan, Oxenford; Duquid, Oxenford; and Brown, Cowden Grange.

EXPANDING PLANT-COLLAR.

THIS is an appliance which consists of a hoop of metal, which is inserted inside the pot, so as to allow of surface feeding. The illustration (fig. 47) explains itself fully, see our article on p. 310, by Mr. Doughty "On Growing Early Chrysanthemums." Some such contrivances as Mr. Beale's have long been in use in gardens where Pine-apples, fruit trees, &c., are grown in smallish pots. The makers are Messrs. R. Beale & Co., New Southgate, London, N.

SOCIETIES.

ROYAL HORTICULTURAL.

SEPTEMBER 5.—A meeting of the Floral Committee was held in the gardens, at Chiswick, when Messrs. W. Marshall, Shirley Hibberd, F. Ross, and Lewis Castle were present. The collections of Heliotropes, Ageratums, Pelargoniums, Asters, and Dahlias were inspected, and awards were made for the following:—

Asters.—These constituted a fine display, a large space of ground being occupied with them, the trials of strains and varieties being numerous and thoroughly representative. Certificates were awarded for Hedgehog, Imbricated Pompon, Half Dwarf Pompon, Victoria, New Liliput, Victoria Needle, Cocardeau or Crown, Dwarf Pyramidal, large flowered Dwarf Queen, and Improved Rose. Awards of Merit were granted for Dwarf Chrysanthemum, Dwarf Queen Victoria, Dwarf Bouquet, and New Victoria (Barr), most of those named being grown from seed supplied by Messrs. Putz and Dippe respectively.

African Marigolds.—Certificates were awarded for the following:—

Prince of Orange.—A compact growing variety, 2 feet high, large, well formed, richly coloured flowers.

Lemon Queen.—Similar height to the above, very even, flowers good shape, soft clear lemon tint.

Dwarf Orange.—About 20 inches high, and would probably be less in an open situation; good habit, flowers, and colour.

Dwarf Golden.—Compact, free, and useful variety.

French Marigolds.—Electric Light.—Dwarf, free, and good, flowers pale lemon.

Dobbie's French Selected.—Tall, flowers yellow with a few stripes, excellent shape, awarded a certificate for its floral quality.

Dahlias.—A large number of Dahlias came under notice, and certificates were awarded for the undermentioned:—

Single.—Florrie Fisher (Ware), Chilwell Beauty (Ware), Miss L. Pryor (Ware), Kate (Ware), Paragon (Turner), Amos Perry (Turner), Mr. Kennett (Turner), Fashion (Cheal), Victory (Cheal), Magpie (Cheal), and Mrs. Kennett (Cheal). Awards of merit were made to Duchess of Westminster (Ware), Miss Gordon (Turner), Guardsman (Turner), Hugo (Cheal), Negro (Cheal), and Edith (Cheal).

A certificate was also awarded to Empress of India (Turner), a crimson Cactus Dahlia; and awards of merit to Professor Baldwin (Ware), a scarlet Cactus Dahlia; and North Light (Turner), a brilliant scarlet pompon.

Heliotropes.—First-class certificates were adjudged for the following:—

Capus (Lemoine).—A remarkable variety with deep purple flowers, large truss, and good habit.

Fleur d'Eté (Lemoine).—Light colour, large flowers and truss, dwarf compact habit; free, and useful.

Victor Durny (Lemoine).—A tall, strong-growing variety, having an enormous truss of purplish flowers. Effective and useful for training against a wall.

Zonal Pelargoniums.—Souvenir de Mirande (Lemoine),—Single, white centre, cerise edge, finely formed flower and truss, very distinct.

Opal (Pearson).—Single, dark salmon, darker centre, fine bold flower, good habit, free.

Charbon Ardent (Lemoine).—Double, brilliant orange scarlet, a dazzling and distinct shade.

Seedling 137 (Lemoine).—Single, very large truss, of a peculiar rosy tint.

Semis (Lemoine).—Purplish-crimson, rich colour, large semi-globular truss, one of the Nosegay type (award of merit).

Scabious.—Half Dwarf Blood Red (Vilmorin).—An excellent strain, of an intensely light yet rich crimson colour. Fine compact habit.

A capital strain of Zinnias (Putz) was also commended.

NATIONAL DAHLIA.

CRYSTAL PALACE, *Sept.* 6 *and* 7.—It was a large thoroughly representative, and on the whole, very good show. Dahlias are much affected by the incidence of the weather, and while some flowers are seen in their best character, others are inclined to roughness, and lack symmetry. On the whole, the Society had much reason for gratification.

Centenary Prizes.—In commemoration of the centenary of the introduction of the Dahlia to this country, prizes were offered for a collection of Dahlia blooms to occupy a length of staging not exceeding 24 feet, no restriction as to varieties or types, nor as to the method of grouping; quality and general effect to be the leading feature. Five of the leading firms who make a specialty of Dahlias competed, and the 1st prize was awarded to Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, who had a raised centre as a background of four tiers of bunches of single Dahlias, set up in their usual admirable style, flanked on either side by three tiers of bunches of Pompon Dahlias, and in the foreground stands of cut blooms of show and fancy Dahlias. Not only was the contribution well set up, but the quality of the blooms was high throughout.

Messrs. Paul & Son, Old Nurseries, Cheshunt, who had a similar arrangement, but which lacked a little of the high quality and skilful disposal of the flowers seen in the winning collection, should, we think, have been 2nd; but the fiat of the judges went to Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, who had piled up mimic mountains of Cactus and other Dahlias, the valleys formed of single Dahlias and bunches of various types, including some of the species. Neither the method of staging nor the general effect was commendable. Messrs. Keynes, Williams & Co., Nurserymen, Salisbury, with a somewhat ordinary arrangement in bunches; while Mr. Mr. Charles Turner, Royal Nursery, Slough, went in for something like a floral device, having a high boarded background, covered with green calico, on which was worked, in different coloured letters in varied types of Dahlias, "Dahlia Centenary. C. Turner, Slough" (he ought to have known better); and on the table bunches of Dahlias in water, with plants of various sections in pots.

Mixed Show Dahlias.—In classes 1 to 6, show and fancy Dahlias were shown intermixed. In the leading class, for seventy-two blooms, not fewer than thirty-six varieties, or more than two blooms of any one, Mr. C. Turner was a good 1st, staging fine blooms of Eclipse, Charles Wyatt (self), Diadem, Maud Fellowes, a charming new light variety; Prince Bismarck, Colonist, Robina, Mrs. Gladstone, probably the one variety most shown on this occasion; George Rawlings, J. N. Keynes, Nellie Cramond, James Stephen, R. T. Rawlings, a very good clear yellow self; Imperial, Henry Eckford (fancy), Bendigo, Hope, Geo. Rawlings, Mrs. G. R. Jeffard, Prince of Denmark, Matthew Campbell, a new fancy, bright buff or apricot, striped with crimson—a very useful addition to this class; Ruby Gem, Sunbeam, Harry Keith, Ethel Britton, Crimson King, Grand Sultan (F.), Mrs. John Laing, Mrs. Forster, Harry Turner, James Bennett, Glow-worm, a striking bright orange-scarlet self—likely to prove very useful; Rev. J. B. M. Camm (F.), Joseph Green, Mrs. Shirley Hibberd, Mrs. J. Downie, Seraph, Sailor Prince (F.), a new variety, lilac, striped and splashed with rosy-purple; Rev. J. Godday, Clara, Sunrise, Florence, and Burgundy.

The 1st prize in the class for forty-eight distinct varieties may be looked upon as the blue ribbon of the competition, and this was won by Messrs. Keynes, Williams & Co., with a very fine lot of blooms, including Harry Keith, James O'Brien (F.), Crimson King, Mrs. Glasscock (F.), Miss Cannell, Professor Fawcett (F.), R. T. Rawlings, Duchess of Albany (F.), Lord Chelmsford, Mrs. Theobald, James Cocker, Mrs. P. Wyndham, Mrs. Spofforth, Thomas Hobbs, Maud Fellowes, Buttercup, Glow-worm, King of Purples, Frank Pearce (F.), Imperial, General Gordon (F.), Colonist, Mrs. E. Mawley, Hugh Austin (F.), William Rawlings, Mrs. Langtry, Prince Henry (F.), Harrison Weir, Dorothy, Richard Dean, Shirley Hibberd, Diadem, Herbert Turner, Peacock (F.), Mrs. Shirley Hibberd, Nellie Cramond, &c. 2nd, Mr. C. Turner, whose leading flowers were Grand Sultan (F.), T. S. Ware, Charles Wyatt (F.), John Bennett, George Rawlings, Maud Fellows, Florence, Clara, Prince of Denmark, Glow-worm, James Vick, Mrs. G. R. Jeffard, Fanny Short (F.), Henry Eckford (F.), R. F. Rawlings, Charles Wyatt (self), Mrs. Shirley Hibberd, Rebecca (F.), &c.

In the class for thirty-six varieties, Mr. John Walker, nurseryman, Thame, was 1st, with a superb lot of blooms, having Mrs. Gladstone, Shirley Hibberd, William Rawlings, Ethel Britton, Alexander Cramond, Mrs. W. Slack, John Wyatt, George Rawlings, Antagonist, Willie Garratt, Harry Turner, John Bennett, Harry Keith, Harrison Weir, James Cocker, Flora Wyatt (F.), Mrs. F. Foreman, Earl of Ravensworth, Purple Prince, Seraph, Mrs. S. Hibberd, Clara, James Stephen, Hope, and John Wyatt.

The best twenty-four varieties came from Mr. G. Humphries, a rising exhibitor, who had Purple Prince, Ethel Britton, Thomas Hobbs, Henry Eckford (F.), Mrs. G. Rawlings, Major Clark, Henry Walton, James Stephen, Mrs. W. Haskins, Crimson King, Mrs. Gladstone, Willie Eckford (F.), Mrs. Saunders, Dorothy, Mrs. Harris, William Rawlings, R. J. Rawlings, Harry Keith, Duchess of Albany (F.), Harriett Tetterell, and Gaiety (self).

With twelve blooms, Messrs. J. Cheal & Sons were 1st.

The next class for twenty-four blooms, show and fancy, mixed, was open only to amateurs, and here Mr. J. T. West, gr. to W. Keith, Esq., Cornwalls, Brentwood, was 1st, with Rev. J. Godday, Mrs. Gladstone, Harry Keith, R. F. Rawlings, William Rawlings, Miss Cannell, Prince Bismarck, J. T. West, John Henshaw, Mrs. D. Saunders, James Stephen, Dorothy, King of Purples, Mrs. George Rawlings, Willie Garratt, Frank Peace (F.), Ethel Britton, James Cocker, Rev. J. B. M. Camm (F.), Shirley Hibberd, Mrs. S. Hibberd, Prince of Denmark, Mrs. Langtry, and J. W. Lord.

Show Dahlias Only, Amateurs.—In the class for twelve blooms, Mr. A. Ocock, Havering Park, Romford, was 1st, with George Rawlings, Maud Fellowes, Harry Keith, Rev. J. B. M. Camm (self), R. T. Rawlings, Prince of Denmark, Sunbeam, Rev. J. Goddard, Shirley Hibberd, Mrs. Gladstone, William Rawlings, and Ethel Britton.

In the class for six blooms, Mr. H. Heeremans, jr., Langley Burrell, Chippenham, was 1st, with Colonist, Rosetta, Mr. Gladstone, Hope, Mrs. W. Slack, and Burgundy.

Fancy Dahlias, Amateurs.—In the class for twelve blooms, Mr. Henry Glasscock was 1st, with Duchess of Albany, Peacock, Viceroy, Rebecca, Mrs. Saunders, Mrs. J. Downie, orange, striped with scarlet—a very promising variety; Fanny Sturt, Henry Eckford, Matthew Campbell, Frank Pearce, Edmund Boston, and Pollie Sheffield.

In the class for six blooms, Mr. A. Ocock was 1st, with the Rev. J. B. M. Camm, Peacock, Mrs. Saunders, Frank Pearce, Mrs. N. Halls, and Henry Eckford.

Show and Fancy Dahlias in Colours (Open).—With six blooms of any two dark Dahlias, three of each, Mr. John Walker was 1st, with James Cocker and George Rawlings.

With six light Dahlias, Mr. J. T. West was 1st, with Mrs. Gladstone and Queen of the Belgians, both very fine; 2nd, Messrs. Keynes & Co., with Mrs. Gladstone and Gengiacea.

With six blooms of tipped Dahlias, Messrs. Keynes & Co., were 1st, with Mrs. Saunders and Peacock—an excellent contrast.

With six blooms of striped Dahlias, Messrs. Keynes & Co. were 1st, with Mrs. J. Downie and Rebecca. All the flowers in the last two classes were fancy varieties.

Decorative and Cactus Dahlias.—Collections of twelve varieties, six blooms of each, in bunches, made a fine display; Messrs. Keynes & Co. were 1st, with the following, in admirable condition:—Lady

Farnham, William Darvill, Asia, Amphion, Empress of India, Professor Baldwin, Panthea, Mrs. Hawkins, Honoria, Henry Patrick, Juarezii, and Prince of Wales.

Six varieties.—Mr. J. T. West was 1st, with Marchioness of Bute and Centenary Year, new varieties of his own raising; Amphion, Empress of India, Panthea, and Beauty of Brentwood.

Pompon Dahlias were a very striking feature. In the open classes for twenty-four and twelve varieties, the awards were as follows: Twenty-four—1st, Mr. Charles Turner, with Fairy Tales, Admiration, Cleopatra, Isabel, Oberon, Juno, Leila, Rosaline, Mabel, Whisper, Darkness, Eccentric, Hamlet, E. F. Jungker, Little Duchess, Lady Blanche, Mikado, Vivid, Ariel, Lavinia.

In the class for twelve bunches, Messrs. J. Gilbert & Son were 1st, with Gem, Gazelle, Darkness, Lady Blanche, Isabel, Golden Gem, Grüss an Wien, E. F. Jungker, Grace, Guiding Star, Leila, and Rosalie.

In the class for six bunches there were nine competitors, Mr. J. T. West being placed 1st, with Gem, Isabel, Favourite, Eurydice, Dolly Keith, and Rosalie.

Single Dahlias.—Messrs. J. Cheal & Sons were 1st, with a superb stand of twenty-four varieties, set up in admirable manner, the varieties being Mr. Kennett, Albert Victor, White Queen, Amos Perry, James Scobie, Queen of Singles, Mrs. J. Cormick, Washington Irving, Excelsior, Miss Ramsbottom, Victoria, W. C. Harvey, Cetewayo, Hugo, Ida, Formosa, Miss Henshaw, Mr. Rose, Sunningdale Yellow, Lady Montefiore, Enchantment, New Year, Duchess of Westminster, and Duchess of Albany, a delightful and distinct variety.

In the class of twelve varieties, Mr. M. V. Seale was 1st, with very good blooms of Mr. Kennett, and the same as an orange-crimson self; De B. Crawshay, Huntsman, Miss Henshaw, Miss Linnaker, Duchess of Westminster, Victoria, Alfonso, Mrs. J. Cormick, Amos Perry, and Brutus.

The class for six bunches of single Dahlias was confined to amateurs, and here Mr. T. W. Girdlestone was 1st with Gruppo, Marie Linden, Yellow Perfection, Cyclops, Sunningdale White, and Leila.

Seedling Dahlias. — First-class Certificates of Merit were awarded to the following show varieties from Messrs. Keynes & Co.: Majestic, a pale ground flower of great promise, the basal petals suffused with pale pink, and slightly tipped with purple, more heavily upon the centre petals, something in the way of Maud Fellowes, but much darker; Crimson Globe, a medium-sized bright crimson flower of the finest form, perfect petal, and high centre, a telling exhibition variety; Duke of Fife, bright crimson, with slight shading upon the petal edge, a large full flower with somewhat reflexed petals; and Alice Emily, delicate buff yellow, but of a brighter and purer yellow on the petal edge, fine petal and outline, and appearing as if it would be very constant. Messrs. Keynes & Co., also had Baronet, pale cerise scarlet; Admiral, shaded pale scarlet; John Hickling, clear deep yellow, fine petal and outline; Bullion, bright yellow, somewhat reflexed; Edith (fancy), yellow ground, striped with crimson and maroon; Sunset (fancy), yellow, striped and flushed with crimson; Dandy, yellow ground, heavily flaked and striped with crimson-maroon; Buffalo Bill, amber, striped with deep crimson; Tip Topper, bright purple, heavily striped and flaked with maroon; and Comte de St. Sairxs, bright deep lilac, striped and flaked with maroon.

A First-class Certificate was awarded to decorative Dahlia Mrs. Douglas, a bright pinkish-salmon type of Juarezii, quite distinct in colour, from Messrs. H. Cannell & Sons. Other new varieties were Centenary Year, a large and bright-looking flower in the way of Juarezii; and Marchioness of Bute, pale ground, edged and suffused with pinkish-purple, both from Mr. J. T. West.

A First-class Certificate was awarded to pompon Dahlia Cleopatra, the centre purplish-crimson, with a pale lilac-purple base, from Mr. C. Turner, who also had Mikado, white, tipped and edged with crimson-maroon, very pretty; Rosaline, white and yellow variegated; Juno, white, very delicately tipped with purple in the centre; and Oberon, pale-purple, heavily tipped with purple-lake. The following single Dahlias from Mr. T. W. Girdlestone received First-class Certificates also:—Lady Helen, white, tipped and margined with white; Gruppo, bright cerise, dashed with orange, and slight shading of purple; and Yellow Perfection, clear bright yellow, a model single Dahlia in respect of size and form.

The Conference, in celebration of the centenary of the Dahlia, took place in one of the dining-rooms, at 3 P.M., Mr. Shirley Hibberd presiding, there being a good attendance of those interested in the flower. After a brief opening address by Mr. Hibberd, the chair was taken by Mr. T. W. Girdlestone, and an address of great historical interest was given by Mr. Shirley Hibberd on the history of the Dahlia, illustrated by means of diagrams and coloured drawings. Then followed a paper by Mr. Harry Turner, on the show Dahlia; one by Mr. J. T. West, on the cultivation of the show Dahlia—both, of course, including the fancy section; and lastly, one by Mr. Joseph Cheal, on pompon, single, and decorative Dahlias. Mr. Turner's paper is reprinted on p. 296. Mr. Henry Cannell and others took part in the discussion which followed, and the proceedings closed, with a vote of thanks to the readers of the papers. If the proceedings of the Conference could be issued by the National Dahlia Society in a cheap pamphlet form, it would, no doubt, prove very acceptable.

The Fruit Show.

The exhibition of fruits, which was held in conjunction with the National Dahlia show, was remarkable on account of the general good quality of the exhibits. Grapes were grand throughout, and they were, moreover, numerous.

The Collections.—In the leading class for a collection of not less than twenty dishes of fruit, there was a fine lot of produce, and competition was keen. Mr. H. W. Ward, Longford Castle Gardens, Salisbury, won the 1st prize with a very handsome lot. The bunches of Gros Maroc and Foster's Seedling Grapes were of high quality, and the dishes of Brunswick Fig, Goshawk Peach, Melons, Queen and Smooth Cayenne Pines, were also of first quality. Other dishes included Morello Cherries, Pine-apple Nectarine, Worcester Pearmain Apple, Mulberries, Moor Park Apricots, Currants, Gooseberries, and Green Gages. Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, was a very close 2nd, with Grapes Madresfield Court, Foster's Seedling, Alnwick Seedling, and Muscats of equal merit to the Grapes in Mr. Ward's collection. Pines were the same, and among the best of the remainder were Turkey Fig, Barrington and Belgrade Peaches, Morello Cherries, Astrachan Apple, Kirke's Plum, and others; a dish of Garibaldi Strawberry was also to be seen here. 3rd, came Mr. J. McIndoe, Hutton Hall Gardens, Guisborough, who excelled in his Grapes, showing Gros Maroc and Gros Colmar, in well-finished bunches; and among the other dishes were Citrons, Oranges, Tacsonia fruits, &c., besides Peaches, Nectarines, and Plums.



Fig. 47.—Expanding plant-collar. (See p. 306.)

The leader in the competition for the smaller collection of twelve dishes was Mr. R. Parker, gr. to J. Corbett, Esq., M.P., Impney, Droitwich, who showed well, Alicante and Muscat of Alexandria Grapes, Blenheim Orange Melon, Kirke's Plum, and Royal George Peach. Closely following was Mr. A. Miller, gr. to W. H. Long, Esq., Trowbridge, Wilts, who was best in his smooth Cayenne Pine, Pine-apple Nectarine, two varieties of Melon, Williams' Pears, and Brunswick Figs. Mr. T. Coomber, gr. to J. A. Rolls, Esq., The Hendre, Monmouth, who was 3rd, contributed well finished bunches of Gros Maroc Grapes, Charlotte Rothschild Pine, and Kirke's Plum.

Mr. J. Dawes, gr. to M. Biddulph, Esq., Ledbury, was leading in the small collection (eight dishes), but the display here was not very remarkable. Mr. Dawes chief dishes being good examples of Golden Perfection Melon, Muscat Grapes, and richly coloured Doyenné Boussoch Pears.

Grapes formed the leading feature of the show. In the competition for the best collection of ten varieties, two bunches of each, much interest was centered, and the competitors ran each other very closely. Mr. J. H. Goodacre, was placed 1st out of six, having eight black varieties in the lot. The whole of the bunches were of good form, and well-finished—Alicante, Muscat of Alexandria, and Black Hamburgh, being the best represented, Alnwick Seedling, Gros Maroc, Lady Downes' and Foster's Seedling were also of fine quality. The best collection of five varieties was that of Mr. H. Taylor, gr. to J. Chaffin, Esq., Bath, who had a fairly easy victory with first-rate quality fruits, all showing an excellent finish, Alicante, Alnwick Seedling, and Muscats, being most noticeable.

In the several classes for three bunches of a particular variety, there was a number of very fine bunches, and as many as ten competitors entered the lists for the any white grape not otherwise specified. Mr. W. Allan, gr. to Lord Suffield, Gunton Park, Norwich, leading with Foster's Seedling in first-rate condition, and richly coloured. Mr. W. Taylor, was to the fore with Alicantes, and again with Muscats, with well-finished bunches; and Mr. J. Bury, Tewkesbury Lodge, Forest Hill, won the honours for Black Hamburgh in a good competition, showing large berried, even, and well-finished bunches. Mr. J. Hollingworth showed the finest Gros Maroc; and Mr. J. Gibson, Draycott Gardens, Chippenham, won the leading place for Madresfield Court; while Mr. A. G. Hookings, Hurst Side, East Moulsey, led for the unspecified black varieties, the exhibits in all cases being highly creditable.

Peaches and Nectarines.—In the classes for Peaches and Nectarines there was a good display, and Mr. W. H. Divers, Ketton Hall Gardens, Stamford, who showed in all classes, won 1st in four instances, being beaten for a single dish of Peaches by Mr. Duncan, gr. to C. T. Lucas, Esq., Warnham Court, Horsham, who had Barrington in large and well-coloured examples. Mr. Divers' successes were for four dishes Peaches, four dishes Nectarines, and one dish of Pine-apple Nectarines.

In the other classes there were Peaches Prince of Wales, Princess of Wales, Crimson Galande; and of Nectarines, Victoria, Pine-apple, and Spencer. Mr. J. McIndoe, gr. to Sir J. W. Pease, Bt., Guisborough, was 2nd for the four Peaches and four Nectarines, having Golden Eagle, and Stirling Castle of the former; and of Nectarines, Pitmaston Orange and Humboldt.

In the class for six dishes of Peaches and six of Nectarines, Mr. Divers was the only exhibitor, and was deservedly awarded 1st; he showed as before.

Various.—Melons were extensively shown, there being twenty-four green-fleshed and twenty scarlet-fleshed fruits, the chief prizes for which were respectively awarded to Mr. G. S. Wright, gr. to C. L. Campbell, Esq., Glewston Court, Ross, Hereford; and Mr. J. Rodbourne, Coombe House, Croydon.

Plums were numerous, and of good quality, and the leading prizes were awarded as follows:—For four varieties, red, Mr. H. W. Ward, Ponds, and Magnum bonum, being the two best. Four varieties yellow and green, Mr. T. N. Penfold, gr. to the Rev. Canon Bridges, Beddington, with Magnum bonum, Greengage, Jefferson, and Washington. There were twelve lots. Mr. Goodacre, with capital Kirke's Goliath and Prince Engleheart, won 1st for purple fruits. Mr. Wallis, gr. to R. Sneyd, Esq., Keele Hall, Newcastle (Staff.), won 1st for figs, showing white Ischia, and for a collection of six varieties of Tomatos. Mr. C. J. Goldsmith, Beckenham, was placed 1st with a really grand lot of fruits in a very good and close competition; Hackwood Park Prolific, Stamfordian, and Perfection, were fine examples.

Messrs. Sutton & Sons, Reading, offered prizes for their Tomatos, and Mr. C. J. Waite, Glenhurst Gardens, Esher, won 1st with capital fruits of Perfection; and the Standard Manufacturing Co., offered two of their implements for the most successful exhibitor in several of the classes taken together, Mr. Divers winning both.

Apples and Pears were of no special merit, Mr. A. Waterman, Preston Hall, Aylesford, Kent, had the best Apples in the collection of twelve kinds, and also for three dishes, having good, clean examples of Gravenstein, Cellini, Grenadier, Eclinville, Stirling Castle, Duchess of Oldenburg, Worcester Pearmain, &c. Mr. J. Butler, Sittingbourne, had the best collection of ten and also of three dishes of Pears, in which

were Doyenné Boussach, Dunmore, William's, Louise Bonne, and Beurré d'Amanlis.

Cut Flowers and Plants.—In the amateurs' classes, the 1st place for Gladioli was won by the Rev. H. H. D'Ombrain, Westwell Vicarage, Ashford, Kent, who had eighteen very creditable spikes. Mr. G. S. Walters, Calne, Wilts, sent the best twelve; and the finest lot of Hollyhocks were from Mr. W. H. Apthorpe, Cambridge.

In the open section, prizes were offered for a collection of not more than 100 spikes of Gladioli, Messrs. J. B. Burrell & Co., Cambridge, taking 1st for a very good lot, well flowered, without any competition.

Mr. G. S. Walters and Mr. W. J. Jones, Sutton, were respectively 1st for Quilled French Asters; and Messrs. Webb & Brand led for Hollyhocks.

For a collection of cut stove and greenhouse flowers, Mr. J. Prewett, Swiss Nursery, Hammersmith, led with a few good Orchids and Crinums.

Messrs. J. Laing & Sons, Forest Hill, had a good group of early flowering varieties of Chrysanthemum indicum, with C. Wermig and Madame Desgranges in good form.

Non-competing Exhibits.—These comprised some high-class fruits, but they were not very numerous. From the gardens of A. Dixon, Esq., Cherkley Court, Leatherhead, there were a few tropical fruits, which included the Citron, Horned Orange, Grenadilla, Indian Water Lemon (Passiflora laurifolia), and Monstera deliciosa. A large and representative lot of well-grown Apples and Pears (about 170 dishes) was sent by Messrs. J. Veitch & Sons, Chelsea, in which the most popular varieties were well displayed; Grenadier, Stone's, Peasgood's Nonsuch, Queen, Lord Suffield, and Stirling Castle Apples were noticed; and of Pears, Williams', Louise Bonne, Clapp's Favourite, and Madame Treyve. About one hundred dishes of Apples were shown by Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex. Well-grown fruits of Lord Grosvenor, Queen, Duchess of Oldenburg, Hawthornden, Keswick, Lady Sudeley, Russian Transparent, and others, were noticed.

From Messrs. Peed & Son, Streatham, was a collection of well-grown Grapes of Gros Maroc and of Trebbiano; also Plums and Apples in popular varieties. Cut blooms of Dahlias and miscellaneous herbaceous flowers were also shown. Messrs. G. Bunyard & Co., Maidstone, besides showing some grand Apples, had cut blooms of Roses, Dahlias, African Marigolds, Hydrangeas, Asters, Gladioli, &c., making a good display. Messrs. Paul & Son, Cheshunt, had a collection of hardy herbaceous flowers; and Mr. E. F. Such, Maidenhead, sent Phloxes, Gaillardias, Pyrethrums, Sweet Peas, Centaureas, &c. Messrs. J. Laing & Sons a good group of Tuberous Begonias; and Messrs. Cannell & Sons, Swanley, Kent, also had a group of the same; and Lilium auratum vars. were contributed by Mr. W. Gordon, Twickenham.

THE ROYAL CALEDONIAN HORTICULTURAL.

THE autumn show of this Society was held in the Waverley Market, Edinburgh, on the 11th and 12th inst. As has already been announced, a Plum Congress was held in connection with the ordinary show, the objects of which were to test varieties of Plums most suitable to the climate of Scotland, and to settle the correct nomenclature. Although late in moving in the matter, the committee are to be congratulated on having brought together a thoroughly representative collection of Plums from all parts of Scotland, with not a few samples from England and Ireland, which will help to clear away confusion in respect of names. The jurors, Messrs. Barron, Chiswick; Webster, Gordon Castle; and Fairgreive, Dunkeld, will not finish their labours till the 12th, on which date, also, the Conference is to be held; therefore details must be held over till next week.

The show in nearly every section exceeds in extent any previous autumn one of the Society. The entries total about 2000, which is about 700 in excess of the largest previous total. Some idea of the increase of entries may be gathered from the fact that 2580 extra feet of tables were required to accommodate the extra samples.

The access of southern exhibitors was great, and their exhibits were new and charming features of the show. Messrs. James Veitch & Sons, Chelsea, occupied a long table, with the most perfect examples of Nepenthes in variety that has ever been exhibited in Scotland. Notable among the numerous species and hybrids was their splendid N. Dicksonii×, which to the horticulturists and the uninitiated alike, was the cynosure of the collection. Their collection of specimens of hardy ornamental trees and shrubs was also a most interesting and instructive feature, and their collection of Apples and Pears on the same table was the most remarkable in a very notable show.

Messrs. Birkenhead, of Sale, exhibited one of the most varied and interesting collections of Ferns ever seen at an Edinburgh show. Their table was the most attractive to many; the endless variety and graceful forms, combined with the superior examples of culture, as in the case of Rhipidopteris peltata and other species, rarely seen at flower shows or anywhere else well done, excited general admiration.

From the Royal Botanic Gardens, Edinburgh, a fine collection of similar interest to the two foregoing was exhibited, many species of Sarracenia, Nepenthes, Droseras, and stove and greenhouse aquatics, &c., were shown in excellent character and cultural condition.

Many others exhibited collections which were worthy of notice. Messrs. Dicksons & Co., Waterloo place, Edinburgh, occupied a large table with a central group of miscellaneous stove and greenhouse plants, margined with a numerous collection of Apples, Pears, and Plums, of their own growth, interspersed with boxes of their Carnations, Picotees, Phloxes, and other florists' flowers. Messrs. Methven & Sons, Princes Street, Edinburgh, exhibited a well-arranged table rich in stove and greenhouse plants—Liliums, Pancratiums, and Orchids, in variety, giving a flowery aspect to the graceful foliage of Palms, Ferns, &c. Messrs. Munro & Ferguson, St. Andrews Street, put up a handsome table of Liliums, conspicuous among the latter being L. lancifolium corymbiflorum; autumn-flowering Chrysanthemums, herbaceous plants, in good style. Messrs. Lamont & Sons, Hope Street, Edinburgh, were well represented in some of their specialties, such as single and pompon Dahlias, Chrysanthemums, and other florists' flowers. D. & W. Croll, Dundee, had a remarkable exhibit of Maréchal Niel Rose and Teas generally, from the open air, the numerous bunches of flowers, and the large size of the individual buds and blooms, being subject of general comment as coming from such a quarter.

Mr. Deverill, of Banbury, had an interesting exhibit of Onions, among which Ailsa Craig, Anglo-Spanish, the latter an improved Rousham Park, having greater depth of bulb, while the circumference was 18½ inches. Improved Roxton, of which splendid bulbs were exhibited, appeared a very superior keeping sort.

Mr. John Forbes, Hawick, put up a very attractive lot of Hollyhocks, Dahlias, Antirrhinums, and other florists' flowers. Mr. Campbell, High Blantyre, had an excellent collection of Dahlias, blooms of Hollyhocks, Carnations, and Picotees. Among the Carnations were many blooms of Mrs. Muir, a new seedling, pure white, along with which was a plant of the same, showing its habit of growth. The plant is compact, grassy, and free blooming. The flowers are medium sized, very neat in style, of good substance, and pure in colour.

Messrs. Laing & Sons, Forest Hill, London, had an interesting collection of Chrysanthemums, including their new var. Grace Attick, a most distinct form of the early flowering section, along with double and single-flowered Begonias of rare excellence. Mr. John Downie occupied a large table with a very choice collection of tuberous Begonias, which formed one of the gayest features of the hall.

The fruit, however, formed one of the chief points of excellence of the show. Grapes in particular were abundant and very superior. The Scotch growers had it all their own way, though some of those that distinguished themselves at the Crystal Palace show last week entered the lists with them found no place.

In the collection of six bunches, 1st honours were taken easily by Mr. George Mackinnon, Melville Castle, with superb Black Alicante, Muscat of Alexandria, Golden Hamburgh, Gros Maroc, and Black Hamburgh. Mr. Boyd, Callander House, Falkirk, was placed 2nd, with very fine bunches of Muscat Hamburgh, Black Alicante, Madresfield Court, and Black Hamburgh; Mr. Murray, Parkhall, being a very good 3rd, with heavy but hardly finished bunches.

In the next class of Grapes—four bunches—Mr. Boyd took the 1st position easily with grand samples of Muscat Hamburgh and Black Hamburgh; Mr. Murray, Parkhall, being 2nd; and Mr. T. Stratton, Lumsden, Aberdeen, a new candidate for honours at these shows, was very worthily placed 3rd.

In the class of two bunches, Muscats, Mr. McHattie, Newbattle Abbey, distanced all competitors by many points, the superior finish of his bunches being much commented upon.

In the smaller classes of Grapes, the principal prize-takers were Messrs. S. Paterson, Langholm; J. Morrison, Archerfield; Jas. Buchanan, Ashburn, Gourock; McConnochie, Cameron House; Collins, Walker, Burn, Caldwell, Langholm; Boyd, Callander House; Murray, Parkhall; McKinnon, and others.

In collections of twelve dishes of fruit, Mr. George McKinnon stood conspicuously 1st with a faultless lot, comprising Grapes — Black Alicante, Muscat Alexandria, Golden Hamburgh, Gros Maroc, Black Hamburgh; Pear Pitmaston Duchess; Plum Jefferson; Nectarine Pitmaston Orange; Apple Queen; an excellent Melon; a dish of Figs; and superior Peaches. Mr. McIndoe, Hutton Hall, was placed 2nd; and Mrs. McKelvie, Broxmouth, 3rd.

The collection of eight dishes brought several excellent lots. The 1st position was taken by Mr Murray, Culzean Castle; Mr. Morrison, Archerfield, and Mr. McIntyre, the Glen, being placed second, and third respectively.

Hardy fruit was well represented in quantity, and above the average in quality, especially in Apples and Plums. Collections of twelve dishes brought the well-known names of Fairgreive, Dunkeld; Dow, Newbyth; and Brown, Abercairney to the front as winners, in the order named.

Orchard house fruit, for which the schedule provided a prize for collections of twelve dishes, was not numerous, Messrs. McIndoe and McKinnon running each other very hard for first position, which fell to the former. In Pine-apples the show was fuller than ordinary, though quality could not be said to range higher than the average. Mr. Muir, Margam Park, tabled the best Queen; Mr. Boyd, the second best; Mr. McIntyre, the Glen, Innerleithen, and Mr. McIndoe were placed in the same relative positions, with Smooth Cayenne; and in the class of two Pine-apples of any sort, Mr. McIntyre had no competitor.

Plants.—In this section, perhaps, the chief feature, among competitive lots, was the tables arranged for effect by gardeners. They were 20 feet by 5 feet, and brought three competitors forward, viz., R. C. Fraser, Garelochhead; R. Grossart, Oswald House, Edinburgh; and J. McIntyre, Darlington; who were placed by the judges in the order named. The tables showed a marked improvement in each case in respect of taste in arrangement, and the plants in each were excellent as regards culture.

Two other tables of plants demand special notice, viz., those of Messrs. R. B. Laird & Sons, and Ireland & Thomson, which were the only competitive ones from nurserymen. They were 40 feet by 10 feet, and so closely do these two firms run each other at these shows that it was with difficulty the judges arrived at a decision on this occasion. Laird & Sons were eventually, however, placed 1st. The last-named firm also took 1st honours in twelve Chrysanthemums, which were fine samples of their kind; Munro & Ferguson being an excellent 2nd.

Ireland & Thomson were placed 1st for a collection of Conifers in pots or tubs; Messrs. James Dickson & Son being 2nd. Both collections were comprehensive, and well grown.

In twelve table plants, Laird & Sons were placed 1st; and A. F. Anderson, Moncreiff Nursery, Perth, 2nd. In the gardeners' classes, the familiar names Paterson, Fowler, Bald, Grossart, McIntyre (of Darlington), and McIntyre (of Inverleithen), Curror, Dalkeith, were conspicuous among the winners.

Cut Flowers.—These were numerous and fine. In the gardeners' classes, the best twelve Gladioli came from Mr. Brydon, Tweedbank, Inverleithen; the best five spikes Hollyhocks, from Mr. Brown, Abercairney, Perthshire; the best twelve blooms Hollyhocks, from Mr. McIntyre, The Glen; the best twelve show Dahlias, from Mr. J. Pearson, Beechwood; the best twelve fancy Dahlias, from Mr. Muir, Mearns; the best twelve trusses single Dahlias, from Mr. Pearson; the best twenty-four Roses, from Mr. Parlane, Helensburgh; the best twelve trusses stove and greenhouse plants, from Mr. Fraser, Garelochhead; and the best twelve Chrysanthemum blooms, from Mr. Rushton, Corstorphine.

In the nurserymen's classes, Mr. Campbell, Gourock, took 1st prize for thirty Gladioli; Mr. Robertson, Helensburgh, being a good 2nd.

In eleven spikes Hollyhocks, Mr. Forbes, Hawick,

was placed 1st, with very superior samples; Kerr, of Roxburgh, being the only other competitor, took the 2nd prize, with also good spikes.

In eighteen trusses, single Dahlias, Messrs. Laird & Sons, were to the front; Mr. J. Lamont being a worthy 2nd; Messrs. Cocker & Sons, Aberdeen, distanced all opponents in twenty-four show Dahlias, his lot being very superior. The same firm was also 1st in thirty-six Roses, distinct, and also in eighteen Roses, though in both these classes they were closely contested by fine lots from Hugh Dickson, Belfast, and Smith & Son, Stranraer.

Vegetables.—These were in greater force, and if possible, of higher excellence than they were ever seen here before. The Veitch Memorial prize, and the prize of Messrs. Sutton & Sons, Reading, for collections, brought out competitors from far and near, south and north. The Veitch Memorial was won by Mr. T. Fender, Crieff; Mr. Cairns, Jedburgh, being 2nd; and Mr. Muir, Margam, third. The first in the competition for Messrs. Sutton's prize was Mr. Bigham, Edgerston; 2nd, D. McBean, Johnstone; 3rd, J. Harkness, Berwick.

Among extraordinary exhibits, a fruit and leaf of Podophyllum peltatum, and fine sprays of Hop in fruit, from Dr. Paterson, Bridge of Allan, were objects of interest to all—the former because all but unknown, and the latter because rarely brought to perfection in the open air in Scotland.

BATH FLORAL FETE.

Sept. 4 and 5.—This was held, as usual, under the auspices of the committee of the Bath Floral *Fête*, and proved one of the best ever held. The tents were well filled, and the vegetables, enough to fill two other tents, had to be staged in the open air.

Plants, Fuchsias.—Fuchsias always lead the way in the schedule of prizes, and, as usual, some very fine plants were staged. The best nine came from Mr. G. Tucker, gr. to Major W. P. Clark, Trowbridge, who had, of dark varieties, Doel's Favourite, Thomas King, Bountiful, Charming, dark varieties; Miss Lucy Finnis, double white corolla; Lye's Favourite, Harriett Lye, Marginata, and C. Rickman, light varieties.

Mr. A. Hawkins, gr. to T. Jolly, Esq., Bath, had the best six plants, staging Final, Charming, Mrs. Rundell, Arab, Beauty of Wilts, and Lye's Favourite.

The Rev. C. C. Layard (Mr. J. Wister, gr.), had the best four specimens. The best light Fuchsia was Arabella, from Mr. G. Tucker; and Mr. Tucker also had the best dark in Doel's Favourite.

Plants.—The best twelve foliage and six flowering plants shown, in a group, came from Mr. James Cypher, nurseryman, Cheltenham, who put up a very fine lot, consisting of Bougainvillea glabra, Statice profusa, Ericas Eweriana and Austiniana, Clerodendron Balfourianum, and a huge Phœnocoma; and of foliaged plants Crotons Disraeli, angustifolius, Sunset, and Queen Victoria, Cordyline indivisa, Latania borbonica, Cycas circinalis, Kentias Canterburyana, Fosteriana, Balmoreana, Phœnix rupicola and Dasylirion acrotrichum, a very imposing group.

Mr. Currey had the best eight ornamental-foliaged plants.

The best specimen foliaged plant was Latania borbonica, from Mr. W. C. Drummond, Bath.

The best six stove and greenhouse plants in bloom came from Mr. Taylor, gr. to C. W. Mackillop, Esq., Bath, who staged fine fresh examples of Erica Eweriana, Dipladenia amabilis, Ixora Westii, Allamanda Hendersoni, Bougainvillea glabra, and Lapageria rosea.

The best specimen stove plant was a very large and finely-bloomed specimen of Allamanda Hendersoni, from Mr. Mackillop.

The best specimen greenhouse plant was Statice profusa, from Mr. J. Cypher.

There were two collections of Orchids, though it is getting late for them. Mr. G. Pymm, gr. to Mr. Gouldsmith, Trowbridge, was 1st, with Cattleya Harrisoniana violacea, C. Leopoldi, Vanda suavis, Zygopetalum Mackayii, Lælia Leeana, and Oncidium flexuosum.

The best Heaths came from Mr. Cypher. The best new plant was Ornithogalum thyrsiflorum, from Mr. J. F. Mould.

The twelve best exotic Ferns came from Mr. G. Tucker. Mr. Marchant had the best six plants. The best specimen was Adiantum gracillimum, from Mr. Trinkle; and Mr. E. Hall had the best fifteen British Ferns.

Zonal Pelargoniums, the best we have seen this season, were finely shown by Mr. G. Tucker; plants of very superior merit. Mr. H. Jones had the best four plants. Variegated Pelargoniums were large and well grown, the bicolor varieties predominating. The Ivy-leaved varieties were well grown, but not sufficiently advanced in bloom.

Tuberous-rooted Begonias were a very fine feature, some of the plants being grandly grown and flowered. Mr. C. Rickman was 1st in both classes for six single and six double varieties. Mr. W. Grizell, gr. to W. Clifford, Esq., Falfield, was 1st with six doubles; and Mr. Cole, gr. to S. Treadwell, Esq., Bath, with six singles.

Cut flowers are always a fine feature here. Collections of thirty-six spikes of Gladioli were very attractive; Mr. G. S. Walters, nurseryman, Calne, was 1st; and Mr. R. H. Poynter, nurseryman, Taunton, 2nd. The best twelve came from Mr. S. Tottle, Taunton. Dahlias were very good indeed; Messrs. Heath & Son, nurserymen, Cheltenham, were 1st, with twenty-four varieties, the following being in excellent condition:—Mrs. G. R. Jeffard, Seraph, Gloire de Lyon, a white self; Vice-President, R. T. Rawlings, Crimson King, George Rawlings, James Vick, Ethel Britton, Eclipse, Georgiana, James Cocker, and Mrs. Gladstone. Mr. Thomas Hobbs, Lower Easton, Bristol, was 1st with twelve varieties, a very good stand indeed. Mr. Humphries had the best nine fancies. Mr. T. Carr had the best stand of twelve bunches of single Dahlias, all set up in good symmetrical bunches.

Roses were admirably shown, and the stand of thirty-six varieties with which Messrs. J. Jefferies & Son, nurserymen, Cirencester, took the 1st prize, contained some very fine blooms; such as Mdlle. Sophie Fropot, Alfred Colomb, Charles Lamb, Mrs. J. Laing, Ulrich Brunner, Prince Arthur, Madame Marie Verdier, La France, &c. 2nd, Mr. J. Mattock, nurseryman, Oxford, who led for twenty-four varieties; some of his best flowers were distinct from the foregoing, as follows:—Merveille de Lyon, Sénateur Vaisse, J. S. Mill, Her Majesty, Souvenir de la Malmaison, Souvenir d'Eliseié Vardon, Catherine Mermet, and Anna Olivier. Messrs. Heath & Son had the best twelve varieties, of Verbenas; zonal Pelargoniums, were splendidly shown in twenty-four bunches by Mr. J. Mattock; French and German Asters, Phloxes, and Hollyhocks, were all highly attractive features.

The best twenty-four bunches of cut flowers came from Mr. W. Richards, Stapleton, consisting largely of blooms of stove and greenhouse plants; Mr. Shilton, gr. to A. K. Wart, Esq., Clifton, was a good 2nd.

The best collection of cut flowers of herbaceous or hardy plants came from Messrs. G. Cooling & Sons, a very good lot indeed.

Mr. Thomas Jolly had the 1st prize for an excellent collection of twelve bunches of hardy annuals.

Fruit.—The fruit department was remarkably good,—a numerous and very fine display throughout. Mr. A. Miller, gr. to W. H. Long, Esq., M.P., Rood Ashton, Trowbridge, was the only exhibitor of eight dishes, staging excellent dishes of Alicante and Muscat of Alexandria Grapes, Bellegarde Peaches Pine-apple Nectarine, Jefferson's Plum, Brunswick Figs, Bon Chrétien Pears, and Rood Ashton Seedling Melon.

Collections of Grapes: Mr. W. Taylor, gr. to Mr. Alderman Chaffin, Bath, was 1st, with a superb collection of eight bunches, having one bunch each of Alnwick Seedling and Madresfield Court, three of Alicante, and three of Muscat of Alexandria. Mr. J. Burey, gr. to C. Bayer, Esq., Forest Hill, S.E., was 2nd with very good bunches of Black Hamburgh, Madresfield Court, Alnwick Seedling, and Foster's Seedling, showing two of each. Mr. Burey had the best three bunches of Black Hamburgh, very fine indeed; Mr. Taylor had the best two bunches of Muscat of Alexandria, large and finely finished; Mr. J. Atwell, gr. to G. B. Brain, Esq., Stoke Bishop, had the best two bunches of any other white, in Foster's Seedling, very fine indeed. Mr. Tayler was 1st with two bunches of any other black, having superb Alnwick Seedling, with two bunches grown within 6 miles of the Guildhall, Bath; Mr. J. Fortt was placed 1st with Muscat of Alexandria.

Melons were numerous, green and scarlet-fleshed varieties being shown in great abundance.

The best dish of nine Peaches was of Bellegarde from Mr. A. Miller. Mr. Chalk, gr. to G. Read, Esq., Salisbury, had the best six fruits, showing Barrington.

The best nine Nectarines were Pine-apple from Mr. R. Hooper Taylor, Bath. Mr. Horne, Bath, had the best six, showing Victoria.

Mr. Haskell, Weston, had the best dish of Plums, not Green Gages, showing very fine Jeffersons. Very fine Kirke's, Victoria, Magnum Bonum, Washington, and Guthrie's late Gages were shown in this class.

The best dish of culinary Plums was of Diamond, from Mr. G. Osborne. Other good dishes were those of Prince Englebert, Goliath, Magnum Bonum, Washington, and Victoria.

In the class for Green Gage Plums, a large number of dishes were staged, some very fine fruit being shown. Figs and Morello Cherries were both good, and fine Cob and Barcelona Nuts were also staged. Bon Chrétien was the best dessert Pear.

The best three dishes of dessert Apples came from Mr. E. Hall, of Bath, who had Beauty of Bath, Red Quarrenden, and Astrachan. The best single dish of dessert Apples was Kerry Pippin.

Culinary Apples were numerous and wonderfully fine; the best three dishes came from Mr. A. Miller, who had splendid examples of Eclinville, Lord Suffield, and Nelson's Glory. The best single dish was Eclinville, from Mr. Miller.

A very interesting collection of forty-eight dishes of Apples and Pears was shown by Messrs. G. Cooling & Sons, nurserymen, Bath, not for competition.

Vegetables were so extensively shown, that they had to be arranged on tables on the terrace by the side of the Great Western Railway, which runs through the Sydney Gardens, where they were seen to the best advantage.

The best collection of twelve varieties came from Mr. W. E. Drax—a very fine lot indeed, admirably staged; Lady Theodora Guest was 2nd.

Special prizes were offered by Messrs. Sutton & Sons, Reading, for the best six varieties, and Mr. W. E. Drax and Lady T. Guest were again 1st and 2nd.

In the class for six dishes, the special prizes by Messrs. Webb & Sons, nurserymen, Stourbridge, Mr. Waite, Glenhurst, Esher, was 1st; and Mr. G. Garraway 2nd.

There were several classes for vegetables, both open and for cottagers, and they were very good throughout.

THE NATIONAL CHRYSANTHEMUM

held its first exhibition at Westminster, on Wednesday and Thursday, September 11 and 12, when the Chrysanthemum itself occupied but a small portion of the display; Dahlias, on the other hand, being largely shown. For a group of Chrysanthemums, Messrs. J. Laing & Son, Forest Hill, were 1st, showing well flowered plants — Mrs. J. Burrell, C. Wermig, Madame Desgrange, &c., Mr. J. R. Chard, Stoke Newington, was 2nd, also showing well. Prizes offered for a collection of cut Chrysanthemums, brought out a good lot of blooms. Mr. Owen, Maidenhead, taking 1st, having forty-one varieties, showing a great number of pompons, and of others there were Mrs. Burrell, Mons. P. Van Geert, Golden Madame Desgrange, &c. Messrs. J. Laing & Son, Forest Hill, were 2nd, with a capital lot of fewer varieties, including Mrs. Cullingford, C. Wermig, Mdlle. Leoni Lassali, &c. Mr. J. Blackburne, gr. to J. Scott, jr., Esq., Elmstead Grange, Chislehurst, was 1st, for twelve blooms of Madame Desgrange, leading with excellent blooms in a large competition; and for six bunches of the same variety he was again successful. For six bunches of any yellow variety, Mr. H. Neary, gr. to Rev. R. W. Powell, Holy Innocents, Hornsey, led, with capital blooms of yellow Madame Desgrange; other exhibits in this section being poor. In the amateurs' class, Mr. D. B. Crane, Highgate, led, with good flowers of Sam Henshaw, an incurved Japanese, of whitish-crimson colour; Mrs. Burrell, Madame C. Desgrange, and Pynaert van Geert. Prizes were offered for a collection of spikes of Gladioli. Messrs. J. Burrell & Co., Cambridge, were the only exhibitors, and were awarded 1st for a bright, well-flowered lot. Dahlias are extensively dealt with in the report of the National Dahlia Society's show, on another page, that we need not enter into detail here. Mr. C. Turner, Slough, had the best sixty, and other prize-winners in the openclasses were Messrs. Keynes, Williams & Co., Salisbury; Mr. J. Walker, Thame; Messrs. J. Cheal & Sons, Crawley; and Messrs. J. Burrell & Co. Miscellaneous exhibits were numerous. Mr. T. S. Ware had a group of plants of Mrs. Hawkins. Mr. Ware also contributed a very extensive lot of Dahlias, artistically arranged. Lilium auratum varieties were sent by Mr. W. Gordon, Twickenham. Mr. E. F. Such, Maidenhead, had a number of

Dahlias, and a collection of herbaceous plants in variety. From Messrs. H. Cannell & Sons, Swanley, Kent, a number of show, Cactus, single, and pompon Dahlias were sent, and a Silver Medal was awarded. Fruit was represented by collections of Apples of good quality from Messrs. J. Laing & Son, and from Messrs. J. Peed & Sons, Streatham, both having popular varieties. A few Plums were also sent by Messrs. Laing. A collection of Palms was sent by Mr. W. Holmes, Hackney. Messrs. Beale had horticultural sundries, and the Ichthemic manure was also shown. Messrs. Sam. Deards & Co., New Bond Street, had samples of their Uncle Sam radiator and dry glazing. A Conference was held on Wednesday afternoon, when papers by Mr. Piercy and Mr. Doughty on "Early Chrysanthemums" and "Naturally-grown Chrysanthemums" were read respectively.

FLORAL COMMITTEE.

A meeting of this body took place in the St. Stephen's Hall of the Royal Aquarium on the 11th inst., Mr. E. Sanderson presiding, there being a good attendance. First-class Certificates of Merit were accorded to the following Chrysanthemums:—To Sam Henshaw, an early flowering incurved Japanese variety, with massive petals of a pale silvery colour, from Mr. D. B. Crane, Highgate; and to Comtesse F. de Carial, a semi-incurved early flowering variety, buff, with a deeper shade on the edges, from Messrs. J. Laing & Co. To the following show Dahlias:—Crimson Globe, bright crimson; John Hickling, a golden-yellow self; to Duke of Fife, a brilliant vermilion-crimson flower that improves in quality with time; and Alice Emily, yellow, shaded with brownish-buff, from Messrs. Keynes, Williams & Co. To single Dahlias W. C. Harvey, buff, with a wine-crimson ring round the eye; Miss Jefferies, delicate pink, with a broad crimson ring round the eye; and Duchess of Fife, amber, with side edgings of reddish-orange—quite distinct, from Mr. T. S. Ware. To Pompon Dahlia Cleopatra, plum, with a bright shading of purple; and William Searl, orange-buff—very distinct, from Mr. C. Turner. To show Dahlia Mrs. West, a highly promising variety in the way of Mrs. Dodds, with a little more colour, and a better outline and petal; and to Cactus Dahlia Centenary, bright deep crimson, from Mr. J. T. West, Brentwood. To single Dahlias Northern Star, red, with side margins of pale yellow; and Eclipse, rosy-mauve and salmon, with a broad crimson ring round the eye; and to Cactus Dahlia Centennial, magenta-crimson, with side-edgings of maroon, fine and distinct, from Messrs. J. Cheal & Son. To single Dahlia Gruppo, of a peculiar shade of orange-salmon, so popular now, a stout and well-formed flower, from Mr. T. W. Girdlestone, Sunningdale. To Gladiolus Gertrude, pure white, extra fine; and Lilian, white, with slight stripes of rosy-carmine, from Messrs. J. Burrell & Son. A fine strain of quilled Asters, shown by Mr. R. Dean, seed-grower, Ealing, was highly commended for the strain; and a similar award was made to Plant-collars, exhibited to Messrs. R. Beale & Co., New Southgate.

NATURALLY GROWN CHRYSANTHEMUMS.*

In consequence of the varying conditions under which Chrysanthemums are grown, owing to the difference in the practice of cultivators and in the climatic conditions of districts, it is somewhat difficult in referring to the treatment naturally grown plants for the production of exhibition blooms should receive to fix upon a starting point. Much, as the majority of you are aware, depends upon the strength of the plants, the firmness of the wood, and the treatment they have hitherto received.

Speaking as a southern grower, we will suppose that the plants have been well cultivated and are now strong and healthy. We will also assume that the wood is well solidified, and that they have their buds in various stages of development. At the outset, I will call your attention to a matter of the greatest importance, and that is the application of a rich top-dressing. We top-dress our plants at the end of July or early in August, a space of about 2 inches being left at the final potting for this purpose. About an inch of the material to be used is placed upon the surface of the pots and pressed down rather firmly, the application being made when the soil in the pots is moderately dry, so that it does not work into a paste. The mixture used for top-dressing consists of one part of loam, one part of decayed manure, a small quantity of old mortar, and a sprinkling of bone-meal. For some time afterwards the plants are watered with a can, to which a rose is affixed to avoid the risk of the top-dressing being washed out of its place, or, indeed, being greatly disturbed. Whatever feeding the plants may have had previous to this surface dressing should be continued afterwards, as the top-dressing has no immediate effect unless a fertiliser of quick action be added to it. But the addition of manure that will act rapidly, I do not think absolutely necessary, although I used it previous to last year. Now if the surface-material be examined about three or four weeks after its application, strong healthy roots will be found working their way through it, and when the time arrives for housing the plants, the surface will be seen to be more or less covered with these healthy, vigorous feeders. In my opinion, nothing can be of greater assistance in the taking up of supplies of food so essential to the plants during the development of the buds than these newly-formed fibrous roots. This may at first appear to have but little bearing upon the future treatment of the plants. I have, however, explained this to show the condition the plants must be in as regards root-action. Having, then, secured plenty of newly-formed rootlets for the taking up of the food, we now feed chiefly with Clay's fertiliser and Thompson's vine manure. These we use alternately, at intervals of about eight days, but in this matter we are guided by the state of the weather. If prolonged dull wet weather sets in, the manures must be used more sparingly, so as not to cause too quick a growth, or the flower-stems will be weak, and the blooms lacking in substance. We use both manures at the rate of about 1 oz. to each plant of the strongest growing varieties, such as Fair Maid of Guernsey, Grandiflorum, Maiden's Blush, Princess of Wales and its sports, and the Queen family. The latter, I consider, the greatest feeders of all. In the case of weaker growing varieties, such as Meg Merrilies, Criterion, Jeanne Delaux, Lady Hardinge, and Mrs. W. Shipman, we use the manure more sparingly, about ¾ oz. to each plant being a very suitable quantity.

This rate of feeding is continued after the formation of the flower-buds, with an occasional watering with liquid manure from the cesspool, as an occasional change of food is, I believe, very beneficial to them. The water used is previously placed in a large tub standing in the open, fully exposed to atmospheric influences; hence it is maintained at a somewhat similar temperature to that of the soil about the roots. As a still further assistance to the plants, a bag containing soot is placed in this tub. This bag is refilled with soot about once a fortnight, as the goodness is found to be washed out of the soot in about that period. The plants are fed in this way until the blooms commence to expand, when all feeding ceases, excepting when the bloom is late, when a little sulphate of ammonia is applied. But I do not advise the use of the sulphate, excepting for the purpose of assisting in bringing forward late varieties, as it tends to shorten the durability of the blooms after their expansion.

Mildew is a most troublesome disease, and generally makes its appearance with us early in September. Sometimes it attacks the plants earlier, and this season they were attacked at the end of August. We are situated in a low-lying spot, and consequently the Chrysanthemums are more subject to its attacks than are those grown in gardens occupying a higher and drier situation. On its first appearance every plant is dusted with flowers-of-sulphur, usually early in the morning, when the leaves are wet with dew, as the sulphur will then adhere to the under surface. This is a very important point, as the rain cannot remove it from the under surface as it does from the upper surface. We seldom have to repeat its application, and I have not on any occasion, since adopting this practice, been troubled with mildew after housing the plants. Black-fly is very troublesome with us every season about this time. To eradicate this pest we dust, with tobacco-powder immediately it makes its appearance. Also after the plants are housed, and before the blooms commence to expand, we fumigate slightly two or three times to free the plants from aphis that may remain.

Much depends upon the time the plants are housed, especially the late varieties. As to the time of flowering, I do not care so much whether such varieties as Boule d'Or, or Grandiflorum and the like, form their buds early in August, or at the end of the month. Their blooms can be expanded by the middle of November. Last season I took Boule d'Or buds on September 1, and Grandiflorum buds on September 8, and exhibited them both in good form on November 12. These, with such varieties as the Princess of Teck and its sports, Barbara and Thunberg, should be housed earlier, and placed in a favourable position. The above varieties, with others correspondingly late, are placed on the side stages of the greenhouse immediately over the hot-water pipes, and by means of large flower-pots are raised as near to the glass as possible. These receive a little sulphate of ammonia twice a-week, and when the solar influences are not favourable, a little artificial heat must be applied. The cultivator must use his own judgment as to the time of housing his plants, taking into consideration the locality in which he resides, and the state of the buds (whether late or early, and also what means at his command for housing them. These are important points which will repay a little study, and certainly cannot be ignored by those who would achieve success in a close competition.

Having stated how our late varieties are treated, I will allude to the general collection. The earliest varieties, which require very little fire-heat, *i.e.*, only sufficient to maintain a dry atmosphere, are placed in an early vinery; and those that are naturally a little later, are arranged upon the centre stage of the greenhouse. All are raised as near to the glass as possible, by means of planks laid upon drain-pipes placed in an upright position upon the stage. The plants are placed upon the platform thus provided, the tallest plants being arranged at the back, and the dwarf ones towards the front. The plants nearest the front are raised by means of various-sized flower-pots, so that, when all is complete, they form a very sharp slope to the south. By this arrangement, the upper growth of every plant receives a full share of light and air—a matter of great importance if good blooms are expected. Again, every bud can be seen when the cultivator is standing in front of them, so that, should they require attention, a plant or two can easily be removed for that purpose.

I will not occupy your time in alluding to dressing the blooms, as most growers will have acquired that art from practice, and from the directions so well given in Mr. Molyneux's eminently practical book. But, in conclusion, I should like to draw your attention to one further important point, and that is arranging the colours on the exhibition board. I have noticed scores of stands arranged with sometimes as many as four, and even six, blooms of a bronze or other dark shade placed together. This is not as it should be, for by a judicious intermingling of the light and dark shades of colour, each bloom will add to the effect of its neighbour, and consequently to the attractions of the exhibition table. It may also make all the difference between a first or second place in a close competition.

* "Treatment of Plants Grown for the Production of Exhibition Blooms a Short Time Previous to the Shows." By J. Doughty, Angley Park, Cranbrook. Read at the National Chrysanthemum Society's Conference, September 11, 1889.

ABERDEEN.

AUGUST 22, 23, 24.—The annual Floral Fête of the Royal Horticultural Society of Aberdeen was held on the above dates in the Duthie Public Park, Aberdeen. The exhibition showed a decided advance over the one which was held last year, there being 1627 entries, as compared with 1549 in 1888.

In the large marquee, an erection of 220 feet in length, a line of tables ran along the middle, bearing entries in the section devoted to pot-plants sent in by professionals, while the smaller ones were given up to the exhibits of amateurs and working-men, and to vegetables.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending September 9, is furnished from the Meteorological Office:—

"The *weather* has been in a fair, but cloudy, condition very generally, with a good deal of wet mist or fog in different parts of the kingdom. During the night-time heavy dews were very prevalent, but the days have been dry over England.

"The *temperature* has been above the mean in all districts, the excess having ranged from 1° in 'England, E.,' and the Channel, to 3° in the north and west of Scotland and north of Ireland. The highest of the maximā, which were recorded either on the 6th or 9th, varied from 70° in Ireland

and the east and west of Scotland, to 73° in 'Scotland, N.,' the 'Midland Counties' and 'England, S.W.,' and to 74° in 'England, S.' The lowest of the minima, which were registered on somewhat variable dates, ranged from 37° in 'Scotland, E.,' and 39° in 'England, N.W.,' to 49° in 'Ireland, S.,' and 53° in the 'Channel Islands.' During the earlier part of the period the daily minima were very high for the time of year.

"The *rainfall* has been much less than the mean in all districts, and at many stations rain was altogether absent. The fall over the country generally has been less during this week than for any weekly period since that which ended on July 1.

"*Bright sunshine* has been more than it was last week over Scotland and the North of England, but less so in all other districts. The percentage of the possible amount of duration ranged from 19, in the 'Midland Counties,' to 36 in 'Scotland, E.,' 38 in England, N.W.,' and 48 in the 'Channel Islands.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (−) the Mean for the week ending September 9.	Above 42° for the Week.	Below 42° for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42° difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (−) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 +	100	0	+ 219	+ 4	6 —	166	27.0	31	23
2	2 +	98	0	+ 44	+ 5	7 —	134	18.3	36	30
3	2 +	109	0	+ 38	+ 7	6 —	123	16.5	29	28
4	1 +	123	0	+ 13	+ 112	5 —	129	18.0	24	32
5	2 +	121	0	+ 7	+ 60	5 —	120	20.1	19	29
6	2 +	132	0	+ 53	+ 75	6 —	123	16.4	26	31
7	3 +	111	0	+ 81	— 23	9 —	140	27.0	33	32
8	2 +	119	0	+ 75	— 1	8 —	127	20.4	38	31
9	2 +	128	0	— 27	+ 88	9 —	128	22.6	29	36
10	3 +	121	0	+ 41	— 53	6 —	157	25.6	24	27
11	2 +	124	0	+ 7	— 14	7 —	140	21.9	23	33
12	1 +	137	0	+ 96	— 16	7 —	134	17.4	48	41

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, September 12.

Prices remain the same as last week. *James Webber, Wholesale Apple Market.*

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Maiden Hair Fern, 12 bun.	4 0	9 0
Asters, Fr., per bun.	0 9	1 6	Mignonette, 12 bun.	1 0	4 0
— English, per bun.	2 0	4 0	Pansies, 12 bun.	1 0	2 0
Bouvardias, per bun.	0 6	0 9	Pelargoniums, 12 spr.	0 6	1 0
Carnations, 12 bun.	3 0	4 0	— scarlet, 12 spr.	0 3	0 6
— 12 blooms	1 0	2 0	Primulas, double, 12 sprays	0 9	1 0
Chrysanth., 12 bun.	2 0	4 0	Roses, Tea, per doz.	0 6	1 6
Chrysanth., 12 blms.	0 6	3 0	— coloured, dozen.	2 0	4 0
Cornflowers, 12 bun.	1 0	3 0	— red, per dozen	0 4	1 0
Dahlias, 12 bun.	2 0	4 0	— Safrano, dozen.	0 6	1 0
Eucharis, per dozen	2 0	4 0	Stephanotis, 12 spr.	2 0	4 0
Gaillardias, 12 bun.	2 0	4 0	Sunflowers, various, per 12 bun.	3 0	6 0
Gardenias, 12 blooms	2 0	4 0	Sweet Sultan, 12 bun.	3 0	4 0
Gladioli, 12 bun.	6 0	12 0	Sweet Peas, 12 bun.	2 0	4 0
— 12 sprays	1 0	1 6	Tuberoses, 12 blms.	0 4	1 0
Heliotropes, 12 spr.	0 6	1 0			
Lilium, various, 12 blooms	1 0	5 0			
Marguerites, 12 bun.	3 0	6 0			

Orchid bloom in variety, fairly good supply.

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 6	Peaches, per doz.	2 0	8 0
Filberts, per lb.	0 10	—	Pine-apples, Eng., lb.	1 6	3 0
Grapes, per lb.	0 6	2 6	— St. Michael, each	2 0	6 0
Lemons, per case	12 0	21 0	Plums, ½-sieve	2 6	5 0

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beans, Fr., per lb.	0 4	—	Mushrooms, punnet	2 0	—
Beet, red, per dozen	1 0	2 0	Mustard and Cress, punnet	0 4	—
Carrots, per bunch	0 6	—	Onions, per bunch	0 5	—
Cauliflowers, each	0 3	—	Parsley, per bunch	0 4	—
Celery, per bundle	1 6	2 0	Peas, per quart	1 3	—
Cucumbers, each	0 6	0 9	Shallots, per lb.	0 6	—
Endive, per dozen	2 0	—	Spinach, per bushel	2 6	—
Green Mint, bunch	0 4	—	Tomatos, per lb.	0 9	—
Herbs, per bunch	0 4	—	Turnips, per bunch, new	0 5	—
Leeks, per bunch	0 3	—			
Lettuce, per dozen	1 6	—			

Potatos are arriving in much better condition. Trade is nominally about the same as previously reported. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Foliage plants, various, each	2 0	10 0
Asters, per dozen	3 0	6 0	Fuchsias, dozen	3 0	6 0
Begonias, dozen	4 0	12 0	Hydrangea, per doz.	9 0	18 0
Cyperus, per dozen	4 0	12 0	Lilium lancifolium, per dozen	12 0	24 0
Dracæna terminalis, per dozen	30 0	60 0	Marguerites, doz.	6 0	12 0
— viridis, per doz.	12 0	24 0	Mignonette, doz.	3 0	6 0
Euonymus, in var., per dozen	6 0	18 0	Palms in var., each	2 6	21 0
Evergreens, in var., per dozen	6 0	24 0	Pelargoniums, scarlet, per dozen	2 0	4 0
Ferns, in var., doz.	4 0	18 0	Solanums, per dozen	6 0	12 0
Ficus elastica, each	1 6	7 0			

SEEDS.

London: *Sept.* 11.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, E.C., write that, as is generally the case at this season, there is now no business doing in Clover seeds. Crops promise to be good and abundant, and low prices all round are confidently anticipated. Trifolium on the spot being almost exhausted, is substantially dearer. Unprecedentedly low rates prevail for Winter Tares. Seed Rye is also plentiful and cheap. The new English Mustard comes out slowly. In Rape seed the tendency is upwards. Blue Peas remain dull. For bird-seeds the inquiry is likewise sluggish.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended September 7:—Wheat, 31*s.*; Barley, 29*s.* 9*d.*; Oats, 19*s.* 2*d.* For the corresponding week in 1888:—Wheat, 37*s.* 9*d.*; Barley, 24*s.* 2*d.*; Oats, 18*s.* 10*d.*

POTATOS.

Borough and Spitalfields: *Sept.* 10.—Good samples meet a fair demand; other kinds slow sale. Early Rose, 60*s.* to 70*s.*; Regents, 60*s.* to 80*s.*; Myatt's, 50*s.* to 60*s.*; Hebrons, 70*s.* to 90*s.*; Magnums, 50*s.* to 80*s.* per ton.

Spitalfields: *Sept.* 11.—Quotations:—Magnums, 45*s.* to 60*s.*; Regents, 50*s.* to 70*s.*; Imperators, 50*s.* to 65*s.*; Hebrons, 60*s.* to 80*s.*; Early Rose, 50*s.* to 70*s.* per ton.

Stratford: *Sept.* 10.—Quotations:—Dark land Magnums, 45*s.* to 55*s.*; light land do., 50*s.* to 70*s.*; Hebrons, 55*s.* to 75*s.*; Imperators, 60*s.* to 70*s.* per ton.

NOTICES TO CORRESPONDENTS.

Intelligent Readers, *do* please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and not to the Editor. All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

*** *Numerous articles and communications are of necessity held over.*

Aphis on Peach Shoots: *W. J. Y.* For the destruction of this pest, Miss Ormerod gives the following:—"4 oz. sulphuret of lime, and 2 oz. of soft-soap, to each gallon of hot-water—the soap and sulphuret to be well mixed, and the hot-water gradually added; the mixture being stirred during the time." When cool enough to use, twigs may be dipped in it, or it may be applied with a brush, putting it into all crannies and crevices of the bark and walls.

Apricot and Green Gage: *S. G. H.* You can now bud them; that is, insert plump good buds of the current year's growth on Plum stocks; and these may be wildings growing in the hedge-rows, and which may be taken up afterwards—say next spring or autumn; or properly grown Plum (not Damson, Bullace, or Blackthorn) stocks in the garden. In spring you might graft either upon headed-back Plum trees, or on Apricots or Plums of other varieties, choosing a few shoots to operate on, or all of them, as fancy may dictate. Layering might be done between this time and March.

Books: *D. H.* The work entitled *Greenhouse and Stove Plants*, by T. Baines (London: John Murray), is the best on the subject.

Bouvardia: *J. F.* We should think it is worth preserving.

Carnations: *X.* The plants are attacked with the thread or eel-worms figured in *Gardeners' Chronicle*, 1881, December 3.

Creepers for an Intermediate-house. *E. C. L.* The only plant which will not do amongst the list of names sent is Stephanotis; the others, if grown in properly made and drained borders, should prosper; pots will not do. You might add Hoya carnosa, Bignonia Chamberlainii, B. venusta, Beaumontia grandiflora, Gloriosa Planti, G. grandiflora, Ipomæa albivenia, and I. Gerrardi, white, the first-named with a purple tube, and the latter has a yellow throat; Luculia gratissima is a beautiful plant, but would do best in a border and on a wall; and Tacsonia exoniensis, and T. insignis. There are several others, but these named will make a good show throughout the greater part of the year. It may be said that very few strong-growing creepers succeed when confined strictly to their pots; but if the roots can escape through the bottom into a border of soil, better effects are obtained.

Cool Orchid-House: *Orchid.* The best mode of arranging staging is to have a close stage covered with gravel, shell-gravel, or any clean material for holding moisture, and a few inches above that open woodwork staging arranged in steps, the higher towards the back. This open staging may be made in strips, which may be placed on bricks rising to the heights required, and these are removable for cleansing purposes at any time. Be careful that a number of small openings in the brickwork beneath the staging, and as near the ground-line as possible, be made for bottom ventilation. The whole of the staging in the house should be arranged in the manner described.

Exhibitor: *S. S. B. D.* We should think the proper class for you to compete in would be the cottagers'.

Foliage Bedding Plants: *L. E.* Acacia lophantha, if large examples are required, may be taken up and potted; and when established it will live in the greenhouse. Wigandias are sometimes retained from one year to another, but except for very large beds they are not desirable. The Solanums are best, like all of the above, when raised annually from seeds sown in February.

Insects: *E. L.* The Pear sawfly; often figured in the *Gardeners' Chronicle.*

Lessons in Chemistry: *A Beginner.* For instruction in organic and inorganic chemistry, you should go to Downton or Cirencester Agricultural Colleges—that is, if you wish to become acquainted with the application of the science to the cultivation of the soil. What applies to agriculture is applicable also, within certain limits, to gardening. Write to the principals for further information.

Muscat of Alexandria Grapes: *J. R.* The berries sent are of good size, but so far as we could observe from the badly smashed condition in which they reached us, they are badly shanked. This may be due to poor soil, bad drainage of the border, and other root troubles; and perhaps over-cropping this year or previously. If the Vines are young, remake the border from top to bottom as soon as possible, and take all the care you can of all the roots. Two and a half feet is an ample depth, and let the bottom be made impervious, with a sharp fall to the drain at the front. Put the roots into the new soil at different depths, from 15 inches to 6 inches from the surface. If the Vines are old, it would be the better plan to root them out, and plant new canes. A middle course, by which the old Vines might be retained for a few years, would be to plant new Vines be-

tween the old ones, after remaking the border. It may be said that the Muscats are all of them the better for an inside, as well as an outside, border, both of which should be made at first, just wide enough to hold the roots, the border can be made wider gradually, as the roots reach the outside of it. Some gardeners state that they have rejuvenated sickly, or old Vines by top-dressings of soil and repeated sprinklings of Thompson's Vine Manure. This would certainly aid surface rooting.

NAMES OF FRUITS: *Amyson, Great Marlow.* 1, Winter Peach; 2, Manks' Codlin; 3, Emperor Alexander; 6, Hanwell Souring; 11, Rosemary Russett; 14, not known.

NAMES OF PLANTS.—*A. W.* 1, Rhamnus Frangula; 2, Juniperus sinensis.—*W. F.* A double Begonia, not remarkable.—*G. H. G.* 1, Hibiscus syriacus; 2, Leycesteria formosa; 3, Chlorophytum elatum; 4, Cotoneaster microphylla.—*Mungo Chapman.* 1, Escallonia macrantha; 2, Solidago cæsia; 3, Aster nova belgica. The Ferns next week.—*J. P.* Abelia rupestris.—*K.* 1, Aster Herveyi; 2, Salvia glutinosa.—*M. C. Slocock.* 1, Veronica, which we cannot identify; 2, V. salicifolia; 3, V. parviflora; 4, V. speciosa; 5, V. Andersoni; 6, V. speciosa. —*Lymington.* Rhus typhina.—*A. B.* The White Lapageria.—*H. Frank.* 1, L. speciosum var. punctatum; 2, L. s. var. Melpomene; 3 an 4, L. s. album. The colour of the pollen often varies in the forms of this species. No Lily shows greater variation than this as represented in gardens. It would be useless to give every one of the scores of forms distinctive names. *N.W.*

PEA, ECKFORD'S HEROINE: *W. B. H.* Good pods, but we can say nothing about the flavour of the Peas, as they are long past their best.

PEACHES: *Constant Reader.* Introduced during the sixteenth century, probably from France or Italy. They were grown under glass about 1750, but we do not know by whom.

PELARGONIUM: *T. D.* The petals had all fallen, but apparently they were of a rich bright crimson-scarlet. The truss is large. We should think it quite worth propagating, and sending to Chiswick for trial.

PLUM WELSHMAN: *R. G.* This is a very nice-flavoured fruit of medium size, and dark purplish red colour. As to its cropping qualities—a very material point—we have no information. In some respects it greatly resembles a variety named Standard of England. You should submit it for the opinion of the Fruit Committee.

POTATO TUBER ON HAULM: *H. D.* Of frequent occurence, generally the result of root injury.

ST. DUTHIE PEA: *W. G. H.* A most prolific plant to have been grown under ordinary farm cultivation. We do not remember to have seen any Pea plant with such a large number as 125 pods. This is equal to 1000-fold increase. The Pea is of good colour and flavour.

VINE LEAVES: *E. P., Boulogne-sur-Mer.* Make your mind easy. The swellings are mere warts covered with brown hairs —not hollow in the interior, nor containing any phylloxera.

CATALOGUES RECEIVED.

T. S. WARE, Hale Farm Nurseries, Tottenham—Bulb Catalogues, Parts I. and II.; also Pæonies, Carnations, &c.

GEO. COOLING & SONS, 11, Northgate Street, Bath—Dutch Flower Roots.

WM. SAMSON & Co., and W. & T. SAMSON, 8 and 10, Portland Street, Kilmarnock—Roots and Plants.

CLUES BROTHERS, 23, Market Street, York—Bulbs.

TEN HOUTEN & Co., Rotterdam—Fresh Vegetables (Wholesale).

ANT. ROOZEN & SON, Overveen, near Haarlem, Holland—Dutch Bulbs.

W. E. MARTIN, 20, Market Place, Hull—Bulbs.

MARTIN GRASHOFF, Quedlinburgh, Germany—New Phloxes, &c.

KENT & BRYDON, Darlington—Flowering Bulbs.

COMMUNICATIONS RECEIVED.—E. J. Gilman.—H. A. Bunyard.—N. E. B.—W. B. H.—A. D.—E. J.—B.—W. D.—Two Jolly Gardeners (please send names and addresses).—D. D. —F. R.—K. A. R.—J. D.—Rev. W. Tuckwell.—J. S.—J. J. W.—J. O'B.—W. G. S.—J. R.—Hortus.—W. H. D.—G. Rowbotham.—A. M. Jones.—C. Hewett.—H. Woodgate. W. H.—A Young Head Gardener and J. Hotham (next week).—T. W. B.(many thanks)—Prof. S.—W. G. S. —A.O. W.—H. Correvon, Geneva.—R. P.

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GARDENING APPOINTMENTS.

Mr. R. R. WHITFIELD, for the past five years Head Gardener to JAMES MONTAGU, Esq., Melton Park, Doncaster, has been engaged by HOWARD F. PAGET, Esq., as Head Gardener and Clerk of the Works, Elford Hall, Tamworth.

Mr. T. TOWNEND, late Gardener to Lady ALICE EWING, Coed Derwen, Bettws-y-Coed, has been engaged as Gardener to J. MONTAGU, Esq., Melton Park, Doncaster.

Mr. THOMAS DENNES, late Foreman at Worksop Manor, has been appointed Head Gardener to Mrs. COOKSON, Binfield Park, Bracknell, Berks.

Mr. JOSEPH MADDOCKS, late Gardener to B. C. ROBERTS, Esq., J.P., Oakfield, Chester, has been appointed as Gardener to Lady ALICE EWING, Coed Derwen, Bettws-y-Coed, North Wales.

Mr. THOMAS OSBORNE, for twelve years Head Gardener to H. J. BUCHAN, Esq., Wilton House, Southampton, has been engaged as Gardener to W. HOWARD. Esq., The Grove, Teddington, Middlesex.

Mr. CHAS. NIXON, late Gardener to J. E. PLATT, Esq., Burntwood, Cheadle, Cheshire, has been engaged as Gardener to D. ADAMSON, Esq., The Towers, Didsbury, Manchester.

Mr. R. POOLE has been engaged as Head Gardener to R. B. EVERED, Esq., Oatlands Hall, Horley, Surrey.

WANT PLACES.

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JOURNEYMAN, in the Houses.—E. HINDRY, The Gardens, Blendworth, can thoroughly recommend W. Goodchild, who is leaving through death.—W. GOODCHILD, Catherington, Horndean, Hants.

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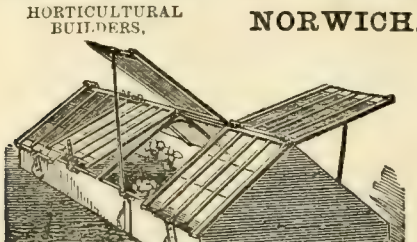
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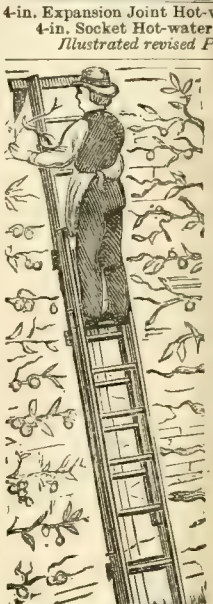
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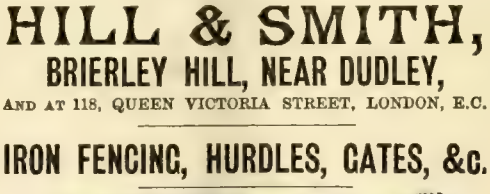
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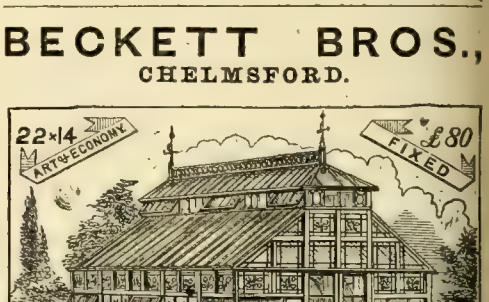
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, September 14, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2543.

No. 143.—Vol. VI. {Third Series.} SATURDAY, SEPTEMBER 21, 1889. {Regt. as a Newspaper. / With Supplement.} {Price 3d. / Post-Free, 3½d.}

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Preliminary Notice.

The well-known Collection of ESTABLISHED ORCHIDS, formed by the late C. J. Partington, Esq., of Heaton House, Cheshunt, and including undoubtedly the finest lot of Phalænopsis that has been offered for many years.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to prepare for SALE by AUCTION, on OCTOBER 22 and 23, the above well-known Collection of ESTABLISHED ORCHIDS, including an exceptionally fine lot of Phalænopsis, the whole of the plants being remarkably well grown, and in excellent condition. The Collection also includes a very fine batch of Cattleya Mendelii, five plants of C. Gaskelliana alba, C. Mossiæ, a splendid lot of Masdevallias, and others.

Further particulars will appear in future announcements. Catalogues are now in course of preparation.

67 and 68, Cheapside, E.C.

Nursery Stock Sales.—Important Notice.

To Noblemen, Gentlemen, Nurserymen, Landscape Gardeners, Builders, and others engaged in Planting during the coming season.

MESSRS. PROTHEROE AND MORRIS desire to call special attention to their numerous SALES of GENERAL NURSERY STOCK which will take place in various parts of the country during the months of OCTOBER and NOVEMBER.

A full List of these Sales will appear in next week's issue, and the Auctioneers will be glad to receive the names of those who desire to have Catalogues forwarded.

67 and 68, Cheapside, E.C.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Thursday Next.—(Sale No. 7990.)

CHOICE ESTABLISHED ORCHIDS and DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, September 26, at half-past 12 o'Clock precisely, CHOICE ESTABLISHED ORCHIDS, from various well-known collections, comprising many in Flower and Bud. Also a consignment of Bulbs from Holland.

On view morning of Sale, and Catalogues had.

Cart House Lane Nursery, Horsell.

About 2 Miles from the Woking Station on the S.W. Railway.

SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. WATERER AND SONS are instructed by Mr. Richard Collyer, to SELL by AUCTION, upon the Premises, as above, on MONDAY, October 7, and two following days, at 11 for 12 o'Clock precisely each day, the well-grown NURSERY STOCK on the above Land, comprising a great variety of very fine Ornamental Evergreen Trees and Shrubs, 3000 Variegated, Green, Standard, and other Hollies, 3 to 8 feet; 80,000 Seedling ditto, 25,000 Yews, from 2 to 7 feet; 120,000 strong 3-yr. old Quick, 2000 Spruce Fir, 3 feet; 1500 Thuja Lobbii, from 4 to 7 feet; Cupressus Lawsoniana and erecta, Thujopsis picea, Retinospora, Aucuba, Laurels, Privet, Rhododendrons, Deutzia, Weigela syringa, Double Scarlet Thorns, and other flowering Shrubs. Forest Trees, Fruit Trees.

The Auctioneers draw the special attention of Purchasers requiring plants for ornamental and other purposes, to this Sale, the whole of the Stock, including the fine Specimen Trees and Shrubs, being well-rooted and in perfect condition for removal, having all been moved within two years.

May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at either of their Offices, Chertsey, Weybridge Station, and opposite the Station Entrance, Walton-on-Thames.

Nine Elms Nurseries, Leek.

PRELIMINARY NOTICE. — Highly important UNRESERVED SALE of valuable and extensive well-grown NURSERY STOCK, the property of Mr. George Mathews, prior to removal, LATE in OCTOBER.

Full particulars in due course.

WANTED TO PURCHASE, a genuine SEED BUSINESS, or a PARTNERSHIP, by a young practical Seedsman with a moderate capital.

Address, A. Z., Hurst & Son, 152, Houndsditch, E.

FOR SALE, a MANURE MANUFACTURING BUSINESS, in London. Old-established; non-offensive. Capital opening for energetic man with £300, fond of travelling. Good connection. Every facility given to purchaser. — Apply to AMAND AND NUNN, 27, Red Lion Square, Holborn, W.C.

TO BE SOLD, the Roots of 2 Acres 5 Perches of RHUBARB, adjoining the Holborn Estate Almshouses at Tooting. To be viewed on application to the GARDENER, at the Almshouses. Tenders for the same to be sent on or before MONDAY, the 23rd inst., to the CLERK of the Holborn Estate Charity, 16, Houghton Street, Strand, W.C.

FLORIST'S, FRUITERER'S, and SEED BUSINESS, in a large town in Hampshire. Handsome frontage; splendid connection; trade approaching £2500 a-year, at high profits. Price, including Greenhouses, Stores, Horse, Trap, Stock, and everything as a going concern, about £1100.

Full particulars can be obtained of Messrs. DAVIS AND BENNETT, 25, Portland Street, Southampton.

South Coast.

TO BE LET, on Lease, GRAPE, TOMATO, and CUCUMBER HOUSES, with good DWELLING-HOUSE, &c. Apply in first instance to

W. HAZELL, Fruit Grower, West Worthing, Sussex.

TO BE LET, at Michaelmas next, the PILTDOWN NURSERIES, Maresfield, Sussex, 2½ miles from Uckfield Station (L. B. and S. Coast Railway), and a little more from Buxted and Sheffield Park Stations.

These Nurseries were for many years owned and occupied by the late Mr. James Mitchell, one of the most successful exhibitors of Roses of his day, and they are particularly suitable for their growth. They are also well adapted for all kinds of Coniferæ and Flowering Shrubs, and Fruit and Forest Trees. They are about 15 Acres in extent.

The Nurseries are well stocked with Roses of the best kinds, Ornamental Shrubs, Fruit and Forest Trees, &c. It has been for five years, and is now in the occupation of Mr. G. W. Piper.

They are an easy distance from the Stations on the London, Brighton, and South-Coast Railway, on the direct Tunbridge Wells and Brighton Line, and are therefore in direct railway communication with these towns, as well as Lewes, Hastings, and Eastbourne.

For full particulars, and to view, apply to MARK SANDFORD, Estate Agent, Maresfield, near Uckfield, Sussex.

To Nurserymen and Florists.

TO BE LET, Large Piece of GROUND, with TWO GREENHOUSES, in North London Suburb. Good opening for energetic man. Rent moderate.

Apply to Mr. ALFRED RICHARDS, Estate Agent, Lower Tottenham. (727-2).

To Nurserymen and Gardeners.

TO LET (owing to death of owner), the well-known NURSERY, situate in Waverley Place, near "Eyre Arms," 11 Greenhouses, well heated Pits, &c. Good Stabling. Apply personally to

Mr. CLINGO, 18, Finchley Road, N.W.

TO BE LET, from Michaelmas, DYSON'S FARM, at Edmonton, comprising a comfortable House, ample Stabling, Bunching Sheds, and other Buildings, and 38 Acres of Market Garden Land.

Apply to Messrs. PHILIP D. TUCKETT AND CO., Land Agents, 10A, Old Broad Street, E.C.

NURSERY TO LET, Old-established, in good neighbourhood, of 1 Acre. Eight Greenhouses, well stocked. At a valuation, or PARTNER accepted.

Apply, Bound's Green Nursery, New Southgate, N.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

STOVE PLANTS.—To be Disposed of, by Private Treaty, a number of BROWNEAS, JONESIAS, and other Stove Plants, from the collection of the late Mr. W. H. Crawford. Can be seen on application to the GARDENER, Lakelands, Cork.

The London Fern Nursery Annual Sale.

FERNS, to the Trade, cheap.—ADIANTUM, PTERIS, and 20 other saleable sorts, at 10s. and 12s. per 100, in 60's. 100,000 surplus stock to select from. Packing free. 1 large DICKSONIA ANTARCTICA, 5 feet, fine plant, cheap.—SMITH, London Fern Nursery, Brixton, S.W.

FERNS.—PTERIS CRETICA CRISTATA, in 60's, 14s. per 100, £6 10s. per 1000; do. thumbs, 10s. 6d. per 100, £5 per 1000. CUNEATUMS, in 60's, 14s. per 100, for cash with order. All good Stuff.—CULL AND ROOKE, Shelburne Nursery, Coleraine Park, Tottenham.

LARGE IRISH BEACONSFIELD YELLOW PRIMROSE SEED, for naturalisation and exportation, New crop, 1889, just gathered, in fine condition, per lb., 50s.; ½ lb., 27s. 6d.; 4 ounces, 15s.; ounce, 5s. Also rare Daffodil seed and Glory of the Snow, in trade packets, 2s. 6d. and 5s. each.—WM. BAYLOR HARTLAND, Old-established Seed Warehouse, 24, Patrick Street, Cork.

*** Trade offer for his "Soleil d'Or" Sunflower, and immediate orders for spring delivery in strong Stuff. The character of this plant is now fully established. See Advertisement in "H. A." next *week*. *A box of specimen blooms for six stamps.*

SPECIAL OFFER of FERNS for CASH.—Extra stong, in thumbs, for immediate Potting, in the following varieties:—Pteris cretica, tremula, cretica cristata, alba lineata, hastata, serrulata, cristata compacta, A. cuneatum, and an extra fine lot of Lomaria gibba and Doryopteris palmata. Also a fine lot, in 48's, Pteris cretica, cretica cristata, serrulata cristata compacta, Polypodium, Dicksonia antarctica, Greville robusta, and Aralia Sieboldi.

Price for thumbs per 100 or 1000, and 48's per 100 on application.

Inspection invited by

R. PENGELLY, Dyson's Lane, Upper Edmonton.

CHEAP FERNS, PTERIS CERRULATA, 60-pots, very large, 10s. per 100; in big 60-pots fit for 48-size pot, 16s. per 100. MAIDENHAIRS, in big 60-size fit for 48-size, at once, 18s. per 100; in 48-size, superbly fine stuff, 6s. per doz., 40s. per 100. Samples free, twelve stamps, cash with orders. H.P. ROSE TREES, now booked cheap. CATALOGUES free.—W. DAY, Sandygate Rose Nurseries, Sheffield.

TRICHOMANES RADICANS.— About 5 square yards, in fine condition. Sixteen years established, with TODEA PELLUCIDA, £10. Viewed by appointment.—E. B., 24, George Street, Hanover Square, W.

EFFECTIVE, SAFE & ECONOMICAL.

IMPROVED & ONLY GENUINE

MEDICATED TOBACCO PAPER

(READY CUT UP FOR USE),

REDUCED PRICE, 1/6 per lb.

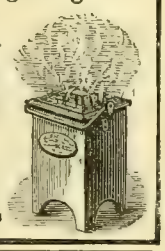
28 lbs. and upwards—Carriage Paid.

Parcels for trial, sent Free by Parcels Post, viz:—
2 lbs. 3/4, 4 lbs. 6/8, 6 lbs. 9/9, 8 lbs. 13/-, 10 lbs. 16/-

Dicksons Improved Fumigating Pan

Is vastly superior to any other.

PRICE in Iron 6/6, or in Copper, 21/-



DICKSONS
(Limited)
The Royal Seedsmen,
CHESTER.

THE
"PERFECT"
WEED KILLER



Maintains its Superiority over all Rivals

for permanently destroying vegetation on Walks, Carriage Drives, Ash Tennis Courts, Stonework grown green, &c.

Used at Kew Gardens, Royal Horticultural Gardens, &c., &c.

COMPLETE SATISFACTION GUARANTEED

to all using WEED KILLER bearing our Trade Mark, without which none is genuine. *Refuse Imitations.*

PRICE—Gallon 2/, 5 gal. 1/9, 10 gal. 1/6, 40 gal. 1/4 per gal.

SPECIAL QUOTATIONS FOR QUANTITIES.

Carriage paid 5 gals. and upwards. *Trial sample post free.*



DISTRIBUTOR for
"Perfect" Weed Killer.

Holds 40 gallons. Wrought-iron frame-work neatly painted. Galvanized tubes with tap to regulate flow. Gives spray 36 ins. wide. Price £4 net on rail Glasgow.

SOLE MANUFACTURERS: THE
HORTICULTURAL & AGRICULTURAL CHEMICAL COY.
Principal Agents: BLACKLEY, YOUNG & CO.,
103 HOLM STREET, GLASGOW.

SOLD BY SEEDSMEN AND FLORISTS.

GARDEN
REQUISITES.

TWO PRIZE MEDALS.

Quality, THE BEST in the Market. (All sacks included.)
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1s. 4d. each; 10 sacks, 12s. 6d.; 15 sacks, 17s. 6d., 20 sacks, 20s.; 25 sacks, 24s.; 30 sacks, 27s.; 40 sacks, 35s.; 50 sacks, 40s.; Truck-load, loose, free on rail, 30s. Limited quantities of G., special quality, granulated in sacks only, 2s. 6d. each.
GENUINE ORCHID PEAT, 8s. 6d. per sack; 5 sacks, 40s.; BEST BROWN FIBROUS PEAT, 5s. per sack; 5 for 22s. 6d. BLACK FIBROUS PEAT, 4s. 6d. per sack; 5 for 20s. COARSE SILVER SAND, 1s. 6d. per bushel; 14s. half ton; 24s. per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1s. per bushel. Tobacco Cloth or Paper, 1s. per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c. Write for Price List.

Terms strictly Cash with order.

CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Union Bank of London.*

BENTLEY'S
INSECTICIDE.

Mr. J. H. ROSE, *Lockinge Park, writes:*—"Bentley's Insecticide is the most effective and cheapest I have ever used."

For full particulars apply to **JOSEPH BENTLEY,** Chemical Works, Barrow-on-Humber, **HULL.**

London Agent: Mr. A. ROBINSON, 8, Leadenhall Street, E.C.



TOP SPIT FOR SALE. Twelve months in stack—in splendid condition.—Apply to JONES, 13, Lavender Hill; or, J. ROLLINS, 3, Burr Road, Merton Road, Wandsworth, S.W.

GENUINE GARDEN REQUISITES, as supplied to Royal Gardens, &c.
SPÉCIALITÉ TOBACCO PAPER, the best and strongest in the market, 10d. per lb., 28 lb. for 21s.
SELECT ORCHID PEAT, 8s. per sack, 5 for 35s.
SOILS and MANURES of finest quality, and GENERAL SUNDRIES. Price list free.
W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

THE
NORMAL FERTILISER
For GREENHOUSE or GARDEN.

Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
	2s.	3s. 6d.	5s. 6d.	9s.	14s.

And in 6d. and 1s. packets.
To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts. Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

COCOA-NUT FIBRE REFUSE.—Newly made, the same as supplied to the Royal Horticultural Society. Truck-load of 2 tons, £1; free on to Rail, L. B. S. C. and S. E., £1 5s.; in Bags, 20, 15s.; 40, £1 8s. Cash with order. J. STEVENS AND CO., 153, High Street, Battersea, S.W.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

BONES!—BONES!!—BONES!!!
Crushed Bones in all sizes for Vine Borders, Lawns, Potting, Grass Lands, &c. Also BONE MEAL for Poultry Feeding, GARDEN GUANO, DISSOLVED BONES, Special MANURES and FERTILIZERS for all purposes.
For Prices, apply to
HARRISON, BARBER & CO. (Limited),
GARRETT LANE, WANDSWORTH, SURREY, S.W.

Protection of Fruit Trees from the Winter Moth.

NOW IS THE TIME TO APPLY

PROTECTIVE COMPOSITION,
AS RECOMMENDED BY MISS ORMEROD.
Particulars on application.
DICKSONS, The Nurseries, CHESTER.
(Limited)

GARDEN REQUISITES.
COCOA-NUT FIBRE REFUSE.
4d. per bushel; 100 for 25s.; truck (loose, about 2 tons), 40s.; 4-bushel bags, 4d. each.
LIGHT BROWN FIBROUS PEAT, 5s. 6d. per sack; 5 sacks, 25s.; sacks, 4d. each.
BLACK FIBROUS PEAT, 5s. per sack, 5 sacks, 22s.; sacks, 4d. each.
COARSE SILVER SAND, 1s. 9d. per bushel; 15s. per half ton; 26s. per ton, in 2-bushel bags, 4d. each.
YELLOW FIBROUS LOAM, PEAT-MOULD, and LEAF-MOULD, 1s. per bushel.
SPHAGNUM MOSS, 8s. 6d. per sack.
MANURES, GARDEN STICKS, VIRGIN CORK, TOBACCO CLOTH, RUSSIA MATS, &c. Write for Price LIST.—
H. G. SMYTH, F.R.H.S., 21, Goldsmith's Street, Drury Lane (lately called 17A, Coal Yard), W.C.

BEESON'S MANURE.—The Best and Cheapest Fertiliser for all purposes. Write for Circular containing the Leading Gardeners' and Market Growers' Reports. Sold in Tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each, or 1 cwt. Bags, sealed, 13s. By all Seedsmen, or apply direct to W. H. BEESON, Carbrook Bone Mills, Sheffield.

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1s., 3s., and 10s. 6d.

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6d. and 1s., from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

BULB SHOW TICKETS
For Marking Prices of Bulbs in Seedsmen's Windows,
Illustrated in Colours,
and in most cases life size, very attractive and showy, and will tend greatly to facilitate sales.
48 Sorts.
Price reduced to 1s. 6d. per dozen.
Sample Card (size 5½ inches by 4¼ inches) post-free for 3d., and List of sorts sent on application.

HOOPER & CO. (LIMITED),
COVENT GARDEN, LONDON, W.C.

THE NEW PLANT COLLAR.
As illustrated in the *Gardeners' Chronicle*, Sept. 14, 1889.
No more Pot-bound Plants.
BEALE'S NEW IMPERISHABLE TERRA-COTTA
METAL EXPANDING PLANT COLLAR,
FOR
Extending the Rooting Space in Flower Pots without Re-potting.

This Collar is invaluable for Tomato Plants in pots, Pot Vines and Fruiting Trees, Roses, &c., and also for large pot-bound Stove Plants, Chrysanthemums, and all other plant that require surface feeding. It fits any size and shape of pots
It makes a 6 inch pot into an 8-inch one without repotting.
All sizes, from 6 in. to 12 in. kept in stock; any other sizes cut to order, per instructions.

Beale's Plant Collar makes a perfect Propagator, Seed Raiser, and Shelter for Small Plants, Cuttings, and Seedlings, a cover of glass being used for excluding air, and keeping Cuttings, &c., close till rooted, when it can be easily removed.
It has gained Honours and Certificates every time exhibited.
Collars, 6-in., 4s. 6d.; 8-in., 5s.; 10-in., 5s. 6d.; 12-in., 6s. 6d. per dozen.
Glasses for 6-in., 1s. 6d.; 8-in., 1s. 9d.; 10-in., 2s.; 12-in., 2s. 6d. per dozen.
Over 20s. orders carriage paid. Supplied everywhere by Seedsmen and Florists.

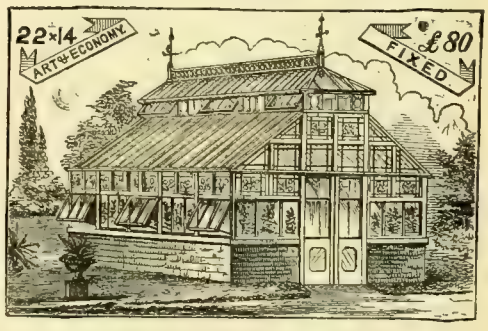


Used as a Hand-light and Propagator.

Sole Manufacturers:—
R. BEALE AND CO., The North London Horticultural Stores, New Southgate, London, N.

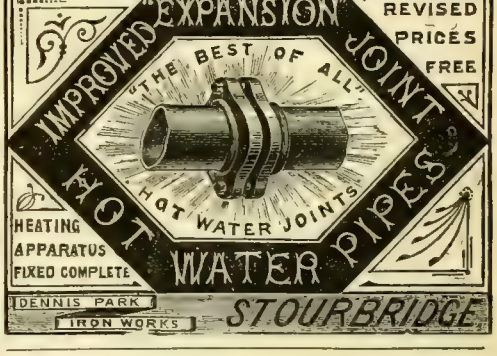
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BECKETT BROS.,
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Thoroughly Practical Hothouse Builders and Heating Engineers. Glasshouses of every description, in Wood or Iron, erected in any part of the kingdom. First-class workmanship and the very best materials at the lowest possible prices.
Price Lists, Plans, and Estimates Free.

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PAINT TRY LEETE'S 2½ Per 2½lb
ON IRON, WOOD & STONE
ALL COLORS CASH
A. LEETE & Co PAINT WORKS, 129 LONDON Rd. S.E.

FOR SALE, a COLLECTION of ORCHIDS, about 86 healthy Established Plants, containing the following kinds:—Aërides Lobbi, Calanthe Veitchi, Cymbidium aloefolium, Cypripedium insigne, C. venustum, Dendrobium densiflorum, D. fimbriatum, D. heterocarpum, D. nobile, D. Pierardi, D. Wardianum, Epidendrum vitellinum majus, Lycaste Skinneri, Masdevallia tovarensis, Oncidium flexuosum, Stanhopea tigrina; also STOVE PLANTS, consisting of Acalypha, Anthurium, Asparagus, Begonia, Croton, Curculigo, Cyperus, Dracæna, Eucharis, Hibiscus, Pancratium, Strelitzia, &c., and 18 young PINES. Apply to
G. JUPP, Gardener, Brantridge Park, Balcombe, Sussex.

PANSIES!—PANSIES!
A Challenge to Creation.
From my unrivalled stock of Gems, which can be had from 4s., 6s., 9s., and 12s. per dozen plants. Cuttings half the price. NOTE.—The varieties I shall send are such as I have gained several Gold and Silver Medals throughout the United Kingdom, and also secured the 1st prize for the best twenty-four blooms at Glasgow Autumn Show, September 4, 1889. Pansy Cuttings in finest colours for bedding, 24 for 2s.; 24 rooted plants, 4s. This season's Seed, 1s. and 2s. 6d. per packet. My Treatise on the Pansy, 7d.; cloth, 1s. 1d.
ALEX. LISTER, Pansy Specialist, Rothesay.

Awarded several First Prizes.
ASPARAGUS, Plants and Seeds. The earliest, delicious, and most profitable ASPARAGUS of the whole World, giving shoots from three to five a pound. Present prices for Plants, 42s. per 1000. Seeds, 10s. 6d. per lb. Terms cash.
E. H. MEYER, Nurseryman, Hamburgerstrasse, Brannschweig, Germany.

ROMAN HYACINTHS, NARCISSUS, LILIUMS, TUBEROSES, and many other FRENCH BULBS, grown and offered by LOUIS BREMOND, fils, Ollioules, France.
WHOLESALE LIST on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, London, W.C.

FOR SALE, EUCHARIS AMAZONICA, 6 large pots. Very strong, healthy, flowering Bulbs. Particulars and price on application.
W. CLARKE, Castlethorpe, Stony Stratford.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

HARTLAND'S GOLDEN QUILLED DOUBLE PERENNIAL SUNFLOWER.—Now is the time to ask for a sixpenny box of Specimen Blooms, to prevent any hitherto implied imposition, and get orders booked for November delivery. Within the entire range of hardy perennials. There is nothing finer. Its colour and floret-formation in appearance like an immense bloom of Madame Desmage Chrysanthemum, or the very finest form of orange African Marigold. Quite distinct.
Plants at fall, 1s. 6d. each, with 3d. extra to cover postage.
W. BAYLOR HARTLAND, Seedsman, Cork.

EVERGREENS for IMMEDIATE EFFECT.
CUPRESSUS LAWSONII, 6 to 8 feet.
,, ERECTA VIRIDIS, 4 to 5 feet, 5 to 6 feet, and 6 to 8 feet.
LIGUSTRUM OVALIFOLIUM, 4 to 5 feet.
THUIA OCCIDENTALIS, 5 to 6 feet, and 6 to 8 feet.
,, LOBBII, 6 to 8 feet, and 8 to 10 feet.
THUJOPSIS BOREALIS, 6 to 8 feet, and 8 to 10 feet.
YEWS, English, 5 to 6 feet, and 6 to 8 feet.
,, Irish, 6 to 7 feet.
The above have all been regularly transplanted, and are in fine condition for removal.
JNO. JEFFERIES AND SON, Royal Nurseries, Cirencester.

ORCHIDS.
BRAZILIAN ORCHIDS
offered to the Trade in large or small quantities upon the most advantageous terms.
Particulars and CATALOGUES on application to
A. H. GRIMSDITCH, 5, Clayton Square, Liverpool.
Sole Agent for Senhor Carlos Travassos, Rio de Janeiro.

SPECIAL CLEARANCE BARGAINS.
ROOM WANTED.
CALLA ÆTHIOPICA (Arum Lily), extra strong, in 5 inch pots, 6s. per dozen.
Do., smaller, 3s. per dozen.
ARALIA SIEBOLDII, well rooted, in 3 inch pots, 2s. per dozen; 10s. 6d. per 100.
GREVILLEA ROBUSTA, large plants, lovely decorative plant, in 5 inch pots, 5s per dozen.
PLUMBAGO CAPENSIS ALBA (the White Plumbago), large plants, in 5 inch pots, 9s. per dozen.
GEUM COCCINEUM PLENUM (Double Scarlet Geum), fine roots, 1s, 6d. per dozen; 10s. per 100.

ORCHIDS! Must Sell.
ODONTOGLOSSUM ALEXANDRÆ, good strong plants, in 3 and 4 inch pots, 15s. per dozen.
,, ROSSII, in 3½ and 4 inch pots, 12s. per dozen.
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THE
Gardeners' Chronicle.
SATURDAY, SEPTEMBER 21, 1889.

TONGUES IN TREES.

THE banished Duke in Arden Forest was evidently an undeveloped essayist; he could not else have summarised so neatly into themes the lessons and the parables of Nature. Tongues in Trees—Books in the running brooks—Sermons in Stones—Good in everything! Four telling titles confront us as we read; three suggestions to the lovers of Nature, one to the lovers of paradox. It shall be our object to expand the first.

"The trees went forth on a time to elect a king over them, and they said unto the Olive, the Fig, the Vine, the Bramble, come thou and reign over us." Those, alas, were days of fable! the electoral trees of Shechem are silent now; silent, with the Hamadryads of the Homeric hymns and the metamorphosed sisters of Phaethon shrieking when their twigs were torn; and the remonstrant bleeding bough of Virgil, and of Dante; and the talking Oak of Dodorna 3000 years ago, of our Poet Laureate to-day; and the Buckwheat, and the Daisy of Hans Andersen; and Alice's Tiger Lily; and the Roses in Maud's garden; and the bewitching dancers at little Lily's party. Yet walk by a forest side in a wind, and you learn that trees still have tongues.

"Mighty winds (says Cowper)
That sweep the skirt of some o'erhanging wood
Of ancient growth, make music not unlike
The dash of Ocean on his winding shore,
And lull the spirit while they fill the mind."

"Now might be heard," says D'Israeli in *Coningsby*, "the various voices of the mighty trees, as they expressed their terror or their agony. The Elm sighed, the Beech shrieked, the Oak sent forth its deep and long-drawn groans; while ever and anon, amid a momentary pause, the passion of the Ash was heard in moans of thrilling anguish."

As the wind falls, these voices hush; but to the judicious listener the trees speak still with individual articulation. Interrogate yon Lime, whose drooping boughs sweep the close-shaven lawn. It

tells you that it will be two centuries old next year; planted, as were thousands of its brethren in all parts of England, as a compliment to Dutch William, who, caring little ordinarily for the charms of Nature, yet loved to see and to reproduce in England the Linden avenues and terraces of his home. Wherever noble Limes, solitary or in clumps, are seen to-day in ancient gardens, be sure that the squire, or parson, or college president, who planted them in revolution times, was a courtier and a whig. That gaunt Mulberry tree, reft of many a branch, but still strewing the grass each summer with its delicious fruit, claims to be a few years older than the Lime. It was planted, as were almost all our old Mulberries, at the emigration of the French Protestants in 1685; in hopes to naturalise amongst ourselves their art of breeding silkworms, and of shining silk, in ignorance that the fruited Mulberry (Morus nigra) is unfit for silkworms, and that the silkworm Mulberry (Morus alba) bears no edible fruit. That Weeping Willow, its long tresses pendulous over a fictitious urn, prides itself on dating from the reign of Anne. A packet of Grapes sent to Pope from Spain by Lord Peterborough, was unfastened in the poet's presence, and his quick eye noticed as unfamiliar the withes which bound it. They were twigs of the Salix babylonica, then unknown in England; they were planted in his garden, and took root, and the plant being dicœcious, and no male specimens having ever been imported, the majority of our Weeping Willows, if not all of them, owe their parentage to that earliest Twickenham colonist. Our ears once turned to their talk, each tree in its turn becomes loquacious. The Sycamore, "oft musical with bees," attracted not by its flowers but by the honeydew upon its leaves, points to the wrinkled cotyledons, which spring up each year from the seed it sheds—possibly a survival of the universal foliage of deciduous trees in olden geological days, ere time had differentiated them into their present varied forms. The Holly proudly cites its splendid stature on the Killarney Islands; the noble undergrove at Alfoxden, beneath the "mighty dome of Oaks," commemorated in 1797 by Wordsworth and his sister, enlarged to-day by ninety years of growth, recalls the Holly hedge, 200 feet in length by 9 feet thick, and 6 feet high, the glory of good John Evelyn's Deptford garden, until that half demigod, half savage, the Czar Peter, amused himself by being driven through and through it in a wheelbarrow until it was all destroyed, celebrates finally the time, long anterior to Christianity, when, with Boar's head and Mistleto and wassail, it adorned the midwinter saturnalia of Northern Europe. The Aspen tells us how, from its wood was formed the Cross of Christ, and how its boughs and leaves have shivered at the recollection ever since. The Yew boasts of the archers at Cressy and at Agincourt; of its four gigantic brethren on the slopes of Borrowdale; of the half-prostrate Iffley patriarch, perhaps the oldest tree in England, full-grown and tall before the earliest Oxford spire pointed upwards from the vale below. The Cypress bewails the inclement climate which, except in Southern England, banishes from our churchyard the graceful ornament of foreign cemeteries; quotes the noble reminder of Horace to his wealthy friend, that of all the trees with which he has planted his wide demesne, the Cypress alone will follow its master to the grave; glides into a lighter strain as it recalls the Bachelor Fellow of Oriel fifty years ago, who, passing to a country living at a time of life when amatory tendencies are at once continuous and unfortunate, wooed in vain the spinsters of his new neighbourhood not once nor twice, planting a Cypress in his garden on each successive rejection of his suit, until the Rectory grounds were found upon his death to be overshadowed by fifteen mournful trees.

We feel that we must check this random chorus, and begin by systematic questioning to extract special information for ourselves. We shall find first of all that no little prehistoric lore lies embalmed in our English names of trees. It is no new thing to infer from the terms in use at the beginning of a nation's history, the arts, customs, civilisation, of the nation using them; the fact, that in all, or nearly all, Aryan languages, words for the Supreme Being, for the king, for brother and sister, for ploughing, grinding, building, closely resemble one another, is admitted to show that our common ancestors in times when they were one people, and had not yet scattered into India, Persia, Europe, had the beginnings of religion and government, possessed the family life, knew the simple arts most needed for the comfort of home. Let us see what light will be thrown on the habits of our more immediate Teutonic forefathers, if we apply this method of investigation to the popular names of plants. The following words are common to all the Teutonic dialects; must have been known, that is, to the race from which ourselves, with German, Dutch, Swedes, Danes, Norwegian, are descended, on their first settlement in Europe, and before they subdivided. The first name we will take is Birch, or as Tennyson more properly calls it, Birk. Its rind must have been used for boat-building and for roofing houses; for boat-building, since the word *bark* from the same root stands for ship in English, Dutch, Icelandic, Danish; for roofing, since the old English *beorgan* and the German *bergen*, also from the same root, mean to cover, protect, shelter; and thus from this simple name we gather that our ancestors possessed the arts of building boats and of roofing or thatching houses. Houses could not be raised without timber; and we find the same word as *Tree* in almost every Aryan tongue standing for three things: for a tree, for timber, for an Oak; extending the use of Oak wood for simple architecture back to the first formation in Asia of our mother language, and endowing us with the additional fact that our European ancestors built of Oak timber the houses which they roofed with Birch. In Hazel a fresh fact lies buried. It is in all Germanic languages a form of *hæs, behest*, that is a command; a Hazel stick having been used, says Jacob Grimm, in earliest times as a sceptre or baton to keep order among slaves and cattle. Without pressing the curious fact that the word *hælsian* to foretell, seems to indicate the ancient use of the Hazel rod, as it is employed to-day amongst the Cornish miners, for purposes of divination, we have here the additional probability revealed in a single word that our ancestors owned slaves and cattle. In Hawthorn, common to Swedish, German, English, we have testimony to the use of a *haw, hag, hæg, hedge*, or fence, "honouring the holy bounds of property," and consequently to the division and appropriation of land in earliest Teutonic times. *W. Tuckwell, Stockton Rectory, Rugby.*

(To be continued.)

New or Noteworthy Plants.

TIGRIDIA PRINGLEI, *Wats.*

This interesting genus, which consists of something like ten species, more or less, is chiefly confined to Mexico, Chili, and Peru. They are said to have early attracted the attention of the first Spanish emigrants, amongst whom they were known as Tigridia flos, and it was not until about 200 years after l'Obel's description that the first Tigridia bloomed in England, about 1796. The above species, a very handsome, though not a strikingly distinct one, was recently discovered by C. G. Pringle in the mountains of Chihuahua, much farther north than any other species has ever been found. It is nearly allied to the old T. pavonia; its chief characteristics consisting in the bright scarlet-red blades of the segments, and in the broadly cordate or reniform petals, which are smaller than in the old species, and somewhat more oblong. It grows 1 to 2 feet in height, the leaves are winged, plicate, each stem bearing from two to six flowers. Mr. S. Watson gives only one flower, but in the specimens which we saw at Kew, each stem produced not fewer than five or six flowers. The campanulate flowers are blotched within with crimson, the sepals 2 to 3 inches long, the reflexed blade bright scarlet-red. The base blotched with crimson, with a border of bright orange.

T. Pringlei, though, as above stated, not so very distinct from the old Pavonia, is yet a decided acquisition, the brilliancy of its flowers, its dwarfer and more compact habit, and the possibility also of its being hardier than the others, is sure to make it welcome to lovers of these bulbs. It has been figured for the *Botanical Magazine* from plants which flowered at Kew. It flowered for the first time in the Botanic Gardens, Cambridge, Mass., in July of last year, and was figured and described in *Garden and Forest*, 1888, p. 389. *D. D.*

Lælio-cattleya × Stella, *n. hyb.*

This is another handsome member of a group of bigeneric hybrids, which seems likely to become a large and very important one for garden purposes. It was raised by Mr. Seden for Messrs. James Veitch & Sons, of Chelsea, from Lælia crispa, fertilised with the pollen of Lælio-cattleya × elegans var. Wolstenholmiæ. The seed was sown in 1881, and the plant flowered for the first time in July of the present year.

At present there are six pseudobulbs, from 2 to 8 inches long, two of them with a pair of leaves, as in the pollen-parent; the remainder with one, as in the seed-parent. These range from 4 to 12 inches long, and are about 1½ inch broad. The raceme is at present two-flowered, and the flowers not quite 5 inches across. The segments are of a delicate rosy-lilac shade, the petals an inch across, but the sepals not half as broad. The lip is three-lobed, the front lobe a little over an inch broad, beautifully undulate, rich deep violet-purple, with a narrow white margin, and a little white variegation near the apex. The side-lobes are broader, rounded, sulphur-white, with purple tips, and the nerves of the throat and disc purple. The column is white, stained with purple, principally on the front face; the pollen-masses are very unequal. In general habit the plant is said to resemble the pollen-parent very closely, while in the flowers also the same influence is very marked, both in the shape and also in the total absence of the yellow of the lip which is seen in Lælia crispa. Perhaps some of these characters may become somewhat modified as the plant increases in strength, as has been noticed in other cases. It is a decidedly handsome hybrid. *R. A. Rolfe.*

REMEDY FOR THE CODLING MOTH ON APPLE TREES.

The Apple orchard on the Kentucky Experimental Station Farm, U.S., was in a very poor condition. Many of the trees were old, and full of suckers and dead limbs; the trunks were rough, and the branches were so low as to prevent proper cultivation of the soil beneath. The situation was on a very wet, thin, clay soil. So far as was known, the orchard had for many years been an entire failure in the production of Apples.

Sometimes the trees fruited heavily, but the Apples dropped prematurely and were said to be always very wormy. This falling of the Apples was supposed to be from the ravages of the Codling moth (Carpocapsa pomonella), which pest has nearly destroyed successful Apple culture in the locality of Kentucky.

It was concluded to make an attempt to see what could be done with the orchard by proper pruning, fertilising, and cultivation; and to attempt the destruction of the Codling moth with sulphate of copper.

Accordingly all dead limbs and suckers were removed, and the tops of the trees were trimmed considerably, though not to such an extent as to allow the main branches to be exposed too much to the sun. The ground was ploughed in the open spaces, and dug around the trees.

After the blossoms had fallen, and the young Apples were just beginning to turn over on the stem, trees were sprayed with a mixture of sulphate of copper and water.

The spraying was in this case probably somewhat too late for the best results, as the young Apples should all be standing flower end up when the trees are sprayed, in order that the application may lodge in the depression at the blossom end before the Apple turns down on its stem.

Treatment.

The spraying was done as follows:—4 ounces of the sulphate of copper were dissolved in 40 gallons of water, which was put into a barrel, to which was attached a spraying pump with hose and nozzle. This was mounted on a cart, and conveyed to the windward side of the tree, and as one man pumped, another held the nozzle in such a manner as to cause the spray to go just above the tree and fall down on the leaves. This was continued until the water just began to drop from the leaves, when the pump was stopped. In like manner each tree was treated in turn.

Effects.

Most of the trees in the orchard bore fruit. Many of the trees were loaded down. Very few of the Apples dropped prematurely. Of those that did, but few were wormy. In one instance 100 of the fallen Apples were cut in two, and fourteen were found to be wormy. At another time, fifty Juneatings were cut in two, and nine were found to be wormy. Another trial of all the varieties was made, and the percentage of wormy Apples found on the ground ranged from five to thirty.

Of the Apples on the trees but very few could be found which had been attached by the Codling moth. It was rare to find a wormy Apple, while in neighbouring orchards, in most instances, it was equally rare to find a sound Apple.

It was thus undoubtedly proved that spraying the trees with a solution of sulphate of copper prevented the Codling moth from attacking this orchard and destroying the crop.

Should the depredations of the moth be very severe, 1 lb. of sulphate of copper may be used in fifty gallons of water.

The method is not new, and has been practised successfully for years; it is said to be a practical remedy for practical men. *J. J. Willis, Harpenden.*

FUNGUS FORAY IN EPPING FOREST.

As sure as midsummer brings in all sorts of gossip about Roses, so does the month of September introduce the topic of "Mushrooms and Toadstools." It must not be imagined that there is an equal amount of elevated interest in the latter case as in the former, but there is still an interest, however circumscribed in its extent. For the past ten years Epping Forest has been the scene of one or two forays in the autumn in search of fungi, and on Saturday last (September 14) the first of these for the present season took place, under the auspices of the Hackney Natural History Society, and a second is threatened for Friday and Saturday, the 27th and 28th inst., on behalf of the Essex Field Club. Fungus-hunters, like farmers, are privileged to grumble at the weather, and this year the traditional grumble was indulged in; for, however fine and enjoyable the day might be, the ground was so dry and hard that the fungi had no chance. Somehow or other, the past two or three years have been so exceptional as regards fungi that fungus-hunters have been almost driven to despair. It has been the custom to make a list at these excursions of all the species identified during the day, and the totals are compared year by year. At the corresponding excursion last year the list included some 150 species, of which twenty were new to the forest; but on the present occasion the list only reached 108, and only four new species, and two well-marked varieties, were determined. The species found for the first time in the forest area were Agaricus præcox, A. semi vestitus, Cortinarius torvus, and Trichia scabra. The incident of the day, however, was the finding of Hydnum diversidens upon some trunks in Monk's Wood. This species was first found in Britain in 1884, when Mr. H. T. Wharton collected it from a trunk at Fairmead, and since then it has only once been met with until the present occasion. It is a rare species in all parts of Europe. As for the residue of the day's gathering, it was, on the whole, very common-place; the number of individuals of all species were very few, and those of the most ordinary kind. Even those discovered for the first time in the forest are common enough in other parts of the country, and some species usually common everywhere could not be seen at all. Only six specmens of the well-known "chantarelle" could be found, and these are usually collected by the basketful for cooking. Not a single Boletus edulis could be seen anywhere, while such common things as Boletus chrysenteron, Agaricus velutinus, A. infundibuliformis, Marasmius peronatus, Craterellus cornucopioides, Panus stypticus, &c., could not be seen at all. The most prominent genus was Russula; but of all the seventy British species of Tricholoma there were but two; and of the fifty-three species of Clitocybe there were but two, and thus throughout the whole of the white-spored Agarics. This peculiarity was also remarked last year. Although of the single large genus Agaricus, no fewer than 825 species are recorded for Great Britain, only thirty-four were recognised throughout Saturday in the forest.

If it had depended upon the collection of the day to furnish the table with delicacies for the evening meal, there must have been grievous disappointment; for even those excursionists, of whom a few are constantly met with, that bring their baskets in the hope of carrying home a supply of edible fungi sufficient for two or three days, were disgusted. All together, the edible fungi collected, at all fit for the purpose, would not have constituted more than one meal for a healthy man. *M. C. C.*

LIST OF GARDEN ORCHIDS.

(*Continued from p.* 156.)

CATTLEYOPSIS.

83. Cattleyopsis, Lem., *Jard. Fleur.*, iv. (1854), *Misc.*, pp. 59, 60, fig. 1. *Læliopsis*, Lindl., in Paxt. *Fl. Gard.*, iii. (1852—3), p. 156, in part; Benth. and Hook. f., *Gen. Plant.* iii., p. 532, in part.—A monotypic genus, with the habit of Broughtonia, but differing in having eight pollen masses, instead of four. It is correctly defined and figured by Lemaire, who points out its great similarity to Læliopsis domingensis, Lindl., though he does not mention a second species, L. Lindenii, Lindl., which I am convinced is specifically identical with Lemaire's plant. The genus Læliopsis of Lindley is a complete mixture. He first carefully defines it as having only four pollen-masses, and then proceeds to add Lælia Lindenii, Lindl., Broughtonia chinensis, Lindl., and Epidendrum cubense, Lindl.; the first with eight pollen-masses, and identical with the above, and the two latter being species of Epidendrum. Bentham and Hooker ascribe eight pollen-masses to the genus, but this is evidently taken from L. Lindenii, Lindl., which does not properly belong to the genus at all. For these reasons I have considered Læliopsis as a name to be completely suppressed.

(1.) C. delicatula, Lem., *Jard. Fleur.*, iv. (1854), *Misc.*, pp. 59, 60, fig. 1. *Lælia Lindenii*, Lindl., *Orch. Linden* (1846), p. 10; Sagra, *Fl. Cubana*, iii., p. 243, t. 82, excl. syn. *Læliopsis Lindenii*, Lindl., in Paxt. *Fl. Gard.*, iii. (1852—3), p. 156. *Bletia Lindenii*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 431.—Cuba. Flowered in the collection of M. Ambrose Verschaffelt, in 1854.

Tetramicra, Lindl., *Gen. & Sp. Orch.* (1831), p. 119, comes here, and is characterised by the spreading segments, and the lip also spreading from the base, but none of the species appear to have been in cultivation. They appear to be eight in number, though four of them do not appear to have yet been referred to Tetramicra. These are *T. pratensis* (*Bletia pratensis*, Rchb. f.), *T. schœnina* (*Bletia schœnina*, Rchb. f.), *T. Schomburgkii* (*Bletia Schomburgkii*, Rchb. f.), and *T. tenera* (*Bletia tenera*, A. Rich.). *Leptotes*, Lindl., referred here by Bentham seems quite distinct. See remarks under the following genus.

LEPTOTES.

84. Leptotes, Lindl., *Bot. Reg.*, xix. (1833), t. 1625.—Segments spreading; lip 3-lobed, side-lobes auriculiform, clasping the column; pollen-masses eight. Dwarf plants, with small and slender pseudobulbs; leaves subterete and fleshy; racemes short, 1—3 flowered. Bentham reduces this to Tetramicra, in which the lip is widely spreading from the extreme base, and the side-lobes do not clasp the column (besides the different habit), so that I feel compelled to restore it to generic rank.—Species about five, natives (where known) of Brazil.

(1.) L. bicolor, Lindl., *Bot. Reg.*, xix. (1833), t. 1625; *Bot. Mag.*, t. 3734 (var. glaucophylla, Hook.); *Lindenia*, iv., t. 157. *Tetramicra bicolor*, Benth., in *Journ. Linn. Soc.*, xviii., p. 314; Rolfe, in *Gard. Chron.*, 1883, ii., p. 20, fig. 5 (with three lips); Veitch, *Man. Orch. Pl.*, pt. 2, p. 99. *Leptotes serrulata*, Lindl., *Sert. Orch.* (1838), t. 11. *L. glaucophylla*, Hoffmannsegg, in *Bot. Zeit.*, i. (1843), p. 833.—Brazil. Introduced from the Organ Mountains, and flowered in the collection of Mrs. Arnold Harrison, of Liverpool, in 1833.

(2.) L. minuta. *Tetramicra minuta*, Rolfe, in *Gard. Chron.*, 1889, i., p. 526.—A remarkable little species, which flowered in the collection of Messrs. James Veitch & Sons, of Chelsea, during the present year. Nothing is known of its origin, but I suspect, like the four other known species, it came from Brazil.

(3.) L. tenuis, Rchb. f., in *Hamb. Gartenz.*, xxi. (1865), p. 296.—Brazil. Introduced by Mr. Blunt, for Messrs. Hugh Low & Co., and flowered in the collection of J. Day, Esq., at Tottenham. Segments yellowish, lip white, with dark violet blotch. *R. A. Rolfe, Herbarium, Kew.*

(*To be continued.*)

UMBERSLADE HALL

Is the residence of George F. Muntz, Esq., and is situated betwixt Warwick and Redditch. It is a fine mansion, and the pleasure grounds and gardens are extensive and well kept. Conifers luxuriate here, and Abies nobilis is in fine character, and grows freely near the ornamental water, the rich glaucous colour being easily distinguished at a distance, and some of the trees are 50 feet high. Wellingtonias (Sequoias) also do well here.

Two large masses of Nymphæa alba are striking objects just now in the pool. Mr. Pritchard, the head gardener here, formed two mud clumps for these plants, and by giving them room they have grown freely, and the white flowers are very numerous, and treated in this way they are, indeed, ornamental In the flower gardens in front of the Hall, one bed in particular well deserves notice. It is a very long curved bed, in which are a large number of the rich crimson-scarlet Lobelia Queen Victoria, carpeted with yellow Calceolarias, blue Ageratum, and edged with Dactylis glomerata variegata. It is a wonderfully bright bed, and scarlet Lobelias should be used more than they are. Some fail to keep them through the winter. Mr. Pritchard's plan is to keep them in a cool frame near the glass, and not to allow them to get too dry. Dahlia Glow of the Gardens Improved certainly deserves its name for brilliancy and effectiveness, and another bed of Amaranth pink Pelargonium, bordered with Dean's True Blue Viola, and fringed with the variegated Dactylis, has been, and still is, very beautiful. Violas for bedding are in favour at Umberslade, and they certainly deserve it. The old double orange-scarlet Tropæolum, trained in a pyramidal form, gives us another old-fashioned plant, which can be made very useful in flower gardening. Plants about 2 feet high occupy the centre of smaller beds, and are well in bloom. Six carpet beds close together

are worth seeing; they are very fine indeed, and so well kept, and the Alternantheras are so well coloured. Eulalias zebrina and japonica are also very effective centre plants in some of the beds. In the conservatory, a huge specimen Acacia dealbata occupies a good portion of the roof, and in one of the stoves Gloriosa superba asserts its claim as one of our best and most striking warm-house creepers. Aristolochia elegans is also in bloom, and is another fine warm-house creeper.

A new Peach-house 80 feet long by 16½ feet wide was built last winter. It has a south aspect, and is a lean-to with a short hip-roof at the back. The house is one of the best we have seen, capitally built, and with a tiled walk in front inside, allowing space for a narrow front shelf, and room to move about. The border for the trees rises about a foot from the path, and has a blue brick frontage, so that the path forms a wide trough for damping in very hot weather, and plants, if necessary, can be stood on the ridge. The wire trellis for the trees is curvilinear, and not too close to the glass. It is 8 feet wide, rising from 5 to 6 feet at the back, and cordon Pear trees are planted at the back of the Peach tree border to train to the roof. Some of these, notably Souvenir du Congrès, with very fine fruits; Louise Bonne of Jersey, and Alexander Lambre, a very fine late Pear, with fine fruit on now, although planted only a year since, have fruited well. Peach trees and cordon Pears occupy the back wall. Of course, there has been ample room this year in this house for Tomatos, and the plants are strong and abundantly cropped, and the fruit very fine. Mr. Pritchard has good loam at command, and he is a firm believer in Thomson's Vine manure, which he uses for Tomatos also, and they evidently like it, for the fruit is also so fine. Sutton's Perfection and Hackwood Park are the favourites here; Golden Queen is also very fine, and here and there is a plant of Hepworth's Goliath, a great cropper, but the fruit is much more corrugated in form than the others.

Pines are done very well indeed here, fruiting succession and suckers in the same houses. Liberal treatment by frequent waterings with Thomson's Vine manure in solution, poured into the axils of the leaves (not the centre of the plants) is adopted here, and certainly more highly finished fruits could not be found. Mr. Pritchard thinks much of Charlotte Rothschild, and he grows Queens, and prefers one of them which he had under the name of Enville Queen. The Pine-houses are low, span-roofed, the floor below the ground level, and a division in the centre of the range, which is 50 feet long by 15 feet wide, and for health and vigour, and quantity of fruit cut from the limited space, Umberslade can hold its own. *Rambler No.* 2.

PEACH TREES AT NUTFIELD PRIORY.

THESE are now in fine condition, and are not in the least affected by the unpropitious weather of last year—nor has the past dull summer influenced them unfavourably, unless it be with the later sorts, which, should the autumn sunshine prove short, then fruits may not ripen well enough for dessert, although good enough for cooking; indeed, the late Peaches rarely ripen perfectly out-of-doors, and, on that account they should be sparingly planted.

In the present instance there is nothing to be desired—they are planted against a brick wall, 12 feet high and nearly 300 feet long. It has a southern aspect, and stands at the base of one of the greensand ridges on which the Priory itself is built—thus having complete shelter from the north. The majority of the trees have now been planted about ten years. They are fan trained, and the young wood is always laid in thinly to ensure proper ripening, there being just enough to clothe the wall, and no more. The trees, where the fruit remains, are regularly studded all over with bright, clean fruits, and of the various Peaches grown, Mr. Moffatt, the gardener, who by-the-way planted the trees, speaks highly of Condor, a handsome free sort, coming in before Early York, itself a good early variety; Dymond, large and prolific; Goshawk, rather pale, but a fine Peach; Stirling Castle, and Violette Hative. Of older varieties there are Bellegarde and Royal George; Noblesse, which does very well, and when grown outside, as it is here, it takes on a deep colour. Albatross does well and produces large fruits, and various late varieties are included in the collection, but sometimes the ripening season is too short for them; but those which succeed best this year are, Barrington, Sea Eagle, and late Admirable. Nectarines have also been planted, but they do not ripen satisfactorily without the aid of glass, therefore they are grown almost exclusively indoors. *F. R.*

A BOTANIC GARDEN AMONG THE ALPS.

A FEW months ago the *Gardeners' Chronicle* spoke of the institution, in the Alps of Valais, of a botanic garden. This garden was inaugurated by a brilliant *fête*, which attracted to Bourg St. Pierre a large number of the botanists and *savants* of all countries.

The new garden is at an elevation of more than 5600 feet above the level of the sea. It is situated on a cone-shaped knoll, on which was formerly the old *château* of Quart. This knoll is about 200 feet high, and is composed of a number of plateaux and natural terraces, planted with Pinus Cembra and Larch, and faces north, east, and west. On the summit is a plateau facing the south, on which is raised a large federal banner which will remain there until the committee have sufficient means to establish a little *châlet*, which will contain the library and herbarium of the garden.

The Association for the Protection of Plants (the President is our Swiss correspondent, M. H. Correvon) has bought the land, and converted it into an alpine garden, suitable for plants from all the alpine regions of the globe. It has been laid out with this idea, and representatives of the floras of the Himalayas, of the American mountains, of New Zealand, of the Antarctic regions, of the Caucasus, of Siberia, of the Pyrenees, the Alps, Carpathians, and the Ural, will be separated, and each cultivated in a special division.

M. H. Correvon on July 19 last, at a special meeting at Bourg St. Pierre, placed the title-deeds of the property of the garden in the hands of the President of the International Committee of the Linnæa, M. A. de Claparède, formerly Swiss Ambassador at Vienna, and President of the Federal Political Department. An International Committee was duly established, and the garden was accepted by M. de Claparède on the part of the Protection Association, which, not being registered, has no legal title to the possession of funded property.

Naturally, M. H. Correvon was named Director of this new trial garden, in which he had already planted several thousand mountain plants, thanks to the generosity of an Englishman, Dr. G. Romanes, and to the Jardin d'Acclimatation of Geneva.

This Botanic Garden is at so high an elevation that interesting observations can be made concerning the floras of all the Alpine regions of the globe, on the relations of plants with insects, their acclimatisation, variability, &c. The importance of such a space for trials is inestimable, and is demonstrated by the fact that the International Committee of the Linnæa has on its lists the names of such authorities as Sir John Lubbock, M.P., Dr. G. Romanes, Mr. H. L. de Vilmorin, and Mr. John Ball.

Already consignments of plants have been sent to M. Correvon for the Linnæa, and a German botanist who is travelling in the East, and is continuing the work of Boissier—M. Bornmüller—has promised some interesting specimens. Other parcels are expected from Canada, Greenland, and New Zealand. We invite those of our readers who are in suitable latitudes, to send to M. Correvon seeds or bulbs from the northern regions in which they are travelling, for the alpine garden of Bourg St. Pierre, which will necessarily serve later on for the temporary reception of plants from high altitudes which cannot be acclimatised directly with us, but require to be subjected to an intermediate temperature first. In this way, M. Correvon is growing to try to acclimatise the celebrated but fragile Calypso borealis, which he hopes to introduce into cultivation by accustoming it to this intermediate position.

It is evident that the Alpine Botanic Garden of Bourg St. Pierre should have the sympathies not only of botanists but also of horticulturists. The Swiss Alpine Club, the Association for the Protection of Plants, the French Alpine Club, and several botanical societies, have voted annual subsidies to the Garden, and the members of these societies will have free admittance on their statement that they are members. Other persons have to pay an entrance-fee of 5*d*.

We give two views (figs. 48 and 49, pp. 325 and 328), one representing the Botanic Garden, the other the village of Bourg St. Pierre. This village is situated on the main route to the Great St. Bernard, and 2½ hours from the well-known Hospice. It is just at the confluence of the valleys of Valsorey and Entremonts, and in a country rich in rare plants and natural beauties. We heartily wish success to the work undertaken in this beautiful corner of the Pennine Alps.

ORCHID NOTES AND GLEANINGS.

BULBOPHYLLUM SALTATORIUM, *Lindl.*

A SHORT time ago the remarkable movements of the labellum of Bulbophyllum barbigerum, and the attention the plant received when exhibited at the summer show of the Royal Horticultural Society, in the Middle Temple Gardens, were mentioned in these columns. A closely allied species, in which precisely similar movements occur, may now be seen in the Kew collection. It is B. saltatorium, Lindl.; like the other, a native of Sierra Leone, and presenting scarcely any essential differences of structure, though of smaller size. In both cases the slightest current of air is sufficient to set the lips in motion, and the effect, as they continually pop up and down, is extremely curious. It was the movements of the lip, rather then the flowers themselves, that rivetted my attention, when passing, the other morning; just as a moving insect would attract notice; which at rest would be passed unobserved. And the next discovery was, of course, that the ventilators were open. A "little athlete," B. barbigerum was called, though the term is scarcely applicable, any more than it would be to a windmill in motion, for it is the currents of air which supply the motive power, and the lip remains quiescent in a perfectly still atmosphere. The movements, however, must serve to excite a considerable amount of curiosity in the minds of passing insects of prying dispositions, and there can be no doubt of the end it serves in the process of fertilisation. It is very interesting to observe the way in which the hinge of the labellum and the curious horns of the column act, as it were, in guiding the movements in one particular direction. It would be very interesting to watch these plants in their native wilds, and note by what insects they are visited. *R. A. Rolfe.*

ORCHIDS AT MESSRS. JAS. VEITCH & SONS'.

In the cool-houses at the Royal Exotic Nursery, King's Road, Chelsea, among a fine show of Masdevallias, Odontoglossum macranthum, and Odontoglossum, appears a novel form of spotted Odontoglossum crispum, which, in spite of numerous competitors, may well be deemed first-class. Its flowers, which are heavily blotched all over with violet-purple, bear a striking resemblance to the famous O. Pescatorei Veitchianum. Also in bloom in the ornamental rock-house are the true O. bictonense album, the rare Calanthe veratrifolia australe, with fine large heads of white flowers, the older ones having bright yellow labella; Peristeria elata, good specimens

of most of the Miltonias, Lælia elegans in several forms.

In the recently constructed Dendrobium-house, a marvellous growth has been put on all the species this year; D. ciliatum, the new D. chrysolabium, the richly-coloured D. rhodostoma, D. superbum Burkei, the rare D. Wardianum giganteum, and a fine new species from New Guinea, with stout spikes of white flowers with rose lips, are in bloom.

Among a number of fine Cypripediums in bloom is a large specimen of an unique form of C. niveum with perfectly formed snow-white flowers, heavily blotched with purple. The Vandas here are in grand order, V. Sanderiana, V. insignis, a number of plants of V. cœrulea, and others being in bloom or bud.

Vanda (Renanthera Lowii).

A fine specimen of this stately Orchid, worthy of record, is now in flower at Messrs J. Veitch & Sons' nursery, Chelsea. It has three spikes, each 7 feet or so in length, and bearing numerous large wax-like flowers, with yellowish ground colour, richly barred with brownish-red; the two basal odd flowers nearest the plant on each spike orange-coloured, spotted with crimson. The plant is in fine health, and the vivid colours of the flowers show it to be a very superior variety. To a lover of flowers, who had never seen this plant in bloom, a long journey should not prevent him availing himself of the opportunity, especially as it may be witnessed among such a profusion of rare things as there is always to be found in this famed establishment.

Orchids at Mr. Wm. Bull's.

The extensive collection here has perhaps never been in so good condition as at present, and seldom at this season can such showy and interesting things be seen in the Orchid-houses. Several fine examples of Catasetum Bungerothii are in flower, also a batch of the true Dendrobium Phalænopsis; a fine group of Vanda Kimballiana (see p. 335, fig 50), one plant having a spike 18 inches in length, with twelve flowers; Lælia amanda, and several handsome forms of L. elegans; two fine examples of Vanda Sanderiana, one with two spikes of eight flowers each; the rare Saccolabium miniatum; Oncidium janeirense majus, a large quantity of Odontoglossum grande, and other Odontoglossums; Masdevallia inflata, and other rare Masdevallias; several grand examples of the snow-white Angræcum articulatum, a splendid form of Miltonia spectabilis Moreliana, and good specimens of M. candida grandiflora; Bulbophyllum umbellatum, and various other rare plants of botanical interest, as well as the ordinary showy things of the season.

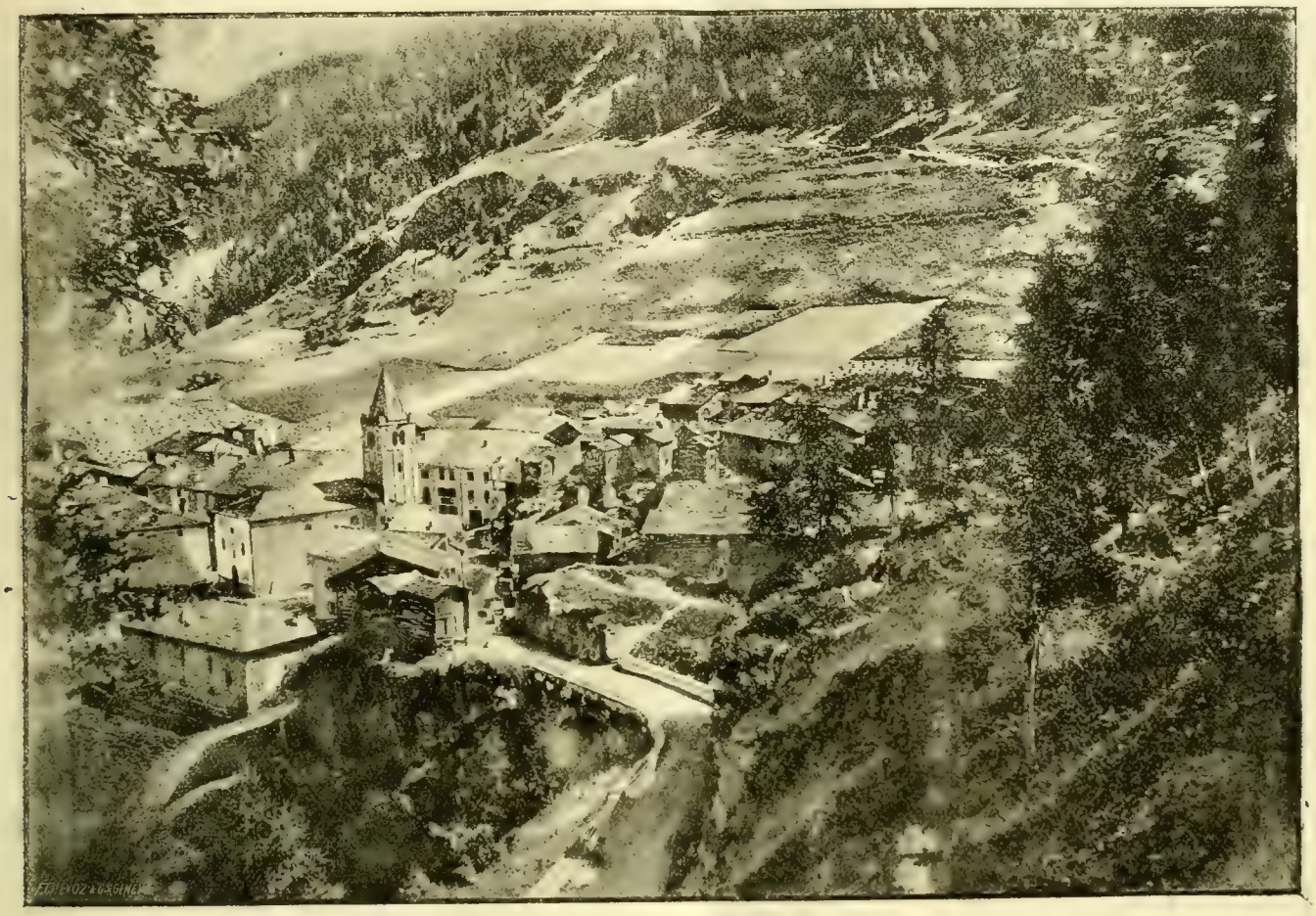


Fig. 48.—The village of Bourg St. Pierre: site of the Alpine Garden. (see p. 324)

Mr. Boyle's Orchids.

To the young generation of orchid-growers, that part of the vale of the Clyde where the thriving village of Uddingston is situated will probably be little known, but the name will awaken memories in the earlier cultivators, and very pleasant ones, of the renowned collection which existed at Meadowbank some years ago.

It is now sixteen years since the fine specimens comprised in that collection were brought to the hammer, but the writer of this notice has thought that it may be of interest to some of those who were drawn to the locality by the attractions of the Meadowbank plants, to know that a love of Orchids still lingers in that neighbourhood, and that their cultivation is being successfully and unostentatiously carried on by a gentleman who deservedly ranks in the West of Scotland as one of the foremost amateurs of the day, and the results of his efforts are so marked as to be worthy of being placed upon record in the pages of the *Gardeners' Chronicle*, and thus serve as incentives to others. We write therefore literally *pour encourager les autres*, as well as to give to mere merit its due.

It was about the time of the sale of the Meadowbank collection that Mr. Edward Boyes, of Burnpark, came to live in the locality, and built for himself a comfortable villa in the outskirts of the village, and there began to spend much of his spare time in horticultural pursuits. He first came into notice as a successful grower of Ericas, and not only delighted his friends with the beautiful specimens he produced, but took a prominent place as an exhibitor, and soon became known amongst competitors as a very dangerous rival. His success with these plants, which many find so difficult to manage, was quite remarkable, and in his treatment of them he proved himself a gardener by intuition. Having no training in the art, he relied chiefly on his own close study and observation of the requirements of his favourites, though always ready to accept a hint when he saw he could do so with advantage, and his success with Ericas was, no doubt, due, in a considerable degree, to the close and unremitting care with which he tended them. Amongst the trophies which he carried off at shows are a Silver Cup, won in Glasgow in 1877 for twelve specimen plants; a Silver Cup, also gained in Glasgow in 1875 for a collection of plants, and which became his property after having won it two years in succession; a tea and coffee service carried off in 1882; two Veitch Memorial Medals awarded him at Dundee International Exhibition in 1884—one for the best specimen Orchid, and the other for the best specimen stove or greenhouse plant in the exhibition; besides many other important prizes, which space will not admit of our mentioning in detail.

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A few years ago, not content with his success with Heaths and the few stove and greenhouse plants which he was enabled to grow, Mr. Boyes took to growing and showing Orchids. His efforts with these have been chiefly confined to what are known as the cool Orchids, and principally Odontoglossums. His collection at present includes upwards of one hundred plants of O. Alexandræ and its varieties, which are his special favourites. Amongst these may be found:—O. roseum, Warnerii, &c., and fine specimens of Andersonianum, baphicanthum, Chestertonii, &c.; and thriving young plants of Pescatorei, Rossi major, Harryanum, and others. Amongst other species of Orchids in his collection is a beautiful lot of Masdevallias, fine strong plants of the leading varieties, the names of which need not be given in detail, together with such old-established favourites as Epidendrum vitellinum majus, Mesospinidium vulcanicum, &c. One of his houses Mr. Boyes has set aside chiefly for his specimen O. Alexandræs. to make room for which he has discarded all his specimen Heaths, and it would be difficult to find a prettier sight than this house presents when the plants are at the height of their bloom. Whether from the point of view of the selectness of the varieties, or the luxuriance of growth displayed, it is no exaggeration to say that a degree of perfection has been attained by Mr. Boyes, which attests his ability as a collector and cultivator. I will add that, while giving most of his attention to cool Orchids, Mr. Boyes does not leave out of sight those which require a warmer treatment; and of these he has a nice collection of Cattleyas, Dendrobiums, Lælias, &c., in excellent condition. In his treatment of his plants he does not profess to have any secret; and he has found no royal road to success—plodding carefulness and intelligent study of the requirements of the various species, being sufficient for the purpose. *S. R.*

The Gardens of Paris.

THE GREAT EXHIBITION.

At the Exhibition, in the grounds of the Trocadero, various sections of horticulture are well represented, and the devotion of a good deal of time must be counted upon. Almost a day may be given to a general inspection; there is no part without interest; and, unless care be taken, it is almost certain that something of consequence may be missed. This may be said of certain new plants, of which, in this country, we have only heard, that occupy little beds here and there. Nicotiana colossea, and Solanum albidum Portmanii, both good and sub-tropical plants, may be instanced among them.

Fruit trees form an important feature; but of greater consequence than all, in my opinion, are the fine exhibits of trees and shrubs, in which some very good Coniferæ are included.

Fine Palms and magnificent Bamboos, brought from the South of France, show well their effect in a favoured climate. Among the Palms there is nothing so fine as Brahea, or Pritchardia Roezli, which has remarkably handsome glaucous leaves; Cocos Yatai, resembling C. australis, but of stouter habit, with which I was before unacquainted, seems to be used a good deal; and Phœnix canariensis and Jubæa spectabilis, of course, are stock subjects in the south. Aquatics are shown in choice variety, and among them Nymphæa odorata sulphurea, with fine yellow flowers, the petals narrower than those of N. Marliacea chromatella, seemed to me the most striking; but there are various red forms of Nymphæa, and several other aquatics, also good. In the Japanese garden there is much interest, but the good points, unfortunately, are mixed with a bulk not at all deserving of notice, and of no credit whatever from any point of view. Various beds about the grounds are good, and especially among them may be mentioned those of the new Cannas, Montbretias, and Cockscombs. One of the prettiest was of white Bouvardia and Montbretia in combination.

The plant-houses, themselves the subject of exhibition, are numerous, and contain in some cases special exhibits, as of Cacti and Bromeliaceæ, but in others the contents are mixed. Off-hand, the houses filled by M. Jolibois, of the Luxembourg Gardens; Truffant, of Versailles; and by M. Cappe, with his 1st prize collection of Bromeliaceæ, may be specified. On the other side of the Seine there is not much of consequence, but the Cacti and other succulents about the Mexican pavilion near the Eiffel Tower may be mentioned as worth inspection, more particularly by the specialist, who may, I think, find a novel kind or two. Some of the specimens are large, but a better show could have been made with plants not especially imported. The Agaves, of which we heard so much, are not dead, but are in a state of picturesque ruin.

Jardin Fleuriste.

In combination with the exhibition there is only one visit to make, and that is to the Jardin Fleuriste at La Muette. It is reached by steam or ordinary tram in some few minutes from the outside of the Trocadero, and, like all the gardens or nurseries devoted to the service of the city of Paris, is well worth a visit. Here all the tender gardening is done, whether for indoor decoration, or summer decoration in the parks and squares. The operations are extensive, as may be judged from the 280,000 Pelargoniums that are supplied for bedding out. But this must not give the idea that choice collection plants are out of court, for there are many good things to be seen, and the furnishing sets themselves are more varied and have greater interest than would be the case with us.

The Bois de Boulogne

must, of course, be seen, and, with the two excellent nurseries for the supply of trees and shrubs to the squares of Paris, will take an entire day. La Muette, it may be remembered, is close to one of the gates, but it is so conveniently reached from the exhibition, that a few hours can easily be given from the days spent in that quarter. The Bois, it must be remembered, is extensive, and, in point of time and other considerations, a conveyance may be necessary. In that case, the best approach would be from the Arc de Triomphe; but there are many others, and boat and rail may be taken from various quarters. The most necessary to be seen, perhaps, is the beautiful scenery of the upper and lower lakes, which has resulted from skilful planting. Not far from the upper lake, and near the Porte d'Auteuil, is one of the nurseries above referred to—that for evergreens and Coniferæ; the other, for deciduous trees and shrubs, is distant from it about half an hour's walk, near the Porte de St. Cloud. Both these nurseries are remarkable for their choice contents, and for the intelligent selection of all that is new and old for the purpose of town gardening.

Quite on the opposite side of the Bois is the Jardin d'Acclimatation, which may be visited as a good zoological garden, but it is not now worth while visiting for the sake of the plants which are said not to attract sufficiently. Some, however, especially Palms—and good ones, too—are kept for sale. Caryota urens seems to do remarkably well on the low temperature of the winter garden, but it was planted out when already a good specimen.

Versailles.

At Versailles a couple of days may be spent with advantage. Little is gained in going or returning by tram, and to save time it is much the best to take a railway-ticket from St. Lazare. One of the principal nurseries is that of A. Truffant in the Rue des Chantiers; it is rich in choice contents, and is extremely well managed. Many good ideas of culture may be got here. Orchids are a specialty, and Bromeliads receive special attention; Aroids, too, are well grown. Another good nursery is that of Duval in the Rue de l'Ermitage; and another also, belonging to M. Moser, 1, Rue Symphorien. M. Truffant has a house devoted to his plants in the grounds of the Trocadero, and it should not be missed. To me the School of Horticulture was a chief objective, and commencing a day with it, the tram may be taken at the Versailles station for the "Orangerie." It is chiefly devoted to fruit and vegetable culture, in which much may be learnt; plant growing is not so well done, and much better culture can be seen elsewhere. This is a serious attempt of its kind, but the opinion forced itself upon me that with Kew and the instruction given there, with Chiswick and our great nurseries, and the numerous private establishments where work is well done, coupled with the press of this country, our gardeners need in no degree be behind for want of a similar school of horticulture. In practical work, the end of all, they are not; excellences and deficiencies on both sides make a fair balance. From the School of Horticulture to the Palace is but a step, and going through to the gardens behind, a stroll of half an hour or so will give a good idea of the landscape gardening of a bygone period. It shows what to avoid—a maze of intersecting avenues—and therefore needs no further remark. A walk of about twenty minutes, and we reach the Great Trianon, where there is little to note from the present point of view. The grounds of the Great and the Little Trianon adjoin, and we pass at once to the latter, which are well worth seeing. They are laid out in the style termed English, and surpass all else to be seen of the kind in the neighbourhood of Paris. Many fine old trees could tell of Marie Antoinette, and among them are interesting and choice kinds. Some Taxodiums by the lake present the finest up-growth of big roots I remember to have seen, and for some distance the banks are buttressed with great post-like roots, as if the trees had the intention of supporting the banks for their own preservation. Near the orangery is a fine Wellingtonia with a stem girth of 14 feet, and near to it a most beautiful Sophora japonica pendula, as well as a gigantic fastigiate Oak. In this garden are the finest old Junipers I have seen. *R. I. L.*

The Herbaceous Border.

EARLY FLOWERING PHLOXES.

From time to time much has been written upon the general usefulness of the late flowering or decussata section of Phloxes, which are generally known as herbaceous, and yet, at the same time, next to nothing is said of the "early flowering," by which I mean those which figure under the head of P. suffruticosa. As a matter of fact, they seem almost forgotten, though this is hardly to be understood, for they are equally beautiful in their way, though not possessing the intense shades of colour of the decussata group; as pot plants, however, they are much superior by reason of their less gross growth, and their dwarf, compact habit. The rougher foliage of the decussata section is in these replaced by smooth shining leaves, having more the appearance of the hybrid form of Pentstemon gentianoides. In the majority of instances these rarely exceed 2 feet high, some only half that height, while a very few attain to 2½ or 3 feet high.

When in charge of the hardy plant department of Messrs. Rollisson's nurseries at Tooting some years ago, I remember some very good distinct kinds of this section of Phloxes, which produced very fine heads of flowers; and mention may be made of Miss Robertson, a pure white self, with massive panicles of bloom; this variety rarely exceeds 15 inches high, and of its grandeur few people are aware. I may state that its trusses of bloom would measure fully 9 inches deep, *i.e.*, from the summit to the base of the truss. Mrs. Hunter, pure white with rosy-crimson eye, was another very fine variety; and to these, if a choice selection be required, may be added: King of Purples, Lady Napier, fine pure white; Mrs. James Watt, fine white, with rosy-lilac centre, large pips and excellent spike; Rosy Gem, Argus, French white; Snowflake and Swan, both grand white selfs; and A. McKinnon, rosy-purple with crimson centre. As

I have previously stated, the brighter shades of which we have so much in the decussata section, are still wanting in the varieties of suffruticosa, this group containing a very large proportion of whites, with centres of crimson, or shades akin to that colour. Invariably, however, the white is very clear, and the crimson or rosy-lilac centre well defined, therefore resulting in a very effective combination. These varieties are as easily grown as any, and being perfectly hardy, should find a greater number of admirers than they have at present; but doubtless this will follow when they are better known. Before concluding my reference to these, I should like to state that it occurred to me as very misleading a short time since, when a variety named "White Swan," a white with crimson eye, was awarded a floricultural certificate by the Royal Botanic Society, Regent's Park, a pure white self with fine truss, and bearing the same name, having been in cultivation for years past; the plants exhibited, I should regard as Mrs. Hunter, or one very similar. *J.*

Anemone japonica.

There are few more useful or effective autumn-flowering plants than the above, and the variety A. j. alba, or Honorine Jobert, is usually the most valued. The plant is said to have originated as a sport from the rose-coloured A. japonica in the garden of M. Jobert; there is also a light rose-coloured variety, the exact counterpart of A. j. alba, only differing in colour, and various speculations and conjectures have been advanced as to its probable origin, but very possibly it may also have been a sport from the type japonica.

As with many other hardy herbaceous plants, the best results are obtained by good treatment, and large masses of the plant should be grown where much cut bloom is required. When this is done, the results are very much better than when a single clump is huddled up with other plants in a border, not that the plant is unable to take care of itself, but in such positions it is difficult to afford it the best cultivation.

A very successfully grown group of the white variety is now in flower in Mrs. Fielden's garden at Nutfield Priory, Surrey. From Mr. Moffat, the gardener, I learned that the site is put into good condition for the plants by being trenched and manured. At first the roots are stood widely apart, but the plant spreads rapidly by side-roots, which send up new shoots, that in a short space of time the plants soon meet, and form one mass of stems. In winter the clumps are heavily mulched with manure, which, while enriching the soil, serves also to hold moisture about the roots in summer. Under this treatment, towards the end of August they begin to yield great quantities of flowers. In regard to position, it may be stated that a mass planted on the north, and one on the south side of a wall, that on the north side was much the better, thus showing that moisture was of more importance to its growth than direct sunlight. Periodical division and replanting is advisable, when they get very crowded. *F. R.*

CAMELLIAS.

In Southern Japan I saw many trees from 8 to 10 metres high, and 1 metre in circumference. The plants in their wild condition reach the same height, but not the same thickness of trunk. A magnificent specimen in the court of the temple at Yutenji, near Tōkio, with straight trunk and beautifully formed crown, I estimated in 1874, by its shadow, at 5 metres high. The trunk had a circumference of 1·47 metre. In 1844 Lehmann found the latter 1·53 metre, and the height 5·5 metres. The age of the tree was given him as 120 years. . . .

The Camellia (C. japonica, Lind.) is everywhere indigenous in Southern Japan. It grows to a good-sized tree in the mountain forests of Kiushiu and Thikoku, often at an elevation of 800 m. above the sea; it extends into the deciduous forests, where it is distinguished for size above all the other evergreens except Conifers. It is found with the evergreen Oaks on the south-eastern coast of Hondo as far as the 36th parallel, and as a large bush on the Bay of Yedo. The northern limit of its natural growth on the coast of the Japan Sea is the hill-country of Northern Echigo, about 38° N. latitude. I found it there in the Pine and bush forests as a bush 1 m. high. In Southern Kiushiu trees of 10 m. high and 1·4 m. circumference are frequently seen. I found this size, however, only among cultivated trees. I saw here also often the parasite, Viscum articulatum, Burm., on its branches. In its wild state the Camellia blossom is a simple red flower, which never opens to the full, but remains half-closed, like a Tulip. This variety is cultivated solely for the oil, and only as far as the Tsugaru Straits. Both the single and double Camellias are found in gardens and temple groves; the latter, however, in fewer varieties than with us. The blooming season begins according to the latitude—in January or February, and lasts until April. The colour of the wood changes gradually from a light grey or pink to darker shades. The bark resembles that of the Beech tree. *Rein*, "*Industries of Japan.*"

VEGETABLES.

PEA, CHARLES I.

Mr. Gilbert sent us some short time since a sample of this Pea. It is a dwarf kind, very prolific. The pods measure a little over 3 inches in length, and a little over half an inch in breadth, are dark-green, linear-falcate, with about eight small Peas, of very delicate flavour. Judging from the sample and the season of the year, this is a variety to be specially commended for its excellent quality.

Cauliflower Sutton's Magnum Bonum.

This is a fine acquisition amongst Cauliflowers, and was sent out by the firm whose name it bears, two years ago. It combines early maturity and good flavour—that is, freedom from rankness—and when better known, it is a variety that is sure to become a favourite in gardens. When cooked, the head is white as snow, and firm. The plant is a dwarf grower, with ample foliage, which protects it from the sun, so that the head does not get discoloured. Seed was sown March 15 under glass, the seedlings pricked out in boxes in good soil as soon as possible and planted out in the quarters at the end of April; fine heads were formed in the first week in June, and we have still a good supply from this sowing. *A. B. C.*

Late Peas.

Peas have been a rather precarious crop in some places this season. I have noticed that as a rule the later growing Peas have been the best and the least affected with mildew. We have had a good supply, daily, up to the present time, and our last, Ne plus ultra, is now in bloom. During the last two weeks, we have been gathering Duke of Albany, Telephone, and British Queen, from sowings made on June 3, and the Peas gathered have been as good in quality as any picked in July. It is good practice to make several sowings of the larger Marrow Peas for late crops, and by that means extend the season of first-rate Peas, although it is very general to advise early Peas to be sown, and my experience teaches me that it is a mistake to do so, for should mildew show itself upon a small dwarf growing Pea plant, it very soon succumbs owing to its lack of vigour, but the strong-growing Peas partially resist it. *W. A. Cook.*

PLANT NOTES.

POLYPODIUM CHNOODES.

Among evergreen basket Ferns, this handsome and attractive plant well deserves a place, as it is not at all difficult to manage, and can be grown in either warm or cool temperature. Its general habit is most compact and uniform, which gives it an advantage over many of its genus for basket culture. The fronds are from 1 to 3 feet in length, gracefully drooping, and cut to the rachis with pale green entire pinnæ, about 5 inches long, strikingly undulating, and in some cases slightly crested. This plant is easily reproduced from spores. The young plants should be grown on quickly, and when well rooted in 3-inch pots, planted straight away into baskets about a foot in diameter, the soil most suitable being a mixture of peat, loam, and leaf-mould in equal parts, with a good sprinkling of silver-sand. Some specimens may be now seen in the tropical Fern-house at Kew. *G. W. Staden, Royal Gardens, Kew.* [The peculiar name seems to be from the Greek *chnoios*, downy. Ed.]

Hymenocallis expansa.

I am indebted to Mr. J. G. Baker, of Kew, for the name of this fine and fragrant white species, which I consider handsomer than the plant grown in gardens as Pancratium fragrans. Its staminal cup, or corona is more ample, and somewhat approaches in form that of H. macrostephana. H. expansa seems to be more hardy than other species, as with me it has passed the summer out-of-doors, and flowered well—a fact which is worth recording. *James O'Brien.*

Gypsophila paniculata.

Although this is by no means a showy plant when in bloom, it is exceedingly useful for cutting, as its light sprays form an excellent basis and support to any small flowers worked in, or placed with it in vases, and it is of equal value for working into bouquets. The plant sends up a lot of hard, wiry stiff stems, which branch out freely and bear a profusion of very small white flowers. This Gypsophila is quite hardy, and does well in almost any kind of soil, and comes up freely from seed, which should be sown under handlights as soon as ripe, so as to get plants up by the autumn, as they become strong enough to flower the following year. *J. S.*

FOREIGN CORRESPONDENCE.

THE NATIONAL SOCIETY OF AMERICAN FLORISTS.

On August 20, 21, 22, the fifth annual session of the Society of American Florists, was held in the Music Hall, Buffalo, N.Y. Under the presidency of Mr. Jno. N. May, Summit, New Jersey, a lengthy and varied programme was successfully carried out.

An exhibition of plants, cut flowers, boilers, and horticultural appliances was held in conjunction with the convention, and proved far above the average in point of excellence. Between six and seven hundred associates were present, and included delegates from all the States, as well as from Canada.

The Hon. Philip Becker, Mayor of Buffalo, delivered an address of welcome, which was heartily responded to by Mr. A. P. Caulder, Boston, Mass.

The President's address, which was full of interest, dealt with the horticultural Press, which, he said, had done much to stimulate and promote horticulture; he spoke also of the benefits gained by exhibitions, and of the practical education of the young gardeners.

The programme contained essays which were read by prominent horticulturists, and proved to be of unusual importance and interest; a question-box was also open, and was productive of many interesting discussions.

Mr. W. C. Barry, Rochester, N.Y., in his paper on "Roses," spoke encouragingly of the varieties sent out by English raisers, more especially the hybrid perpetuals, and of their good qualities as "hardy" Roses in all senses of the word.

"The Elevation of our Business," by Mr. Robert Craig, Philadelphia, Pa., was received with unusual enthusiasm; he was in favour of the establishment of a "plant exchange" and a "labour bureau" for the information of those seeking employment.

Mr. H. H. Battles, Philadelphia, Pa., in his essay on "Education," proposed that all florists' clubs should add a library to their possessions.

Mr. Jno. Thorpe, Pearl River, N.Y., suggested in his essay on the "Establishment of an experimental garden on the lines of the one at Chiswick," that an appropriation should be obtained from Congress; he stated that the original cost would be 25,000 to 30,000 dollars, and yearly maintenance 5000 to 7000 dollars. Your correspondent gave an outline of his experience and the working of the gardens at Chiswick.

Mr. Peter Henderson, New York City, spoke on the necessary qualifications for properly filling the following situations:—(1), Grower in commercial greenhouses; (2), Head gardener on a private estate; (3), Florist in public institutions; (4), Superintendent of public parks and gardens. For the first, he said three years American knowledge is equal to ten years of European; to the second, European knowledge was preferable.

"Useful Summer Blooming Plants," by Mr. A. E. Whittle, Albany, N.Y., and "Horticultural Exhibitions," by Mr. Edwin Lonsdale, Chestnut Hill, Pa., were of the usual passing interest.

"Landscape Gardening," by Mr. Wm. McMillan, superintendent of the Parks at Buffalo, severely attacked carpet bedding in all its varied forms as being unnatural, and praised all things that were kept in relation with nature; which caused Mr. W. R. Smith, Curator, Botanical Gardens, Washington, to exclaim: "Since Bobby Burns penned holy Willie's prayer, such biting things have not been said."

"Orchids, The natural habitat of the leading varieties," by Mr. J. Fostermann, Summit, N.J, contained much valuable detail.

Much disappointment was evinced that a vote was not taken on the national flower; the Chairman of the Committee, Mr. Robert Craig, announcing that the time was not yet ripe. I note that *Popular Gardening*, advocated the panicled Phlox.

A National Chrysanthemum Society was formed, with Mr. Jno. Thorpe, Pearl River, N.Y., as President.

An Association likely to prove of great benefit to the European trade, was formed under the title of "The Florists' Protective Association," its main object being to deal with dishonest traders.

The fourth day was set apart for a trip to Niagara Falls, and a collation provided by the Buffalo Florists Association; with a drive through the principal parks, avenues, and places of interest, concluded a most enjoyable and interesting convention.

It was decided that the sixth session should meet at Boston, and the following officers were elected for the ensuing year: Mr. J. M. Jordan, St. Louis, Mo., President; Mr. M. H. Norton, Boston, Mass., vice-President; Mr. Wm. J. Stewart, Boston, Mass., Secretary; and Mr. M. A. Hunt, Terre Haute, Ind., as Treasurer.

Exhibits.—A prize of 100 dols. was offered by Messrs. Peter Henderson & Co., N.Y. City, for the best herbarium of native plants. Mr. E. M. Oliver, Washenton, D.C., who had a meritorious and well preserved collection, containing 1500 species and varieties, was awarded the prize; and, owing to the superiority of the collection of Mr. J. N. Butterfost, Lambertsville, N.J., the firm generously awarded an extra 25 dols. as a 2nd. The premier collection of plants was exhibited by Messrs. J. R. Pitcher and W. A. Manda, Short Hills, N.J., who had a representative lot of Orchids, with Anthuriums, Palms, and other foliage plants. Mr. H. A. Dreer, Philadelphia, Pa., displayed a well-grown collection of Palms, Ferns, and new French Cannas. A handsome collection of Gladiolus (300 varieties) and Phlox Drummondii, with other cut flowers, came from Mr. James Vick, Rochester, N.Y. Mr. Robert Craig, Philadelphia, Pa., staged a handsome collection of Ferns and Palms. The Michel Plant and Seed Co., St. Louis, Miss., showed their single branching tuberose Albino, which received much comment. Messrs. W. P. Simmonds & Co., Geneva, Ohio, staged cut zonal Pelargoniums. Mr. C. Thurston, Ridgewood, N.J., had a new hybrid Begonia (B. metallica × B. sanguinea), with handsome glaucous foliage. Mr. Ben. Grey, Malden, Mass., exhibited Nymphæa zanzibarensis, M. devoniensis, M. odorata rosea. The premier boiler exhibit was that of the Hesendeen Manufacturing Co., Geneva, N.Y., who showed their famous "Furman" boiler, and the only European exhibitors were Messrs. Osman & Co., London, England, who showed horticultural sundries.

From our own American Correspondent.

Plants and Their Culture.

Caladiums.—These plants will now be past their best, and should be gradually dried off, placing them out of the reach of drip, and at the coolest end of the stove, on their sides, under the stages. It is not advisable to remove them to a house with a lower temperature than an ordinary stove, as they are so subject to decay in a low temperature.

Gloxinias, as they lose their beauty, should be treated like the above.

Ferns.—These will now require less shade and more air, keeping the house a little drier, so as to harden the young fronds. This is especially necessary in the case of Adiantums and other Ferns grown for cutting purposes. We find it best to grow those for cutting in a cool pit, and with less moisture, and the plants more confined at the roots, and feeding them liberally with weak liquid manure while making their growth. All potting, except that of small plants from spores, should be completed. More care will now be necessary to prevent damping off, and to this end more air should be given and less moisture, allowing some ventilation during the night. Weak liquid manure will be beneficial to many of the stronger growers when well rooted. The syringe must be used carefully where Gymnogrammas and Adiantum Farleyense are growing, and it is, perhaps, the best plan to place them together at one end of the fernery. Gliechenias require abundance of water, as do also most of the strong-growing Ferns. Tree Ferns should also get abundant supplies of water, and the trunk should be wetted twice daily on bright, sunny days, taking care to thoroughly moisten them all round. I have observed that in some cases the trunks are suffering from drought, and the fronds suffer from being constantly syringed from one side only; moreover, plenty of water should be given to the roots, as the daily syringing is not sufficient in the case of large plants with a mass of spongy roots.



Fig. 49.—view showing the site of the garden, bourg st. pierre. (see p. 324.)

A pan or two should now be prepared for spores, as many of the old fronds will ripen during this month.

Greenhouse.—The early plants of show and fancy Pelargoniums will have broken freely by this date. These should be shaken out, repotted in smaller pots, and placed in a cold frame, keeping a little close for a few days. The stock of Cyclamen seed should now be sown as soon as possible, in a good compost of fibrous loam, decomposed manure, leaf mould, and coarse silver sand. We use 60-sized pots, sowing six to eight seeds round the sides of the pot. They are then readily moved when ready to pot off singly into small thumbs, the seed pots should be placed in a temperature of 55° on a moist coal ash bottom, and kept near the glass. Cinerarias should be shifted on as required; a few of the early sown should now be in their flowering pots if very early bloom is wanted, 8-inch pots will be found large enough for these plants.

Late sown plants should be shifted out of the seed pan as soon as ready, and all the plants should get regular fumigation. This will apply also to the young plants of Calceolarias. Primulas needing a shift should not be neglected; early sown plants will now have filled their pots with roots, and should get liquid manure occasionally, and less shade may be given. Double-flowering varieties should be kept free from damp, and near the light.

Calceolarias when ready should be carefully pricked off into small pots, and placed in a north frame and kept close for a few days. Fuchsias as they get shabby should get an open position outside, and gradually dried off. Plants struck early in the season will now take the place of the old stock, and should be assisted with liquid manure; a few pots of cuttings may be propagated now, and when rooted, shifted into 60's and kept growing through the winter, will make useful plants early next season. Begonias as they get past their best must have less water, and placed under the stages out of the way of drip. The stock of bulbs should have been got in for the ensuing season, so as to get the choice of well-ripened bulbs. A few of the early kinds should be potted; we prefer the well-known older kinds for general decorative work, and most of them are much cheaper than new varieties where a large quantity of cut bloom is required.

Winter Decorative Plants.—The winter plants, Bouvardias, Richardias, Salvias, Solanums, Chrysanthemums, and other winter-blooming plants, which have been growing in the open grounds, will now require attention, but before lifting any of them, a copious watering a day or two previously should be given them. Bouvardias will now be fast coming into bloom, these plants will require a few small stakes and ties to keep them in place, and weak liquid manure afforded them twice a week. Older plants that are planted out will not require feeding, they often make gross wood; these plants should now be cut round with a spade before lifting, this will check them a little before potting them up shortly; when potted place them under a north wall for a few days, and syringe them often. Bouvardias may be lifted and planted out in a heated pit, and a warmth of 60° maintained. Plants so treated will produce more quantity of bloom than pot-plants. Solanums should be placed in their flowering-pots, which should be rather small. Richardias, Salvias, and Chrysanthemums, should also be taken up with a nice ball of roots and soil, potted and placed outside at the side of a wall, if room cannot be found for them in cold pits, and be syringed for a few days. We find it best to lift these plants at this date, as, by doing so, new roots are put forth before the blooms open, and the falling off of leaves and blossoms is prevented. The plants can be removed at the last moment if frost is imminent, or failing that, covered with some mats, &c.

Greenhouse Plants.—Most of the tender greenhouse plants should now be in their winter quarters, after having given the house a thorough cleansing. As much air as possible should be given, leaving the ventilators open day and night; and, owing to the lesser degree of evaporation from the leaves, less water should be afforded to most plants brought indoors—especially is this of importance with the Camellia, Azalea, Orange, protaceous plants, and Ficus. [The loss of flower-buds and leaves in autumn often results from a too moist state of the soil in the pots and tubs. Ed.] Every plant should be examined to ascertain if the drainage is in perfect order, and that no insects are upon them, bearing in mind that thrips and red-spider soon spread after the plants are housed.

Indian Azaleas and Camellias are not so tender as the Cape plants, so that no harm will be done if these are left out-of-doors a little longer than tenderer plants. All the Epacris, Ericas, and all New Holland plants should be taken indoors first, and placed in light, airy positions, keeping a sharp watch afterwards for mildew, and dusting them with flowers-of-sulphur whenever there is the least sign of it on any of them.

Cyclamens should be growing fast, but they will not require so much moisture as formerly. A few of the earliest may be removed to the greenhouse, but the bulk of the plants will be best in pits or frames, if these are heated, and the plants are close to the glass. Give a small amount of air during the night, and a little heat in the pipes.

Double Chinese Primulas require a somewhat like treatment, but as they soon suffer if kept too damp, they must be carefully watered, not wetting the leaves.

The early batch of single flowered Primulas should be pushing up their trusses of flower, and may be assisted with fertilisers.

Succession plants of Primulas should get a shift into larger pots, as may also Cinerarias. Greenfly must be kept under by frequent fumigations, or dipping the plants into weak solutions of tobacco-water. The plants grow well in a temperature of 40° at night, and 55° by day, with abundance of water when growing with vigour. The syringe may be used on the latter in fine weather.

The stock of Tea-scented Roses in pots may be placed in cold frames, and kept free from mildew. It will not be advisable to give the plants any heat for some time yet. *Geo. Wythes, Syon House, Brentford.*

The Flower Garden.

Hardy Perennial Flowers.—Another season's experience has confirmed my opinion, that, for the summer season, a mixture of ordinary bedding plants, with flowering hardy perennials is more pleasing and more satisfactory than bedding plants alone, I mean for non-geometrical or informal parterres; but it is difficult, if not, almost impossible, to plant a formal garden with plants that flower at irregular seasons, and develop a great variety of form in growth and height so as to look well. Gardens of a strictly formal design can only be appropriately planted by adhering to the geometrical method, and there is no way of planting such gardens other than by employing the ordinary summer bedding plants, which are easily made to fill any desired pattern. We have both types of garden here, and can therefore compare notes as to the merits of each. The hardy flowers, ever since the early spring up to the present time, have been a constant pleasure, because no sooner had one species gone past its best than another took its place, and now the garden is as gay as ever with Japanese Anemones, Rudbeckias, Dahlias, Michaelmas Daisies, perennial Sunflowers, Gladiolus, Lilies, Phloxes, Sweet Peas, Mignonette, early-flowerlng Chrysanthemums, evening Primroses, Galegas, Pelargoniums, Violas, and many others. The formally bedded-out garden is, of course, still gay, but the interest one feels in it has waned, not only because of the sameness, but because any morning now we may wake up and find that the frost has spoilt it.

Winter Planting of Flower-beds.—In the foregoing note I ought to have said that in the planting of a geometrical parterre in a formal manner it does not follow that all the plants should be of a tender nature, because there are numbers of hardy plants (not flowering) which can be employed with the summer bedders; indeed, I use a number of them, and because the flower-beds have to be as well furnished in winter as in summer, and with a view to save labour, many hardy plants are made use of; thus only the tender plants have to be cleared out, the others remaining. These, for the most part, are such groundwork plants, as Sedums, Herniaria, variegated Thyme, Cerastium, Gold Feather, &c., and the tender plants are replaced mostly with small shrubs used as "dot" plants, the ground beneath them being planted in some instances with bulbs, and in others with variegated Box, Euonymus, Periwinkles, variegated Ivy, small Rhododendrons, Laurestinus, Heaths, Antennaria, &c. The above may prove suggestive to those who hitherto have been content to have their flower beds bare of plants in the winter. I do not like shams, but rather than have flower beds bare in winter, I would fill them with branches of evergreen shrubs.

General Work.—Maintain neatness by keeping bad flowers and leaves regularly picked off. Complete the work of propagation; get all recently-struck cuttings into frames, or under the shelter of walls, where coverings of some sort can be readily applied. *W. Wildsmith, Heckfield Place, Hants.*

The Hardy Fruit Garden.

Apricots on the Walls.—These trees, assuming that the foliage has been kept clean, and therefore healthy, by occasionally syringing them with water and by root-waterings, may now, if it be found necessary, receive a top-dressing of fibry loam, bone-meal, and old, pounded mortar. Generally this aid to rooting on the surface is put off until the pruning and nailing of the trees are finished, and answers well enough then if a slight dressing only is required, but when it is intended to get down to the principal roots, and bring them to the top, and also to encourage others to come to the surface, the best time to perform the work is the present. In doing it first open out a trench, if the tree be large, at 6 feet from the stem, and remove the soil bit by bit by loosening it with a small steel fork, and then scraping it off with the hand, so as to avoid as much as possible any injury to the roots; and, having raised some of the roots, give the soil a thorough watering if it be in need of it; after pruning bruised or broken roots, cover with new soil, trample it moderately firm, and cover all with a slight mulch of manure, and should the weather continue dry, daily overhead syringings will be beneficial.

Strawberry plants put out some time ago will require to be watered, the soil having got rather dry, and this work should be thorough. Cut off all runners on young plants as fast as they appear, and ply the hoe, thereby encouraging free growth, which is one of the chief points in successful Strawberry growing. *H. Markham, Mereworth Castle.*

The Kitchen Garden.

Winter Spinach.—Plants from seed sown last month will now be ready to be thinned, at from 8 to 9 inches apart, and after the plants are thinned, and well hoed, to destroy weeds, a mulching, 2 inches thick, of short grass or spent manure, spread at intervals between the lines and round about the plants, will ensure clean leaves after rain.

Lettuce.—The stock of these plants intended for winter supply should have a stir up with a Dutch hoe, and afterwards have a mulching placed about the plants. The protectors should also be got in readiness in case of frost. Those in use here, are about 8 feet long, 3 feet 6 inches wide, and 1 foot high at the sides, span-roofed, with glass on both sides. These contrivances are invaluable at all times, and useful for many purposes, but I purpose using *cloches* or bell glass more extensively, as they can be rendered perfectly air-tight, a matter of great importance, confined air being the best possible safeguard against frost. Now is a good time to start with the bell glasses (*cloches*), and a great point is to select a sheltered border with a slope to the south or south-west, so as to secure as much sunlight as possible in winter. The object in view is to keep the plants in active growth from the time the seed is sown till the Lettuces are fit to cut. From now till the middle of November, a small sowing should be made every ten or fourteen days under the bell-glasses. In doing this, put the seeds in the middle, about 5 inches within the ring made by the *cloche*, and outside this sow a line of Petite Noire, a small Cabbage variety, which comes in before the Cos Lettuces, and is cut in time to allow of the other having the whole space under the cloche. The soil must be well enriched with spent Mushroom-bed manure.

Transplant into favourable situations any August-sown Lettuce and Endive-plants. Any seedlings which are intended to winter in the seed beds should bethinned out to such a distance. Tie up Cos Lettuce, performing this when the plants are dry. Do not tie up more at a time than will meet the requirements of the family. Continue to cover Endive every week—slates or boards laid on the plants are the least trouble, but the same end can be secured by tying. As with Lettuce, let the plants be dry before covering or tying them. *W. M. Baillie, Luton Hoo.*

Crinum cruentum.—I refer to this plant because there appear to be people who mistake the Belladonna Lily for this plant. Last year a Dutch nurseryman offered C. cruentum at 10*s.* per bulb. One of the bulbs was obtained for Kew, and this has lately flowered. It is simply the Belladonna Lily. Mistakes like these are not uncommon. Meanwhile, one might ask if anyone possesses the true C. cruentum, as figured in the *Botanical Register*, t. 171, and cultivated in the late Dean Herbert's time? It has large, short-necked bulbs, glossy dark green sub-erect leaves, 3—4 feet long by 3 inches broad, and a peduncle 2 feet long, bearing an umbel of about 6 flowers, with tubes 6 inches long, linear reflect segments, the colour being bright pink. It is a native of Mexico. The following species of Crinum are in flower at Kew:—C. podophyllum, C. angustum, C. bracteatum, C. Mooreanum, C. capense, and C. Powellii. *W. W.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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NOTICE to Correspondents, Advertisers, Subscribers and others. The Registered Address for Foreign and Inland Telegrams is "GARDCHRON, LONDON."

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, SEPT. 24 — Royal Horticultural Society: Vegetable Conference at Chiswick (and two following days). Fruit and Floral Committees meet at Chiswick.

SALES.

MONDAY, SEPT. 23 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

WEDNESDAY, SEPT. 25 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs and Lilium auratum, at Protheroe & Morris' Rooms.

THURSDAY, SEPT. 26 — Established Orchids, Dutch Bulbs, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, SEPT. 27 — First Portion of Stock of Established Orchids, by order of Mr. J. E. Bonny, at Protheroe & Morris' Rooms.

SATURDAY, SEPT. 28 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—55°.9.

The Mountains of New Guinea.

NATURALISTS, and among them horticulturists, have been anxiously awaiting the results of explorations in the interior of New Guinea. The vegetation of the coast regions and of the banks of the rivers, so far as travellers have yet penetrated, presents comparatively few novelties, being what might be expected in an island placed in that situation; but it might fairly be anticipated that the mountain vegetation would reveal transitions between the floras of Java, Borneo, and even of the subtropical Himalaya and that of Australia. Possibly, even, some connection may yet be found between the vegetable population of the high lands of tropical Africa, of Madagascar, and of South America, especially the Chilian and Patagonian regions and that of New Guinea. The horticulturist may fairly anticipate new types of Orchids, Ferns, Nepenthes, Rhododendrons, Cycads, Conifers, Melastomads, and other interesting families. The obstacles in the way of reaching the mountains are very considerable, the difficulties of collecting hardly less so, hence the following letter from Baron Sir FERDINAND VON MUELLER will be read with proportionate interest, and all naturalists will agree in the hope that the chief authority on the Australian flora may be enabled to continue his already extensive researches into the botany of Papua, and weld them into a connected whole with those of Australia, and thus throw light on many of the most important problems of botanical geography. The occurrence of British genera and species on the mountains of New Guinea, though it will not appear strange to the botanist, will doubtless occasion surprise to many. We append the Baron's interesting letter:—

"The ascent of the Owen Stanley Ranges in New Guinea to their very summit, recently accomplished by Sir WILLIAM MACGREGOR, demonstrates the occurrence of an almost alpine vegetation between elevations of 11,000 and 13,000 feet; and, more than this, it renders known for the first time an extraordinary and significant admixture of forms, some characteristic of the northern, others of the southern hemisphere. On the crest of the range above the limits of forests occur, as we now learn, though so near to the equator, such mainly extratropical genera as Ranunculus, Hypericum, Arenaria, Potentilla, Rubus, Epilobium, Aster, Erigeron, Helichrysum, Senecio, Gentiana, Veronica, Euphrasia, Scirpus, Schœnus, Carex, Agrostis, Aira, Poa, and Festuca. Many of these approach in their affinity to forms familiar to us in Europe, a few even being identical with British species, and which reach in New Guinea seemingly their most southern geographical limits. But on the other hand, many of these Papuan highland plants are of far southern type, such as Drimys, Drapetes, Donatia, Styphelia, Phyllocladus, Libertia, Carpha, Dawsonia; indeed, some of the species are absolutely the same or congeneric with those of the Australian and New Zealand Alps. In the collection, which necessarily, during this first attempt at the exploration of the Papuan highlands exploration, could not be very rich in specific forms, Ericeæ (of the genera Rhododendrons, Agapetes, and Vaccinium), are rather prominent. Another remarkable fact now established is the identity of several plants of the Owen Stanley Ranges with such as were described by Sir JOSEPH HOOKER from Kinu-Balu, in Northern Borneo, where they were discovered by Sir HUGH LOW at elevations of about 8000 feet—for instance, Drapetes ericoides and Drimys piperita. The four Conifers, gathered during Sir WILL. MACGREGOR's expedition, consist of Araucaria Cunninghami, a Podocarpus, a Phyllocladus, and what may possibly be a Libocedrus; of the latter, however, no fruit was obtained, so far as the material before us allows to judge, the individuality in the alpine vegetation of New Guinea seems far less extensive than might have been supposed. The writer of these lines pointed out some years ago, in opposition to the views of a distinguished naturalist, that, although the main characteristics of the Papuan flora in the lowlands and midlands might, notwithstanding the occurrence of Eucalypts and phyllodineous Acacias be regarded as Malayan, yet it would not be accurate to ascribe the same general characteritics to the highland vegetation as well, when Araucaria had already come within reach. The fact that the Papuan alpine flora contained so large a proportion of Australian elements, must lead to many far-reaching scientific generalisations in other departments of science besides botany."

A correspondent of the *Daily News* furnishes further particulars:—

"You will no doubt have heard by wire that at last a man has stood upon the highest point of Mount Owen Stanley, that man being the new governor, Sir W. MACGREGOR. He left here (Port Moresby) with a fairly large party on April 20, and yesterday (June 25) he returned. He, three natives, and two South Sea men got to the top—over 13,000 feet—and spent three days up there, with a clear blue sky above him, a climate the best he has known, and with Daisies, Buttercups, and white Heather around him to remind him of his native land. He also heard the lark singing at the top, and saw icicles 7 inches long. The natives felt the cold terribly, but the Governor never had a moment's sickness, though, when he came down, he had lost considerably in weight—he was a very heavy man when he started. The natives of the surrounding region were all very friendly, but he could not get one of them to go above 9000 feet, up to which line they sometimes hunt."

PALMS IN MADEIRA.—The two Palms figured in our Supplement are growing in the public gardens at Funchal, and for the photograph whence it was taken we are indebted to the kindness of Mr. HARCOURT POWELL. The contrast between the broad palmate leaves of the Latania (or Sabal?) and the feather-cut leaves of the Phœnix is remarkable. For giving "character" and diversity to the landscape such plants are invaluable.

FRUIT-GROWING IN ENGLAND.—During the past few months the Fruiterers' Company has received several suggestions as to the encouragement of fruit culture in England, and it appears to be very generally thought by those persons best qualified to form an opinion that, if necessary care and judgment be exercised, the British growers of choice grades of hardy fruits can profitably compete with foreign growers. The Company having received most valuable suggestions from the LORD MAYOR, Mr. HENRY CHAPLIN, M.P., the President of the Board of Agriculture, and many other gentlemen, has passed the following resolution:—Resolved, that the Fruiterers' Company feel strongly the great importance of the question of fruit farming in England, and view with much concern the want of attention paid to the production of Apples, Pears, Plums, and other hardy fruits of fine quality, and deplore the frequently neglected state of many of the existing orchards. The Company therefore desire to encourage the development of the profitable culture of fruits of high quality in England for the advantage of the grower and consumer, and for the better utilisation of agricultural land. With this object, the Company propose to establish a fund of not less than £5000 (towards which they are willing to contribute £500), from the income whereof they intend annually to offer prizes for the best managed fruit farms, plantations, or orchards. The LORD MAYOR has undertaken to receive at the Mansion House subscriptions to the fund, and they can also be sent to the Clerk of the Company, Mr. O. C. T. EAGLETON, 40, Chancery Lane, London.

EARLY FROSTS.—The weather, after being hitherto sunny, dry, and warm generally in these islands and on the Continent, has become winterly. In Germany, Austria, and in some places in Galicia and Silesia snow fell on Sunday and Monday, Sept. 16 and 17. In the neighbourhood of London, the glass fell on Sunday night and again on Monday to freezing point and below it; and at Chelmsford, we are informed, 7° of frost were registered. At Sunningdale 7° were recorded, at Berkhampstead 6° on the grass, 1° in the screen. Tender plants have suffered in some places, but, generally speaking, not much damage has been done. From that busy Belgian horticultural manufactory, Ghent, the story is sadly different. A correspondent, writing on Tuesday from that town, says:—"On my arrival in Ghent yesterday, I was very much struck with the news that awaited me, and as it may be of interest to your readers, I send you a few particulars of what has occurred. About 2 A.M. on Monday, 16th inst., frost came on so suddenly and was so severe that everyone was taken unawares, and by daylight it was apparent that a serious disaster had befallen the Indian Azaleas, the plants in most places presenting the appearance of having been singed, and for some miles around Ghent the plants have, with scarcely an exception, suffered alike. The disappointment to buyers will be great, and the loss to the growers will prove to be one of the most serious misfortunes which has occurred within the recollection of the





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PALMS IN THE PUBLIC GARDENS, MADEIRA.

oldest horticulturist in Ghent. Packing operations for export were to commence on the very day of the disaster."

Flowers in Season. — From the College Botanic Garden, Dublin, Mr. Burbidge kindly sends :—

Choisya ternata, whose bright green ternate leaves and orange-like flowers need no eulogy. We are afraid from personal experience that it can only be considered half-hardy even in the south.

Calycanthus occidentalis.—A shrub like the old Carolina Allspice, but with bolder foliage and fragrant flowers of a pinkish-red hue. The cells of the pith are so large that their outline can readily be made out with the naked eye.

Mutisia decurrens.—A climbing composite with simple leaves ending in a tendril, and oblong flower heads, combine great beauty with much interest. Its long strap-shaped ray florets are of a rich orange colour. The disc florets are more or less two-lipped, the lips rolled round from the point towards the base.

Silphium perfoliatum is one of the finest of the autumn-flowering composites, for those who can afford space to such a giant. Notice that the individual florets have no hairy pappus, such as characterises most composites, and that the scales of the receptacle are larger and more leafy than usual, even in the very centre of the flower-head.

Anemone vitifolia is interesting as being the Nepalese representative of the beautiful A. japonica; but those who can get the white derivative, Honorine Jobert, will not care for the Nepalese form.

Eucalyptus viminalis.—From Mr. Walker of Colwyn Bay, we have received a specimen of this elegant tree in full flower. The branches are very slender and wiry, the leaves narrow, lanceolate; and the small, whitish, Myrtle-like flower, in groups of three, scattered in a loose panicle. The species is known as the Manna Eucalypt in South-Eastern Australia and Tasmania. In some places it attains a height of 320 feet. When punctured by some of the Cicadæ, it yields a peculiar kind of Manna, as originally noticed by our correspondent, Dr. George Bennett, of Sydney. A figure is given in Baron V. Mueller's *Eucalyptographia*. The E. persicifolia of Loddiges' *Cabinet*, t. 501, is now referred to the same species.

A Quick Fruit Tree Budder.—The following note taken from the *Stamford Mercury* of a recent date, gives an unexampled number of buds put in during one day,' " Mr. A. Hagger, foreman at Messrs. W. and J. Brown's nurseries at Stamford, budded 1850 Apple stocks, three men tying for him. We believe this 'beats the record.' " One thousand buds put in is considered to be a fair day's work for a man.

A Bean Show.—Mr. Henry Deverill, seedsman, of Banbury, who put into commerce Neal's Ne-plus-ultra Bean, had a novel exhibition fronting his shop in the Market Place at Banbury on the 5th inst. Having offered special prizes for the best twenty pods of Neal's Ne-plus-ultra Runner Bean, some seventy entries were made for competition, and a remarkably fine lot of pods were staged. The awards were made in the following order:—Mr. J. Hughes, The Gardens, Eyden Hall, Byfield, Northamptonshire; Mr. Coupland, gardener to Captain Benyon, Nirthrop House, Banbury; Mr. Wingrove, gardener to G. H. Nelson, Esq., J.P., Rousham Park, Banbury; Mr. Nicholls, gardener to C. Gillett, Esq., Wood Green, Banbury. Six other dishes, also containing very fine pods, were shown. In addition Mr. Deverill made an exhibition of his new Onions, staging twelve bulbs of Rousham Park, weighing 20 lb.; twelve of Ailsa Craig, weighing 30 lb.; twelve of Cocoa-nut, weighing 20 lb.; twelve of Wroxton, weighing 15 lb.; and twelve of Anglo-Spanish, weighing 18 lb. The finest specimen of the Anglo-Spanish weighed 2 lb. 1½ oz., and measured 18½ inches in girth; the finest of Rousham Park weighed 1 lb. 13½ oz., and measured 18 inches in girth. In addition there was a collection of between twenty and thirty varieties of ordinary stocks of Onions.

Stock-Taking : August.—To others must be left the tale of the influence of the great strike on the export and import trade of the country; but possibly that may not be quite ready to tell until the close of the year. But we may be permitted to note that the exports of foreign and colonial products from British ports posted up less by £1,293,810 than the total for the month of August, 1888—the exports of British and Irish manufactures having increased only by £138,248. In the imports the increase for the eight months of the year is recorded at £26,161,951, compared with the same period last year. The following figures are taken from the "Summary of Imports from Foreign Countries and British Possessions for the Month of August":—

	1888.	1889.	Difference.
	£.	£.	£.
Total value of imports	30,006,140	32,902,028	+2,895,888
§II.—(A.) Articles of food and drink — duty free	10,567,103	11,520,771	+953,668
(B.) — do., dutiable	2,291,199	1,797,824	—493,375
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	3,051,507	3,313,450	+261,943
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,059,247	4,985,328	+926,081
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	960,839	1,068,554	+107,715

In the following customary excerpts from the general return, excepting the increase under "Apples, raw," the other items are very noteworthy, and may in part be explained by the recent disarrangement in trade. The returns for September may assist in the explanation :—

Excerpts from General Returns of Imports.

	1888.	1889.	Difference
§ II. Fruit :—			
Apples, raw ... ... bush.	172,713	202,972	+30,259
Unenumerated, raw ... ,,	752,789	656,592	—96,197
Onions ... ... ,,	370,919	347,222	—23,697
Potatos ... ... cwt.	156,609	39,701	—116,908
Vegetables, raw, unenumerated ... ... Value	£57,019	£69,578	+£12,559

One of the disastrous effects of the strike of workmen at the docks in London has been the loss to Mr. Wood, jam-maker, of 70 tons of Plums for lack of sugar.

"Orchids, their Culture and Management."—The fourth part of Mr. Watson's useful publication has just been published by Upcott Gill, 170, Strand. The genera treated in the present part are Cymbidium and Cypripedium.

Hamburgh.—Dr. Sadebeck has been appointed to succeed the late Professor Reichenbach in the direction of the Botanic Garden.

Breslau.—Dr. Prantl succeeds Dr. Engler as Professor of Botany and Director of the Botanic Garden. Dr. Engler, as we have previously noted, has been appointed to Berlin.

The Bee Mango.—A letter read before the Agri-Horticultural Society of Madras, at their meeting on July 6, and published in their proceedings, would form a good foundation whereon to build a sensational article in a daily contemporary. The letter accompanied some specimens of Mangos, which were called the Bee Mango, and ran as follows:—"The peculiarity of the fruit is that the stone contains a bee, existing in the kernel. On carefully breaking the stone this will be perceived. There is only one tree in the Kadur district, and that at a village, Lingad-Nulli, belonging to a Brahmin, who daily worships it, and he informs me that he has several times tried to grow the tree, but without success, and moreover he thinks that should the seed take, the fruit of it would not contain the bee." This story sounds very like an unfinished fable, but the sequel follows, when it states that specimens of the insect were forwarded by the Society to an authority of the Indian Museum, who identified them as Cryptorhynchus mangifera (the Mango weevil) whose normal habitation is in the pulp of the fruit, and not within the stone. The fruits sent to the Society were carefully examined, and the pulp was, in every case, free from insects which were only discovered when the stones, from which the pulp had been moved, were broken open.

Devizes Chrysanthemum Exhibition. — This is fixed for November 12, and will take place as usual in the Corn Exchange in conjunction with the annual bazaar and sale in aid of the Devizes Benevolent Society.

American Chrysanthemum Society.—A new Society has been organised with Mr. Thorpe, of Pearl River, New York, as President; and G. Lonsdale, of Philadelphia, as Secretary.

Exhibiting by Unfair Means has apparently not yet died out. We regret to have to record this fact at the late Brighton show, where products were in several instances of superior cultivation, but marred in three cases by additions, one being of two Ixoras placed together in one pot, and two of blooms added to plants of Allamandas, the calyces of the flowers in many cases plainly showing they had been cut from a plant of the same variety, but not from the plants staged.

Tomatos at Chiswick.—Hitherto we have referred only to those grown under glass. There is, however, an extensive collection grown outdoors in front of the Peach wall, which promises remarkably good results. Chiswick Hybrid, Haw Green, Favourite, Perfection, and other well-known sterling sorts, are fruiting well.

Ghent Chambre Syndicale.—At a meeting held on the 9th inst., the following awards were made :—

First-class Certificates.—To Cypripedium orphanum from Mr. J. Hye Leysen. To Anthurium Madame Jules De Cock and A. Souvenir de Louis Desmet, from M. Jules De Cock. To Kentia Dumoniana, from Mr. L. Spae-Vandermeulen.

Peat for Paper.—Mr. J. A. Loudon read a paper, at Newcastle, on the utilisation of peat for manufacturing brown paper, wrappers, and millboards, instead of the ropes, rags, and grass hitherto employed. This may be of importance in some districts of Ireland.

Lilies at Mr. Wm. Bull's.—A beautiful display of these gorgeous flowers is now arranged in the show-house at Mr. Wm. Bull's, King's Road, Chelsea, the extent of which may be imagined when it is stated that the house, which is 100 feet in length, is entirely filled with Lilies in full bloom. The most striking are the newer varieties of L. auratum, of which the one known as L. a. rubro-vittatum is the richest coloured, the broad crimson ray and tinting on each petal constituting it a most gorgeous flower. The pure white, unspotted L. a. virginale, the large-flowered L. a. platyphylla, the clear yellow-tinged L. a. ochroleucum, too, are noble flowers, far in advance of the ordinary L. auratum. Also contributing largely to the show are the pretty and fragrant varieties of L. speciosum, of which L. s. Melpomene is the richest coloured; and the two pure white, L. s. album novum and L. s. Kraetzeri, very lovely things. The still rare L. neilgherrense and

other species are also included in the show, and various Pancratiums and cool Orchids are also used.

THE JARRAH.—A part of the Strand near Exeter Hall has been paved with blocks of this timber, derived from Eucalyptus marginata, a native of South-west Australia. The timber is of unrivalled excellence for durability, and is worked with comparative ease. E. rostrata, the Red Gum, and E. leucoxylon, the iron-bark wood, are, according to Baron VON MUELLER, the historian of the genus, almost if not quite as durable, and even stronger. The durability, and immunity from insects, is due to the presence of kino. The services of the eminent botanist, Baron VON MUELLER, in making known the species of Eucalyptus, in pointing out their useful properties, and in diffusing them far and wide, can hardly be over-estimated.

KNIPHOFIA NATALENSIS. — Mr. GUMBLETON reports that this is now blooming with him for the first time, and is most distinct in its loose open spike. The colour of the flowers is a dull red. The same gentleman has lately flowered a hybrid, raised by Herr MAX LEICHTLIN, between K. Leichtlinii and K. comosa. The flowers are cinnabar-red, the anthers carmine.

DAFFODILS.—Mr. J. DUNCAN PEARSON has been endeavouring to infuse a love of Daffodils into the minds of the members of the Nottinghamshire Horticultural and Botanical Association. In this he should succeed, as the report of his lecture, published in pamphlet form, shows that it is well calculated to do so. We fear some of the Nottingham folk love Daffodils—other people's Daffodils—too well, for, says Mr. PEARSON, "There are objections to be raised against keeping plants to name, for instance, a gentleman who has a garden just outside Nottingham says he dares not put a name to his bulbs, for fear all the best should be stolen." Do the Nottingham lambs browse on Daffodils?

PARIS EXHIBITION. — We understand that Messrs. KELWAY & SON, of Langport, Somersetshire, have been awarded the premier prize for some 150 spikes of Gladioli at the last flower show of the Paris Exhibition, held from August 16 to 21. This firm of nurserymen was again awarded a 1st prize and honourable mention for their display of cut flowers in the Great Exhibition, in the interval, September 6 to 11. The exhibit consisted of Gladioli, Pyrethrums, Globe-quilled Asters, Dahlias, and Gaillardias.

NATIONAL VEGETABLE CONFERENCE AND EXHIBITION, CHISWICK, SEPT. 24, 25, AND 26.—This promises to be a specially interesting meeting, entries of exhibits having been received from all parts of the country. Scotland and Wales will be well represented. We also learn that M. VILMORIN, of Paris, will be present with a large number of exhibits, and consignments from America are also expected. We may remind our readers that the entries close on the 21st, and that those who have not given notice should do so at once.

PROPERTY IN TREES.—Mr. HYDE CLARKE read a paper at the British Association on "The Right of Property in Trees on another's Land, as an origin of Rights of Property." The author stated that his attention was first called to the subject, as a land-judge or commissioner in Asia Minor, in 1862, in granting compensation for Olive trees belonging to one or more individuals on the fields of others, and for honey trees or hoards of wild honey in State or Communal forests. In 1888, Rev. Dr. CODRINGTON read a paper at the British Association, and afterwards at the Anthropological Institute, which gave information as to the existence of a like system in Melanesia. The author thereupon proceeded to make further inquiries, and found evidence as to its existence in Borneo, with regard to Tapaag, or honey trees, and in Chota Nagpore (and probably elsewhere in India) as to the Mhowa, a tree furnishing food, spirit, oil, &c. In China a lessee has the right to Bamboo, &c., grown by him. The practice in the Turkish Empire he found extended into the European provinces, as applied to Plum trees in Bosnia. In Ireland it was recognised in the Brehon Laws, as an individual property separate from tribal property. Generally speaking, the right does not exist in Europe, as all rights are centred in the owner of the soil. It is probable that the personal right of the first discoverer of honey and similar trees, a right defined by Sir H. S. Maine as dependent on discovery, is to be regarded as the origin of an individual right of property rather than any right in land, which is of no value in a primitive community. Even cultivable land belonged to the community, and was distributed by lot yearly, of which there are modern examples.

NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.—The monthly meeting of the Notts Horticultural and Botanical Society was held yesterday evening at the Arboretum Rooms, and was well attended. There was a good show of plants, cut flowers, fruits, and Ferns, a specialty being the exhibition of Gladiolus blooms, of which several new specimens were shown. Plants, flowers, and vegetables were sent for exhibition by Mr. J. Robinson (gardener, J. Plumb), Mr. W. H. Farmer (gardener, W. Attenborough), Mr. C. J. Cox (gardener, J. Meadows), Mr. J. Fearfield (gardener, J. Underwood), Mr. T. Hallam (gardener, W. Newton), Messrs. J. R. Pearson & Sons, Chilwell; Mr. E. Massey (gardener, W. Bateman), Mr. T. B. Hallam, Corporation Road; Messrs. James Booth, J. Baker (Basford), and J. W. Turner. The exhibits were of a choice description. Mr. A. H. Pearson, of Chilwell, read a paper on "The Bulb Farms of Holland."

GUELDRES ROSES. — In his paper "On the Leaves of the Gueldres Rose," read at the British Association Meeting, Sir JOHN LUBBOCK said:—"We have in this country two species of Gueldres Rose. They are nearly allied, but the leaves are very dissimilar; those of the Viburnum lantana being oval or ovate, and when young very hairy; those of V. opulus three-lobed, smooth, and provided with stipules. These differences are very interesting, but no one had yet attempted to explain them. Sir JOHN pointed out that the young leaves of V. lantana are sufficiently protected by their hairy covering, and are consequently left bare. This is not the case with V. opulus, in which the leaves are glabrous. The outer leaves, however, become tough and leathery, and form a covering within which the other, or true leaves are developed. To economise space these leaves are folded more or less like a fan, in the same manner as those of Maples, Sycamores, Planes, &c., and this gives them their lobed form. As regards the stipules, he observed that the genus contains some fifty species, of which about forty have oval leaves without stipules, while the remainder have lobed leaves, with stipules. The presence of the stipules seem, therefore, to go with that of the lobes. He believes that they assume their peculiar thread-like form so as to fill up a space which would otherwise be left empty in the bud. Maples have no stipules, but in them the younger leaves in the bud just fill up the interspaces left between the older ones. In the lobed-leaved Gueldres Rose this is not the case, but a space remains, which is just occupied by the stipules." The paper was illustrated by diagrams.

THE OAK LEAF.—At the British Association Meeting Sir JOHN LUBBOCK contributed a paper on "The Shape of the Oak Leaf:" he said:—We are so accustomed to the form of the Oak leaf that it does not strike us as anything peculiar, and comparatively few, perhaps, have ever asked themselves why it should be as it is. And yet it is peculiar—unlike that of any of our forest trees, and those of the evergreen Oaks so abundant in hotter countries. The three points, then, which give the Oak leaf its peculiar form are:—1, The deep, rounded sinuses; 2, the want of symmetry of the two sides; 3, the oblong or oblanceolate outline. I do not know of any attempt to explain this peculiar form. That which I would suggest is as follows. These sinuses are due, as I believe, to the curvature of the leaf owing to the shortness of the bud in comparison with the length of the leaf. The young leaf is not only curved, it is wrapped round the interior leaves. The result of this is that one side of the leaf is folded within the other; the one, therefore, being on the outer side has more space than the other. The two sides of the leaf are, in fact, differently situated, and this, I believe, accounts for the second point, namely, the want of symmetry. The oblong form is an advantage from the way the leaves diverge from the stalk. In this manner the interesting peculiarities of the Oak leaf may be accounted for. The paper was illustrated by diagrams, specimens, and models, and the probability of the cause suggested being the true one was enforced by the application of a similar argument, which clearly explains the peculiar form assumed by the very interesting and curious leaves of the Tulip tree.

BIRDS OF EAST KENT. — The East Kent Natural History Society has lately published a list of birds found in the county, with some interesting notes by Mr. DOWKER. Mr. DOWKER properly lays stress on the utility of hawks and owls, and local societies could not undertake a more useful work than the education of gamekeepers and of their employers.

NURSERY NOTES.

MESSRS. H. LANE & SON.

THE large nursery at Great Berkhamsted, Hertfordshire, has recently lost in the late proprietor one of the best known nurserymen in the home counties, and one who had always striven, and with great success, to keep his nursery in the front rank for coniferous plants, hardy fruits of all kinds, and American plants. The vineries at the Berkhamsted home nursery were celebrated for a long series of years for their excellent crops of Muscat of Alexandria, Gros Colmar, Black Alicante, and Black Hamburgh, and some other varieties. These are now failing, and will shortly make place for a better paying class of plants. Vines in pots have always been grown most successfully. In the course of a recent visit made to the nurseries, excellent stocks of fruit trees, especially of Apples, Plums, and Damsons, were noted. Amongst the former Baumann's Red Reinette, Ecklinville, Borowitsky, Stirling Castle, Worcester Pearmain, Warner's King, Prince Albert, Lord Grosvenor; and of Plums the Victoria occupied the most ground, and young stock of the latter was cropping heavily all over the quarters. The season has been unprecedentedly favourable for this useful variety, and almost equally so for Sultan and Angelina Burdett. Messrs. Lane possess a large orchard of Plums and Apples, and the majority of the trees, except where exposed at corners and sides of the quarters, are fairly well cropped. As usual, their very hardy, prolific, and long-keeping Apple, Prince Albert, was found to be cropping well, and, others in good bearing were Stone's, Golden Spire, Yorkshire Beauty (a large showy fruit), Scarlet Nonpareil, Schoolmaster, Annie Elizabeth, Dutch Codlin, and Five Crown Pippin.

It is a good feature at this nursery that, although most of the trustworthy varieties of the different hardy fruits are cultivated, the greater area is planted with profitable market and orchard varieties. The trained stock is extensive, and very well done.

Rosa polyantha is obtaining great attention at the home nursery, and of this species it was observed that five varieties are grown, viz., Anne de Montravel, Mignonette, The Pet, Pacquerette, and Perle d'Or. The demand is so great at times that difficulty is found in keeping up with it. Maréchal Niel is another Rose largely grown, and the stock of it is equal in quality to anything we have seen elsewhere, as is that of Lapageria rosea.

In the nursery on the Berkhamsted Common the great breadths of hybrid Rhododendrons will, in due season, be magnificent, as, owing to the lack of flower this year, the strength of the plants has been thrown into the formation of flower-buds for next year; and it was observed generally the plants were bristling with forward buds.

Some remarkable seedlings of Taxus, with bright and constant golden variegated foliage, are to be found here, which when duly selected and classified, as they will be, and they have become known to planters generally, will add some remarkable features to gardens and pleasure-grounds. As yet we have noticed their appearance in some few good gardens, and where they have been arranged with judgment, the brightening-up effect of their presence was remarkable. The forms which the plants present in the nursery are very varied. Some have the form of Taxus elegantissima, but better; others are like T. hibernica, but very compact, and not inclined, like that, to run into one or two leaders; some, again, are nicely columnar, being equally thick at top and bottom; and some are broadly and perfectly pyramidal; and all these varied habits are natural to the plants, and not obtained by the use of the knife or shears. We were unable to learn from what source these handsome plants have sprung; this fact the proprietor deeming it impolitic to make known just yet.

Night came on before we could see much more of the extensive collection of Conifers; but some fine specimens were remarked of Cedrus deodara, C. atlantica glauca, a striking form with blue-green needles; Taxus stricta (Blue John), handsome plants about 7 feet in height; lovely specimens of Cupressus Lawsoniana compacta nana, and of C. L. viridis.

VANDA KIMBALLIANA.

In our last issue (p. 294), Mr. Rolfe gives an account of this plant, which was lately shown at the Royal Horticultural Society by Messrs. Low & Co. To make the account complete, we now give a figure of Messrs. Low's plant, and refer to our previous number for full particulars. (See fig. 50, p. 335.)

HOME CORRESPONDENCE.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

POINSETTIAS DYING OFF.—I have found my Poinsettias and Solanums go off at the roots, as described by "E. T." in last week's *Gardeners' Chronicle*. I have thought it might have been caused by too strong manure-water, or by watering with manure-water when the soil was very dry. This year my men were very careful in this matter. The only feeding they have had this year was Clay's Fertiliser sprinkled over the surface of the soil, and that not too strong. The evil did not appear for some time after the second dose was given, and that was fully three weeks after the first. Since the mischief was discovered no manure of any kind has been given, and fresh roots are now being made by both Poinsettias and Solanums. This mischief has occurred to my plants three years in succession. The Solanums and Poinsettias were in cold frames, and were growing well until the sudden check came on them. *W. B. S.*

THE THEORY OF EVOLUTION, as we at present have it, may certainly claim to be a development of the thoughts of the greatest thinkers of the present century, based upon a vast accumulation of facts. But for all that, we find, here and there, traces that the philosophers of former ages also had some inkling that variation has had something to do with the multiplicity of animal and vegetable forms at present existing on the earth. A few days since, I had occasion to refer to Scopoli's *Flora Carniolica*, ed. 2, vol. i., published in 1772, where, at the end of the genus, Rosa, under Rosa repens, Scopoli makes the following pregnant remark:—An unica species, a Deo creata, ex qua reliquæ omnes dein natæ?" which may be translated:—Perhaps one species was created by God, from which all the rest afterwards originated? This idea is not very wide of the present views held by evolutionists. *N. E. Brown, Kew.*

CUT FLOWERS OF VERBENAS AT FLOWER SHOWS.—"R. D.," p. 279, in alluding to the Verbena blooms at shows in the West of England, suggests that flowers of Phlox or Sweet Pea should be shown instead. I know which is the easiest to grow—the Sweet Pea and the Phlox, and, moreover, a heavy shower affects them but little; but get a storm, or indeed any rain upon your Verbena that you wish to exhibit, and if you are not prepared for it with coverings, you will be doomed to disappointment, as the rain knocks them about a great deal, rendering the flowers unfit for showing. But grown in pots or frames where they have protection when it is required, they are desirable flowers in a cut state, and as subjects for conservatory and greenhouse decoration. *Prize Winner, West of England.*

PEAS AFTER DAFFODILS. — A week or two since (now September 10) you were kind enough to give an illustration of Daffodil lifting at Temple Hill grounds, May, 1889. We are now gathering a full crop of Marrow Peas from the same squares. You may remember I sent you some bulbs of Ard Righ at the time fully matured. I now send some green Peas, Eckford Heroine, sown thinly on the well trenched, highly manured soil. I do not think that in the history of either farming or gardening such a thing has been accomplished before as to have green Marrow Peas (crop now 3½ feet in height) fully laden with a matured crop, and this on the actual soil where Daffodil bulbs were ripened. Daffodil lifting in Holland and throughout England begins in July, so that to have Marrowfat Peas since July 10 or 12 would be out of the question in those countries. This shows how well the climate of the South of Ireland favours the early ripening of Narcissus bulbs, and allows the taking of a second crop of something off the ground in the same year. *W. Baylor Hartland, Blackrock, Cork, Sept.* 10. [The pods sent were full of fine seeds, a little too much advanced for table use. Ed.]

DESFONTAINEA SPINOSA SEEDING.—I send you herewith specimens of the ripe seed of the above-named most beautiful half-hardy flowering shrub, which have ripened this year for the first time in the shrubbery of my neighbour, Mr. William Bagwell, of Eastgrove, Queenstown. Although the fruits are of good size, and about that of a wild Cherry, the number of seeds in each is very small, as in the fourteen that I gathered there were only seventeen seeds, which I have sown, and which I hope will germinate. When the late Sir William Hooker described this fine shrub in 1854, in the 80th volume of the *Botanical Magazine* (wherein it is admirably figured on plate 4781), he says he is unable to accurately describe the seed, as he had never seen a ripe or perfect specimen. This beautiful shrub was first introduced to our gardens from Valdivia by Messrs. Veitch, to whom it was sent by their collector, Mr. William Lobb, about the year 1852—3. Sir W. Hooker was of opinion that the plant known as D. Hookeri is synonymous with, and the same thing as D. spinosa, and though they may from a botanical point of view be identical, I still venture to think that they are horticulturally distinct, as in my own shrubbery, D. Hookeri thrives well and blooms abundantly in a shady valley, and has grown to a large sized bush; whereas D. spinosa merely exists, and hardly blooms at all. The flowers of D. Hookeri are also much narrower in the tube. *W. E. Gumbleton.* [The flavour of the pulp surrounding the seed is that of Gentian.—Ed.]

CACTUS DAHLIAS.—We seem to be in a fair way to have definitely settled the true pronunciation of the word Dahlia. Mr. Hibberd admits that it should be pronounced Dah-li-a, but that, on the whole, it is better to adhere to the old style of Dalea, omitting pronunciation of the important *h* altogether, remembering that the plant is named after Dahl, the Swedish botanist. It does seem obvious that the pronunciation should be such as to impress upon the mind of the listener or learner the idea that the name of the Dahlia is purposed to honour that of Dahl, and not someone of the name of Dale. To that end, I hold that the proper pronunciation should be Dahl-ya, making as it were two syllables only, and such as brings into prominence its name parent. But I purposed referring to the Cactus section of Dahlias briefly, because there seems to be in connection with this section a rapid irruption of seedling varieties, few of which seem to to be identical with the more famous early type, Juarezii; and the majority seem to be as fast as possible approaching to the show varieties in rotundity of form, doubleness, and apparent smoothness of outline. With such a tendency—almost an inevitable tendency—how long will the term Cactus be fitly applied to this section? Without doubt all are beautiful, and because of such comparatively quaint or novel form are very interesting; but the broad pointed petals with rugged outlines of Juarezii are rapidly being departed from, and we are producing now a section of flowers, which, reflexed in form, have almost flat or at least but slightly fluted petals, and which seem to be regarded by judges with favour at exhibitions just as they approach rotundity, smoothness, and doubleness. What seems very evident is, that whilst we are gradually getting away from the old so-called Cactus form, we are as gradually creating a double flat petalled section, and very soon there will be a demand for the obliteration of the pointed petal in favour of the rounded bold petal of the singles. That we should in that way secure a very distinct and beautiful strain of double decorative Dahlias there can be no doubt, but they would no longer be of Cactus form. *A. D.*

ALLAMANDA VIOLACEA.—Mention is made in the *Gardeners' Chronicle* of September 14 of the above species of Allamanda flowering at Kew. Many years ago, when I had charge of the stove plants in the nurseries of Messrs. James Veitch & Sons', Chelsea, I flowered this Allamanda several times, and it answered to the description given on p. 304. The plant never found its way into the hands of exhibitors, and was never sought after, nor is it likely to be, for the flowers are of a very undecided, dirty, salmony-purple, and more curious than beautiful, not being nearly so attractive as A. grandiflora, A. Hendersonii, and A. nobilis, which are very distinct and beautiful. A. cathartica, A. nerifolia, and A. Schoti used to be grown very much, but the three former are superior in every respect. *A. Outram.*

A HINT FOR THE ROYAL HORTICULTURAL SOCIETY.—Newcastle has been rejoicing in the visit of the British Association, and in connection with it a flower show has been held, of which doubtless your reporter will have taken note. It was a flower show that, as managed, had little to interest the British Association, and wound up with fireworks. Why horticulture, in its public aspects, should content itself with being a mere machine for producing flower-shows, is a mystery; but why, at such meetings as the British Association, so good an opportunity of presenting horticulture in its scientific aspects, and of showing the naturalists of section D how much they may learn from the horticulturist is lost, is more mysterious still. Some day a horticulturist may preside over the Association, or, at least, over section D, and drive home the fact that horticulture, as an applied science, ranks as high as any other of the mixed sciences. But the British Association has still much to learn in the way of popularising science, the authors of papers read their communications, and generally read them badly, and the speakers are, as a rule, little better. Public speaking does not apparently form part of the education of a scientist. A common fault is hit off in one of the Newcastle papers, which may be noted for the benefit of speakers in the Drill Hall:—"The desk was much too low down, and this was a common defect in all the sections. It may appear unimportant to the management of the British Association, but if a man is to read from a desk at all, it should be so placed as to enable him to see his audience, and to enable his audience to see him. The dry light of science is doubtless a good thing, but a little human interest is also desirable. It was quite a relief to Mr. ——'s audience when he stopped in his monologue to drink some water, and thus gave it an opportunity for applause." Those who have been present at the meetings of the Royal Horticultural Society in the Drill Hall at Westminster or at Chiswick, will appreciate this; indeed, the most ludicrous things of the kind occurred at the Rose Conference at Chiswick, where a reverend gentleman was accommo-

dated with a sloping board of funereal black on which to rest his paper, raised on a tall stand and placed at such an acute angle that the paper was nearly vertical, and at such a height as to be on a level with the speaker's face. The consequence was that the audience, that is to say, they who presumably wished to hear, could neither see nor hear. Decidedly both speaker and audience were bored with that black board. *From the East.*

DOUBLE SUNFLOWER.—There has recently been discussion about different forms of double forms of Helianthus multiflorus. In my garden the double is doubtful what form to assume, so it produces single, and double with narrow ligules in the centre, and double with broad ligules on the same plant. Sometimes the characters are mixed in the same flower. These vagaries are well known in many gardens. I send specimens. *C. Wolley Dod, Edge Hall, Malpas.*

THE APPLE AND PEAR CONFERENCE, 1888.—Some interesting information is given in the *City Press* of September 18, 1889, on the Apple and Pear Conference of 1888. The paper shall speak for itself. It says:—"As a pamphlet, and in a form very suitable for keeping as a book of reference, the Royal Horticultural Society publish through Messrs. Spottiswoode & Co., the papers read last year at the Apple and Pear Conference, which was held at the Crystal Palace. The several papers are by authorities in the fruit world, and consequently it is to be supposed that they contain everything that is known, so far, concerning the best methods to adopt for the purpose of cultivating the Apple and Pear to good advantage. Amongst the contributors may be mentioned Mr. Shirley Hibberd and Mr. James Douglas of the *Gardeners' Magazine*, and Mr. C. B. Saunders of *Amateur Gardening*." From the foregoing we learn that the handsome volume the Royal Horticultural Society has priced at 7*s.* 6*d.*, and that extends to 376 pages, is a "pamphlet." Next we learn that the Conference did not take place at Chiswick, but at the Crystal Palace. The third item is one of awful import, for it assigns the editorship of *Amateur Gardening* to a respectable gentleman, Mr. C. B. Saunders [of Jersey], who has probably never heard of the thing. Will Mr. Saunders endure the association of his name with the "coloured plates" of the paper that is thus, by means of three unpardonable blunders, forced into public notice? *Corpo Campo.*

THE EARLY FROST.—The thermometer here went down to 31° last night, Sept. 16, damaging all tender things. Is such a frost not very unusual thus early? *Thos. Taylor, Beech Holme, Bocking, Braintree, Sept.* 17. [We have heard of 7° being registered. Last year frost came in August. Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

September 17.—At last Tuesday's meeting at Westminster, the Dahlia was well represented, but beyond that, and a nice group of greenhouse Rhododendrons, there was nothing floral that was particularly striking. A collection of Grapes was sent by Mr. Roupell, and as for the Orchid Committee, there were but few items to engage the attention of the members.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. R. Dean, W. Holmes, B. Wynne, L. Castle, T. W. Girdlestone, J. Walker, W. O. Leach, Ch. Noble, Ed. Mawley, W. Goldring, G. Paul, S. Hibberd, J. Douglas, and Dr. Masters.

From the Royal Exotic Nurseries, Chelsea, Messrs. J. Veitch & Son sent an attractive group of plants. Some twenty hybrid Rhododendrons in a variety of delicate colours were very showy; and about thirty flower-heads of Hydrangea paniculata grandiflora shown in one mass were equally conspicuous; these large types of flowers are very useful and decorative in shrubberies. Branches of Berberis vulgaris were laden with coral-red fruit. Ceanothus azureus, both pink and blue forms, a branch of Eucalyptus coccifera, and several shoots of Daphniphyllum glaucescens, with bold, rich glaucous green foliage were also shown. From the same source came Nepenthes Burkei with a number of pitchers, which are about 4 to 6 inches in length, somewhat constricted below the opening, and expanding below the middle; the colour is apple-green with prominent red-brown mottlings about the apex, becoming fainter till at the base there are none—the lid is flat and of a green colour, the annulus being red-brown.

Messrs. Hewitt & Co., Solihull, sent Coleus Cleopatra, with large ovate leaves, about 7 inches by 8. The colouring is green in the centre, with crimson towards the apex, with yellow and brownish spots here and there over the surface. The plant was very stout and sturdy-looking, about 18 inches high. Another strong looking variety also shown was of a pale dead yellow colour.

A very elegant flower was seen in Mr. J. O'Brien's Watsonia iridifolia O'Brieni, which has flowers of the purest white colour, and sweetly scented—a very deserving novelty.

French Marigolds were represented by some excellent blooms from Messrs. Dobbie & Co., of Rothesay, N.B.; the double yellow, crimson, and striped, and the single striped, were all of high merit, and spoke well for the strain, which was commended by the committee. Mr. R. Dean, Ealing, also sent a few Marigolds, large blooms; and a very floriferous plant of a yellow French Marigold, together with white and red single Dianthus, the white Snowflake being of a good pure colour.

Mr. G. Stevens, Putney, sent blooms of Chrysanthemum Sam Henshaw, of the incurved Japanese section, the petals being silvery-crimson on the reverse, with a pale crimson face; this variety was certificated at the last exhibition of the National Chrysanthemum Society. Also Annie Stevens, a quilled Japanese, creamy white, with bright yellow centre, the flowers being of good form and size.

Mr. F. Ross, Pendell Court Gardens, Bletchingley, contributed an object of much interest in the once much grown Aphelandra cristata, in two well-flowered shoots; the rich scarlet colour is very bright, and the flowers numerous. Under the name of Hibiscus pedunculatus, the same exhibitor had a species with delicate rose-coloured flowers about 3 inches across.

It is late to see Roses, but nevertheless, Messrs. W. Paul & Sons, Waltham Cross, London, N., had half-a-dozen boxes of very satisfactory blooms of several favourite H.P. and Teas, and mention may be made of Marie Van Houtte, Fisher Holmes, S. Verdier, Ulrich Brunner fils, Paul Neron, Maréchal Niel, and Ella Gordon.

From Messrs. J. Laing & Sons, Forest Hill, S.E., was sent a group of early flowering Chrysanthemums, in which were such varieties as G. Wermig, Madame Desgrange, S. Attock, &c. This firm also contributed a few blooms of Dahlias, Cactus and pompon, Amphion, Panthea, Juarezii, Professor Baldwin being prominent among the former, with Little Darkie, white with crimson tips; Isabella, scarlet, and German Favourite, carmine, among the pompons.

Messrs. Paul & Son, Cheshunt, contributed a fine bank of Cactus, pompon, show, and single Dahlias elegantly arranged, and containing the leading favourites of each section; the singles were very fine, and the old Paragon still maintained its leading position.

From the Lowfield Nurseries, Crawley, Messrs. J. Cheal & Son, sent a few novelties in single Dahlias. There was a distinct addition to the bordered single forms in Gulielma, white, with Indian yellow side bands to each petal. This flower attracted much notice, and was received with marked favour. Northern Star is red, with a bright yellow edge, and looks well at a distance; and Ambrosia, pink, with orange edge, is also good. Centennial, from the same source, a Cactus form of rich purple-carmine, is also worthy of note.

A stand of a few well-grown single varieties was contributed by T. W. Girdlestone, Esq., Sunningdale, Berks. Hester Dorothea, which was selected for distinction, has flowers of dark claret colour, and the plant, it was stated, only attains a height of about 2½ feet, which is a great recommendation. Maud was a bright yellow, and Sixpenny and Lady Leila were also good.

Show Dahlias were exhibited by Mr. J. T. West, Cornwalls, Brentwood, who had some capital blooms, among which Mr. Gladstone, William Jackson, Ethel Button, Prince Bismarck, Dorothy, Peacock, and Frank Pearce were conspicuous. Centenary, a Cactus variety, also from Mr. West, is a novelty of a bright scarlet colour.

Mr. C. Turner, Royal Nurseries, Slough, also had some fine blooms of show and fancy varieties, and a few bunches of pompons. Glowworm, Maud Fellowes, Agnes, and Sunrise were good. Marmion, a new variety with crimson streaks on a yellow-brown ground, and a well-formed flower, was certificated, and Eldorado, rich crimson, was another fine bloom.

A very extensive collection of show varieties of their own raising, came from Messrs. Rawlings Bros., Romford. There were included several well-known varieties, as R. T. Rawlings, Queen of the Belgians, H. Eckford, Mr. G. Harris, W. Rawlings, J. Henshaw, Mrs. Rawlings, and Dr. Reilly, pale crimson with darker tips to the petals. From Mr. G. S. P. Harris, Scads Hill, Orpington, Kent, was a new show Dahlia, Conquest, whitish-rose, very pretty; and from Mr. J. Green, nurseryman, Dereham, Norfolk, came a Cactus Dahlia, Black Prince, of a very dark colour, but not so starry as are the best blooms of this section.

Orchid Committee.

Present: Dr. M. T. Masters in the chair; and Messrs. H. Ballantine, J. Dominy, Ch. Pilcher, J. Douglas, E. Hill, and J. O'Brien.

A hybrid Cattleya was shown by Miss Harris, The Grange, Lamberhurst; this plant was the result of crossing C. Schilleriana and C. Mossiæ, the latter being the seed-bearer. The flower of the hybrid is in form much like that of the pollen-parent, but a deeper hue is taken on to the petals, which are rosy-crimson. The lip, too, has a slight fringing, and is veined as in C. Mossiæ, with rich crimson, one paler crimson, fading to yellow. About the throat the expanding portion of the lip is quite flat; the growth is that of C. Mossiæ. The plant is named Miss Harris.

Mr. Ballantine, gr. to Baron Schroder, The Dell, Egham, sent a variety of Miltonia vexillaria nana Leopoldi, which is richly coloured, with a very dark triangular blotch at the base of the lip. It was considered by some to be very like the variety superba, but in the opinion of the committee it was distinct.

From Mr. Cummins, gr. to A. H. Smee, Esq., The Grange, Wallington, came a small plant of Masdevallia vespertilio, yellow-brown, with brown spots, and a white lip, after the general appearance of M. Chimæra, and Disperis Fanniniæ, with four flowers, the pale green leaves, ovate, acuminate, and sessile. The flowers are about half an inch long, white, and a peculiar formation is seen in the dorsal sepal, which is formed into a hood, and joins its apex to the apex of the lip.

Fruit Committee.

Present: R. D. Blackmore, Esq., in the chair; and Messrs. Ph. Crowley, J. Cheal, W. Bates, J. Willard, G. Bunyard, J. Wright, A. H. Pearson, T. J. Saltmarsh, G. Wythes, J. Hudson, H. Balderson, F. R. Lane, C. Haycock, H. Weir, G. W. Cummins, and Dr. Hogg.

A collection of eighteen varieties of Grapes was shown by W. Roupell, Esq., Roupell Park, S.E.; they had all been grown under similar conditions in 10-inch pots, and so comparison could be instituted. Canon Hall Muscat was about the finest for size of berry, and Muscat Hamburgh was also good; Foster's Seedling was well coloured, and Chasselas Musqué was also shown. Diamant Traube, as shown, was fine—it is clear green, round-oval, and the bunch is also good; it is an old, almost lost Grape, with a capital Sweetwater flavour, and merits cultivation.

Messrs. W. Paul & Son, Waltham Cross, N., had a large lot of Apples and Pears—over one hundred dishes in all. The Apples were excellent specimens, of fine appearance; Beauty of Kent, Washington, Tom Putt, Peasgood's Nonsuch, Tower of Glamis, Warner's King, Stirling Castle, Benoni, Belle de Bois, and others were well shown Apples; while of Pears, Williams' Bon Chrétien, Souvenir du Congrès, Conseilleur de la Cour, Louise Bonne, may be named.

Three dozen dishes of large well-grown Apples came from Messrs. J. Laing & Sons, Forest Hill; Cellini, Lord Suffield, Worcester Pearmain, Duchess of Oldenburg, Warner's King, Emperor Alexander, and other favourites were seen.

Messrs. Paul & Son, Cheshunt, had twenty-five dishes of Apples, in which Duchess of Oldenburg, Worcester Pearmain, Peasgood's Nonsuch, Wyken, Tower of Glamis were excellent fruits.

Melons were shown by Mr. Taylor, Swindon Hall Gardens, Cheltenham; Mr. J. Brutton, Yeovil; and Mr. G. Hawkins, Bridge End, Glamorganshire, but were of no merit; and from the Royal Horticultural Society's Gardens, fruits of the so-called Melon Pear (Solanum guatemalense) were shown—it has a flavour somewhat resembling a mixture of the Tomato and Cucumber, and, to our taste, is not very pleasing.

Awards were made as follows:—

By the Floral Committee.

First-class Certificate.

To Watsonia iridifolia O'Brieni, from Mr. James O'Brien (unanimous).

Awards of Merit.

To Single Dahlia Hester Dorothea, from Mr. Girdlestone (6 votes).

To Coleus Cleopatra, from Messrs. Hewitt & Co. (7—4 votes).

To Dahlia Conquest, from Mr. G. S. P. Harris (7 votes).

To Chrysanthemum Annie Stevens, from Mr. G. Stevens (7 votes).

To Dahlia Marmion, from Mr. C. Turner (7 votes).

To Dahlia Centenary, from Mr. T. West (8 votes).

To Dahlia Gulielma, from Messrs. J. Cheal & Sons (unanimous).

To strain of Dianthus Snowflake, from Mr. R. Dean.

Cultural Commendation.

To Aphelandra cristata, from Mr. F. Ross.

Medals.

Silver Banksian to Messrs. Paul & Sons, for collection of Dahlias.

Bronze Banksian to Messrs. W. Paul & Son, for collection of Roses.

Bronze Banksian to Messrs. Rawlings Bros., for collection of Dahlias.

Bronze Banksian to Messrs. J. Laing & Sons, for collection of Dahlias.

Bronze Banksian to Mr. J. T. West, for Dahlias.

Bronze Banksian to Messrs. J. Veitch, for collection of Rhododendrons.

By the Orchid Committee.

First-class Certificates.

To Cattleya Miss Harris, from Miss Harris, The Grange, Lamberhurst.

To Miltonia vexillaria Leopoldi, from Baron Schroder, Egham.

Botanical Certificates.

To Disperis Fanniniæ and to Masdevallia vespertilio, from A. H. Smee, Esq., Wallington. These awards were all unanimous.

By the Fruit Committee.

First-class Certificate.

To Grape Diamant, from Mr. W. Roupell.

Medals.

Silver Banksian to Messrs. W. Paul & Son, for collection of Apples and Pears.

Silver Banksian to Mr. W. Roupell, for Grapes.

Bronze Banksian to Messrs. J. Laing & Sons, for collection of Apples.

The Late Mr. Boscawen's Orchids.—The sale of Mr. Boscawen's Orchids will take place at Lamorran on October 3.

THE EDINBURGH PLUM CONGRESS AND CONFERENCE.

The Congress, as was announced in our issue of last week, was a fairly representative one as regards the districts in the United Kingdom whence specimens came. About 1240 dishes of Plums were received by the committee, of which Mr. Malcolm Dunn was convener, and to whose individual efforts was chiefly due the large measure of success that attended the project. The jurors—Messrs. Webster (Gordon Castle), Barron (Chiswick), and Fairgreive (Dunkeld)—passed the whole through a careful scrutiny, especially with the view of checking and correcting nomenclature, and noting the varieties from the different localities, so as to assess the worth of each for culture in the conditions in which they were grown. Pretty full particulars as to soil, situation, elevation, &c., being given in along with the majority of the samples, the official report, which will doubtless appear in due time, will be a valuable work of reference on Plum lore.

Perhaps the most interesting exhibit from the North was that from Gordon Castle, which consisted of about sixty sorts, nearly a half of which were seedlings raised by Mr. Webster. Very few of the latter were named, but one of them — Gordon Castle Seedling — is described in the latest edition of Hogg's *Manual*. Several of the seedlings were exhibited on their branches to show their fruitfulness, which in some cases was prodigious. One of these, named "October Green Gage," was not nearly



Fig. 50.—Vanda kimballiana. (see p. 333.)

ripe; individually the fruit closely resembles the common Green Gage in form, colour, and size, but it is an immense bearer; the branch exhibited was from a standard, was densely clustered for about 2 feet of its length. Being unripe its flavour could not be tested, but Mr. Webster says it was distinctly that of a Green Gage. This and others of the seedlings were highly commended by the jurors, and attracted considerable notice from the fruit growers present.

Besides the Gordon Castle lot, others from the north-east of Scotland, of excellent quality, were tabled. Those, particularly from Cullen House, Banffshire (Mr. Smith, gr.), and from Haddo House, Aberdeenshire (Mr. Forrest, gr.), were very good, though limited in number. In the latter collection, Nectarine, Washington, Goliath, and Jefferson were the best grown varieties, and in the former, Lawson's Golden Gage was notable. Good collections came also from Mr. Crosbie, Buchanan House; and Mr. McLeod, Harrieston, the former containing superior Kirke's and Magnum Bonum; and the latter, Washington, Coe's Golden Drop, and Magnum Bonum, as dishes of high excellence. Mr. Whitton, of Glamis, Forfarshire, set up twelve varieties, all good and well grown, but with Transparent Gage specially fine. Mr. Williams, Tarvit House, Cupar, tabled, among other good sorts, some excellent Jefferson, Pond's Seedling, Magnum Bonum, and Goliath.

Midlothian contributed largely to the gathering. Mr. Dunn, Dalkeith Palace, led the contingent with a collection of fifty varieties, very superior samples, among which were Jefferson, Kirke's, Victoria, Reine Claude de Bavay, and Transparent Gage, the latter especially good, and unquestionably the finest of its kind in the hall. Messrs. Dicksons & Co., Edinburgh, had the next most important collection, in which were excellent examples of Grand Duke, Cox's Emperor, Goliath, Webster's Golden Gage, and Victoria. There were, in all, some thirty varieties, chiefly from cordon, bush, and pyramid trees from the firm's Liberton orchard. Other good collections from this county were exhibited by Messrs. McHattie, Newbattle Abbey; McKinnon, Melville Castle; Taylor, Inveresk House, who showed the best samples of Ouillin's Golden Gage at the Congress; and Bowman, Pittendreich, Lasswade, whose collection contained the finest example of Lawson's Golden Gage in the hall.

Haddingtonshire was well represented by Messrs. Morrison, Archerfield; McKelvie, Broxmouth, the best dishes in the latter being Kirke's, Jefferson, Magnum Bonum, and Transparent Gage; and in the former, Jefferson, Goliath, Victoria, and Magnum Bonum.

Berwickshire was represented by Messrs. Elliott, Blackadder House, whose collection contained, among other good kinds, excellent samples of Belgian Purple and Golden Gage; and Mr. McIntosh, Paxton House, whose best samples were Magnum Bonum and Pond's Seedling.

Roxburghshire and the Tweed District sent several superior collections. Mr. Milne, Minto House, among other sorts, had a very fine Goliath and Victoria. Mr. Watt, Prior Wood, in a collection of thirty kinds, presented capital samples of Magnum Bonum, Jefferson, Kirke's, and Goliath; and Mr. Thomson, Eildon Hall, some very good Jefferson, Green Gage, Victoria, and Magnum Bonum.

Peeblesshire, Mr. Thomson, Carball, sent a good collection for such a high, cold district, the best of which were Victoria and Goliath; and Mr. Cumminson, Kingsmuir, sent good Jefferson, Kirke's, and Coe's Golden Drop.

The Clyde District gave several good collections: Mr. McKinlay, Blackwood House, Lesmahago, exhibited some excellent Goliath and Cox's Emperor; and Mr. Angus Dalziel some superior Kirke's and Goliath.

Perthshire was strongly represented: Mr. Fairgreive, Dunkeld, put up eighteen varieties, the best of which were Caledonian, Pond's Seedling, Jefferson, Cox's Emperor, Magnum Bonum, and Victoria. Mr. Harper, Tullibelton, showed excellent Cox's Emperor, and Kirke's. Mr. Whitton, Methven Castle, good Washington and Guthrie's Topaz; Mr. King, Blair Drummond, Jefferson, Magnum Bonum, and Cox's Emperor, in capital form; and Mr. McKinnon, Scone Palace, Braby's Gage, Diamond, and Pond's Seedling, very good.

Wigtonshire gave an excellent collection, which was sent by Mr. McLennen, Castle Wigg, and contained some capital Coe's Golden Drop and Kirke's.

English exhibits were about twelve in number, and in the main were very superior, and in some cases more varied and interesting than those of Scotland. Mr. Clark, Lowther Castle, Penrith, sent some excellent Kirke's, Goliath, and Magnum Bonum. Mr. Harris, Alnwick Castle, put up superior Kirke's, Prince Englebert, Lawson's Golden Gage and Victoria; Mr. Christie, Warwick Castle, fine Magnum Bonums, Reine Claude de Bavay, Jefferson, Belgian Purple, and Pond's Seedling; Mr. Alexander, Warley Place, Essex, had extra good samples of Goliath, Jefferson and Magnum Bonum. Messrs. H. Lane & Son, Berkhampsted, had very superior Jefferson, Prince Englebert, Grand Duke, Sultan, Prince of Wales, Pond's Seedling, and Diamond. Mr. Watkin, Pomona Farm, Hereford, showed a good collection, among which Diamond, Peach, Pond's Seedling, Ouillin's, Cox's Emperor, Green Gage, and Magnum Bonum were very superior. Mr. Smith, Mentmore, had a very large and interesting collection, the best of which were Green Gage, Grand Duke, Transparent Gage, Cox's Emperor, Sultan, and Michelson's, along with excellent samples of Shropshire and Farleigh Damson, Mussel, and Black Bullace.

Messrs. Smith & Son, Worcester, set up an excellent collection in which Diamond, Coe's Golden Drop, Cox's Emperor, Goliath, and Reine Claude de Bavay were among the best samples. Mr. Barron, Chiswick, exhibited, among others, the little known Poupart, Decaisne, Winesour, and White and Royal Bullace. Messrs. James Veitch & Son, Chelsea, had a large and excellent exhibit, conspicuous in which were Reine Claude Violette, Lawson's Golden Gage, Frogmore Late Gage, Jefferson, Reine Claude de Bavay, Decaisne, and Transparent Gage. Mr. George Bunyard, Maidstone, Kent, sent an interesting collection, among which were fruit-laden boughs of King of Damsons, Reine Claude de Bavay, and Magnum Bonum. Mr. Rust, Eridge Castle, Sussex, tabled a rather numerous collection, among which Diamond, Grand Duke, Pond's Seedling, Washington, and Transparent Gage were conspicuously good.

Ireland contributed five collections. Mr. Cumming, St. Ellens, Dublin, showed some excellent Magnum Bonum, Victoria, and Goliath. Mr. Cobham, Garbally, co. Galway, superior Magnum Bonum, Pond's Seedling, Coe's Golden Drop, and Kirke's. Mr. Warwick, Shane's Castle, co. Antrim, good Transparent Gage, and Jefferson. Mr. Whyttock, Coolatton, co. Wicklow, capital Diamond, Pond's Seedling, Prince Englebert, and Belle de Septembre, and Mr. Hartland, Cork, excellent samples of Magnum Bonum, Archduke, and Reine Claude de Bavay.

THE CONFERENCE,

Which was well attended, was presided over by Mr. M. Dunn, who read a brief paper on the history, the cultivation, and the uses of the Plum. In the discussion which followed, Mr. Webster gave some interesting details respecting his mode of procedure in crossing for the purpose of rearing new varieties. He had hitherto directed his efforts towards infusing the flavour of the Gage family into the larger fruiting sorts, such as Jefferson, and had, for this purpose, selected the latter as the seed parent, and Green Gage as the pollen parent, and had succeeded in some cases in getting near to his ideal.

Mr. Davidson, of Messrs. Dicksons & Co., endeavoured to elicit the cause of the death of trees of Victoria and Prince of Wales, which sometimes occurs to a disastrous extent in the orchards of the Clyde district and elsewhere. The cause, he said, was obscure, and there was considerable difference of opinion regarding it, some holding that it was constitutional, and others that it was due to the trees being worked on unsuitable stocks. Mr. Barron had seen hundreds of trees die about London in the way described, but had been unable to decide as to the cause of death, but held the opinion that it was probably owing to the action of frost on the sap in spring.

STIRLING.

SEPT. 5 and 6.—This show was held in the large Public Hall, which, although it is capacious, was filled to overflowing; plants were shown in good numbers, and though not of large size, they were specimens of superior cultivation. Mr. J. Carmichael, of Tench; Mr. A. Ferguson, Woodville; Mr. McTavish, Airethrey; Mr. Watson and Mr. J. Waldie, Arndean, were the most successful exhibitors of plants.

Cut flowers consisted of Dahlias, Asters, Chrysanthemums, and varieties of hardy herbaceous in considerable quantities. Mr. McTavish, Mr. Dawson, Mr. D. McDonald, Mr. McNiel, Mr. Ferguson, and Mr. H. Watson being the chief prize takers.

Fruit constituted a fine feature, and brought out a strong competition. Mr. McTavish won 1st place with two kinds of Grapes, staging Muscat of Alexandria and Black Hamburgh of fine quality, good alike in colour and bloom. Mr. D. Howie took 1st in the Black Hamburgh class, and in classes for any other white or black kinds, in each competition, with finely-finished bunches. With Muscat of Alexandria, Mr. D. McDonald, of Dalnair, won, showing fruit well-coloured and fully ripe. Mr. McTavish was successful with Peaches and Nectarines. Jargonelle Pears were shown in large numbers, some few dishes being over ripe, but others were in capital condition; Mr. Alexander being 1st. Mr. W. W. Ritchie, Polmaise, showed strongly in the Plum classes. For eight kinds of fruit, and for six sorts of hardy fruits, Mr. McTavish stood 1st, with good produce in each instance. Apples were shown in good condition by the last-named exhibitor, Ecklinville being the kind staged.

Vegetables were tabled in large numbers; for a collection of ten kinds, Mr. D. McNeil secured the 1st place, against another strong exhibit from Mr. McTavish. The Peas, Potatos, Cauliflowers, and Celery in the 1st prize lot were very fine. Mr. J. Todd secured the 1st position with six kinds of Potatos. Messrs. Drummond & Sons, of Stirling, greatly assisted the show by their exhibits of plants and cut flowers, not for competition.

NEWCASTLE.

SEPT. 11, 12, and 13.—The sixty-fifth autumn show of the Incorporated Botanical and Horticultural Society of Durham, Northumberland, and Newcastle, was opened on Wednesday in the Leazes Park, Newcastle, under the patronage of the British Association. The weather was not propitious, and somewhat interfered with the attendance. The show was excellent in every respect. The display in each and all of the classes exceeded anything previously seen at Newcastle exhibitions. The fruit classes called for special mention, and the crowds of people who witnessed the various exhibits, which were tastefully arrayed in the centre tent, expressed the unanimous opinion that they had seen nothing to surpass the display. The show of cut flowers was perhaps the best ever seen in this county—at least this was the opinion of competent judges. Roses were rather late, and though they lacked quantity, they certainly were of excellent quality. Dahlias, too, were a magnificent show. Gladioli were extraordinarily good, and they embraced many choice varieties. Northern horticulturists evidenced great interest in the show of Hollyhocks, and it included some fine specimens.

The opinion was unanimously expressed that the display of herbaceous plants could not well be rivalled anywhere else. Whether the goodness of the show is attributable to the fact that the Society gave extra prize-money, in addition to £100 presented by the British Association, or that the exhibitors have been awakened to a still keener sense of rivalry in competition, is a matter of speculation. Certain it is, however, that the display this year in point of quality exceeded all previous exhibitions held under the auspices of the Society. There were no less than thirteen firms who have stands elaborately decorated with flowers, &c., or with florists' requisites, and they in themselves form a most important attraction.

Messrs. William Fell & Co., seedsmen and nurserymen, Hexham, exhibited one of the finest collections of specimen Conifers ever seen in the north. The specimen Conifers are from 4 to 7 feet in height, and perfectly symmetrical in shape, and remarkable for healthy colour.

Messrs. Little & Ballantyne, of Carlisle, exhibited a large variety of ornamental plants, which were arranged with fine effect. The Crotons, as in past years, were superb specimens, both for colour and finish. In addition to other exhibits, they had a fine group of seedling tuberous Begonias.

BRIGHTON.

SEPT. 11 AND 12.—This autumn show was admitted by those of the Brighton and Sussex Horticultural Societ who have frequently seen it, to be the best that has been held for many years, in the quality and number of the exhibits. Mr. Offer, gr. to J. Warren, Esq., Handcross Park, was a very pro-

minent exhibitor of many well-grown specimen plants. He was 1st, with eight stove or greenhouse plants, having, among others, good examples of Lapageria rosea and Franciscea calycina major.

For four plants, Mr. Portnell, gr. to Sir Archibald Lamb, Beauport Park, Hastings, was an easy 1st, with finely flowered specimens of Bougainvillea glabra and Erica cerinthoides coronata. Other exhibitors showed well, the most noticeable plant being a fine Vallotta purpurea, and the Erica abovenamed, a very fine specimen, both of which came from Mr. Crossman, gr. to the Misses Briscoe, Coghurst Park. A superbly flowered plant of Lapageria alba was staged by Mr. Mould, Pewsey, Wilts. Ericas are, as a rule, shown well at Brighton. Mr. Portnell won the 1st prize, with healthy, medium sized plants of the following:—E. Austiniana, E. Irbyana, E. Aitoniana Turnbulli, E. Fairrieana, and E. McNabiana. Mr. Offer came out strongly with fine-foliage plants, his Crotons being fine in colour and robust in health, and consisted of the varieties, C. Warrenii, C. Andreanus, C. princeps, and C. Evansianus; also capital plants of Cycas circinalis, Encephalartos villosus, Latania borbonica, and the seldom seen Bounapartea juncea, together with a healthy piece of Phyllotænium Lindenii—a fine group of plants. Mr. Currey, gr. to Colonel Pepper, Salisbury, was a good 2nd, with well-grown plants —Croton Johannis, C. angustifolius, and Dasylirion acrotrichum being the best. Mr. Offer repeated his former success, with six Ferns, Cyathea dealbata, and other Tree Ferns, with a grand plant of Thamnopteris nidus avis and Gleichenia Mendelii, forming in all a fine half-dozen.

In a class provided for a group of Ferns arranged for effect, he won again, with a tasteful arrangement set up in a bold and effective manner; Mr. W. Miles, West Brighton Nursery, being a good 2nd; and Mr. Spottiswood, gr. to Mrs. Duddell, Queen's Park, Brighton, a close 3rd. In other groups, Mr. Currey won, with a light arrangement.

Zonal Pelargoniums were shown in good form in two classes by Mr. Meachen, gr. to Mrs. Armstrong, Withdeane.

Begonias (tuberous) made a very effective display, and elicited a strong competition, Mr. Humphrey, Highlands, Keymer, taking 1st, having in his twelve plants several good doubles. Mr. J. B. Godman won with a like number of very fresh healthy plants for the dinner table.

A noble group of decorative Palms, Cycads, and other fine foliage plants, prominent among which were bright examples of Crotons in variety, and Acalypha musaica, and vigorous Lilium longiflorum Harrisi in quantity, with blooms of unusual size, were staged, not for competition, by Messrs. Balchin & Sons, Keymer and Hove Nurseries; and the same firm suspended an anchor in white flowers in front of a pier-glass, where it was seen to good advantage.

Cut Flowers in the several classes were staged in fresh bright condition, the August rains having evidently benefited hardy herbaceous and other flowers, and which made a capital display of themselves. Messrs. Paul & Son, who staged in their well-known form, were 1st; and Mr. Miller, of Shoreham, was a good 2nd.

Stove and greenhouse cut flowers were very strong in Ericas of the hard-wooded type, and other good plants of this season of the year. Mrs. Gibson, Saffron Walden, took 1st, against Messrs. Knight & Co., Ore; the positions of the two exhibitors might have been reversed, without any complaint being reasonably raised. In a smaller class, Mr. Godman took 1st, having in his box many good things not often observed at shows.

Dahlias were not quite so numerous as usual; Messrs. Cheal & Sons, Lowfield Nurseries, Crawley, however, staged exceedingly well in forty-eight show and fancy decorative varieties, and pompons and singles, taking 1st, in every competition; Mr. Walker, Thame, being 1st for twenty-four blooms of show and fancy varieties.

Roses were fresh and bright, Messrs. S. Perkins & Sons, Coventry, beating Messrs. Paul & Son in the larger class. In other classes, Mr. F. P. Budd, of Bath, was the most successful exhibitor, being strong in Tea-scented Roses.

Bouquets and a wreath from Messrs. S. Perkins & Sons secured the 1st awards in their respective classes.

Table decorations were not quite so numerous, but had there been more, there would have arisen some difficulty in staging them. Mr. Miller took 1st, with a light arrangement; his three stands had the most noticeable feature of being composed chiefly of hardy flowers, yet the effect was all that could be desired.

Messrs. Ewing, of Havant, showed boxes of cut flowers and foliage, the latter consisting of the best ornamental varieties of trees and shrubs, being an interesting exhibit. Mr. Geo. W. Piper, of Piltdown Nurseries, showed several boxes of Roses, chiefly Teas, in bunches, exemplifying their value in the autumn for cut purposes.

Fruit was, as usual, abundant. Grapes, perhaps, of excellent quality were not quite so numerous. Mr. Baker, Ottershaw Park, Chertsey, was 1st, with Black Alicante; and Dr. Withers Moore with Black Hamburgh, both lots being well finished. Muscats were finely shown by Mr. P. E. King, Finchley, who had Cannon Hall Muscat, large in bunch and berry. Mr. Goldsmith, Kelsey Manor, won 1st in another class, with good produce.

Pine-apple, a Queen of large size, was staged by Mr. Pain, Chelford. Peaches and Nectarines were present in good numbers, Mr. Lucas, Warnham Court, taking 1st, with two dishes of fine Sea Eagle and Barrington Peaches, of extra colour; whilst the fruits of Princess of Wales Peach, of large size, from Mr. R. A. Bevan, took the 1st in the single dish class. Of Nectarines, the best two dishes were Pine-apple and Victoria, from Mr. Goldsmith; and a single dish again brought out Pine-apple Nectarine, from Mr. Lucas. Figs were, as usual, of very fine quality, and Mr. McLeod, of Glynde, and Mr. Miller showed some excellent Brunswick and Brown Turkey.

Pears Williams' Bon Chrétien and Beurré d'Amanlis were the winning varieties in both classes of dessert kinds, and came from Mr. McLeod and Mr. Goldsmith respectively. Fine fruits of Uvedale's St. Germain were shown by Mr. R. A. Bevan and Mr. King. Lady Sudely Apple came from Mr. Goldsmith, and took the 1st prize in one class; and Kerry Pippin, from Mr. W. H. King, the same honours in another. Culinary Apples were in strong force, Warner's King and Nelson's Glory winning 1sts for Mr. W. Savill, in a strong competition. Of Plums, Jefferson and Coe's Golden Drop were to the front, the highest award going to Mr. C. T. Lucas in two instances, and who also took two 1sts for superior Transparent Gage, and with extra fine fruits of Morello Cherries. Tomatos were largely shown, the best coming from Messrs. Ellis & Co., and Mr. Wharton.

Several good collections of vegetables were shown for the special prizes of Messrs. Sutton & Sons and Messrs. Cheal & Son, the best lots coming from Mr. C. Borrer Mr. Scott, Dr. Withers Moore, and Mr. R. Bevan. A finely grown collection of the best kinds of Apples and Pears were shown in their usual style by Messrs. Cheal & Son, Crawley.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending September 16, is furnished from the Meteorological Office:—

"The *weather* has been very fine and dry over the more southern and south-western parts of England, but over Ireland, Scotland, and the northern parts of England, the conditions, though generally dry, have been very cloudy.

"The *temperature* was much above the mean during the greater part of the period, but towards its close the thermometer fell quickly, so that the average for the week shows an excess of only 1° in 'Scotland, N.,' and 2° in 'England, E.,' and 'England, N.W.,' while the greatest difference was no more than 4° over southern and central England and the north of Ireland. The highest of the maxima, which were recorded on irregular dates between the 10th and 13th, varied from 66° to 73° in Scotland, from 75° to 76° in Ireland, and from 73° to 84° over England. The lowest of the minima, which were registered either on the 15th or 16th, ranged from 34° in 'Scotland, N.,' and 36° in 'England, S.,' and 'Scotland, W.,' to 49° in 'Ireland, N.,' and 52° in the 'Channel Islands.' During the earlier part of the period the minima were, in many instances, as high as 60°.

"The *rainfall* has again been less than the mean in all districts. At many of the English stations the weather has continued quite rainless.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending September 16.	Accumulated Temperature. Above 42°, for the Week.	Accumulated Temperature. Below 42°, for the Week.	Accumulated Temperature. Above 42°, difference from Mean since Jan. 1, 1889.	Accumulated Temperature. Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (−) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1889.	Rainfall. Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 +	75	0	+ 221	+ 4	2 —	168	27.5	18	23
2	3 +	93	0	+ 53	+ 5	6 —	136	18.5	17	30
3	3 +	109	0	+ 54	+ 7	5 —	125	16.7	18	28
4	2 +	123	0	+ 29	+ 112	7 —	130	18.0	29	32
5	4 +	126	0	+ 33	+ 59	7 —	121	20.1	29	29
6	4 +	137	0	+ 77	+ 75	7 —	123	16.4	51	32
7	3 +	101	0	+ 93	— 23	7 —	144	27.3	12	31
8	2 +	113	0	+ 86	— 1	8 —	129	20.5	21	30
9	3 +	123	0	— 10	+ 88	11 —	129	22.6	43	36
10	4 +	118	0	+ 71	— 53	2 —	160	26.3	16	27
11	3 +	122	0	+ 3	— 14	5 —	143	25.3	24	33
12	3 +	139	0	+ 117	— 16	8 —	135	17.4	76	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

LAW NOTES.

In the High Court of Justice, Queen's Bench Division, between Henry Hawkins and Joseph Bennett, Plaintiffs, and Thomas S. Ware, Defendant.

Arbitration before Messrs. Ker, Paul, and Steele, at Nos. 63 and 64, Chancery Lane, September 10, 1889.

Extracts from Transcript of Shorthand Notes of Evidence.

Counsel for the Plaintiffs, Mr. J. P. Grain, instructed by Mr. Bernard Wilson, of No. 25, Wellington Street, Strand.

Counsel for the Defendant, Mr. Loehnis, instructed by Mr. Charles Butcher, of 25, Old Jewry, Solicitor to The Nursery and Seed Trade Association, Limited.

Mr. Henry Hawkins called and sworn. Examined by Mr. Grain: Q. You are one of the plaintiffs in this action, and carry on business as a florist in partnership, under the name of Hawkins & Bennett, of Twickenham? A. Yes.—Q. Have you a very considerable business, and are you fairly well known amongst florists? A. Yes. I am very well known indeed.—Q. About four years ago you got from Mr. Wermig a Chrysanthemum sport which you reared? A. We bought plants from Mr. Wermig, and had a sport from them.—Q. In reference to that sport you exercised a good deal of care and attention, and ultimately a sport came from it which you determined to exhibit? A. True.—Q. At the National Chrysanthemum Society, and also the Royal Horticultural Society at the Royal Aquarium? A. Yes.—Q. That was in September, 1888? A. Yes.—Q. You exhibited the sport under the name of Mrs. Hawkins? A. Yes. . . . .—Q. You were awarded these two Certificates? A. Yes.—Q. Do you know, as a matter of fact, to your own knowledge, whether the defendant obtained any Certificate at either of these shows? A. He did not.—Q. Do you remember, shortly after receiving this Certificate, defendant coming to you? A. I do —Q. Will you relate the conversation you had with him at that interview in respect of the matter now at issue? A. First we had received a letter from Mr. Ware. [Dated September 15, 1888.] He came to see if we would sell our plant. . . . . He offered such a ridiculous price that we would not sell; I said we had two First-class Certificates for the plant. After that, on leaving, he said, "If you don't let me have it, I shall be up against you."—Q. The interview ended in nothing? A. I refused to sell. The terms were not good enough.—Q. You thought the Certificates were worth something? A. I did. . . . . —Q. What do you say is a fair price for Mrs. Hawkins' plants? A. We should send them out at 18s. a dozen.—Q. Do you recollect having this circular brought to your notice? [Circular produced.] A. I do very well.—Q. Thereupon you went to your solicitor? A. I did.—Q. You did not see the defendant at all; you always left the matter in the hands of your solicitor? A. Yes.—Q. Does that [Mr. Ware's representation of Chrysanthemum in his circular] describe the shoot in reference to which you got the two Certificates? A. It lowers mine in the estimation of the public. —Q. It is not a correct representation? A. No.—Q. Having given your plant the name of Mrs. Hawkins, what is the custom of the trade in regard to that? A. That the one plant only ought to have the same name.—Q. A name once given to a certificated plant, it is then known to the trade as coming from the first plant? A. Yes.—Q. Does the Golden Fleece truly represent the certificated Mrs. Hawkins? A. No. [Circular produced, and read as follows:—"I was awarded 1st prize at the Exhibition of the National Chrysanthemum Society, held

at the Royal Aquarium in September last."]—Q. Was there any other exhibition held at the Aquarium? A. Only that one.—Q. I believe you have grown a good many of these plants; how many? A. I should have sold 1200 if it had not been for the threat this last season.—Q. What would have been the value of these 1200 last season if there had been no circular or threat? A. Eighteen shillings a dozen. The stock that is coming this year cannot fetch half as much, but we should have had more of them.—Q. How long have you been a Chrysanthemum grower? A. About eighteen or twenty years.

Cross-examined by Mr. LOEHNIS: Q. You are not what would be called a Chrysanthemum grower in the way Mr. Ware is? A. No.—Q. You know that G. Wermig sported from Madame Desgrange? A. Yes.—Q. Is it the habit of plants to sport in different places in the same year? A. I could not say.—Q. Don't you know that G. Wermig sported with Mr. Laing, and Messrs. Heath? A. I don't know.—Q. This plant sported at your place? A. It did. . . . .—Q. Did you purchase twelve cuttings from Mr. Heath? A. I bought some stools from Mr. Heath's, in February, 1889. . . .—Q. Certificates are awarded by the National Chrysanthemum Society for a new variety? A. That is right.—Q. If two plants of the same variety are exhibited by different exhibitors, a Certificate is given to him who has produced the best plant? Is that so? A. I can't answer that question.—Q. The Certificate is awarded for a new variety, the National Chrysanthemum Society having established that to prevent the same plants being sold under different names? A. I can't say.—Q. Do you know the difference between a prize and a Certificate as awarded by the Chrysanthemum Society? A. A Certificate is given for a new variety, and a prize for best grown exhibits.—Q. Do you remember Mr. Ware being awarded a prize for the best grown collection? A. Yes.—Is it not the custom of the trade, when you send out catalogues, to always put at the end that the variety holds a Certificate from the National Chrysanthemum Society? A. Yes.—Q. Then Mr. Ware in drawing up this circular was quite right, in accordance with the custom of the trade, in stating this plant, Mrs. Hawkins, had been awarded a First-class Certificate? A. I don't believe he was.—Q. Do you know that Mr. Ware had a First-class Certificate awarded him for Mrs. H. J. Jones? A. No answer.—Q. Do you know that this plant sported with Mr. Heath, Mr. Laing, and Mr. Billinghurst? A. No. — Q. Can you tell whether it frequently happens that two plants sport with two owners at the same time? A. I might have heard of it, but I can't tell you of any case.—Q. Was Mr. Ware acting in accordance with custom in offering to purchase your stock? A. I don't believe so.—Q. Did you refuse to sell? A. I did.—Q. Did not Mr. Ware offer to purchase after the show in the afternoon? A. I don't recollect.—Q. He wrote a letter to you, and then came to see you? A. He did. — Q. The price offered was £10? A. Right.—Q. What did you ask? A. I did not ask anything after he offered what he did. — Q. Did you tell him that your plants had been mixed? A. No.—Q. Were they mixed, or any portion of them? A. I don't recollect that they were.—Q. Who was your Chrysanthemum grower at that time? A. A man of the name of Dyer. . . . .—Q. Did you not discharge him for neglect of duty? A. Yes; he was not discharged because the plants were mixed.—Q. Is it the custom for two growers to send out a new variety at the same time? A. I am not aware of it.—Q. Did Mr. Ware ask you when you intended to send out your plants? A. I do not recollect that he did.—Q. Did you write this letter. [Letter dated September 24, 1888, produced and read.] A. Yes.

Mr. LOEHNIS: From this you inform this gentleman you were going to send out your plants in the spring of next year, 1889?—Q. Did you inform him you had changed your mind? A. I don't recollect it.—Q. The bloom varies in shade according to the soil and the place where it is grown, and the amount of air it gets? A. That is right.—Q. Do you say Mr. Ware's plant is not the same as the plant awarded the First-class Certificate? A. It is not the same plant.—Q. They are the same parentage? A. Madame Desgranges is the mother of them.—Q. Yours and Mr. Ware's come from G. Wermig? A. Ours sported from G. Wermig. I can't say whether Mr. Ware's did.—Q. Have you been to see Mr. Wright at the Temple Gardens, he having obtained this plant from Mr. Ware? A. Mr. Ware sent it to him to grow.—Q. Mr. Wright then came up to your nursery and said the plants were the same kind? A. I don't know.—Q. How large was your stock when you exhibited? A. About fifty or sixty.—Q. How many plants had you in the spring of 1889? A. Twelve hundred.—Q. You could have sold them at 18s.? A. If we advertised.—Q. Why didn't you advertise? A. Because of the threat of Mr. Ware.—Q. Have you any plants from those you had of Mr. Heath? A. No; they are not sufficiently forward.—Q. Are they different from these? A. I can't say at present.

Mr. KER: Have the plants from Mr. Heath been treated exactly like these? A. No. [Plants produced and compared.]

Cross-examined by Mr. LOEHNIS: Q. Are these plants a sample of the 1200? A. A fair sample of my stock.—Q. Why is this plant and this plant not the same kind? A. I don't dispute it.—Q. The plants are the same? A. It is not for me to say.—Q. Do you say these plants are the same as ours? A. They are not the same, taking them all round. This is of a much sturdier growth, and ours is a brighter yellow.—Q. Does the sturdiness of the plant vary according to its age? A. Yes.—Q. The only difference is in the colour? A. Yes, some of mine are lighter.

Re-examined by Mr. GRAIN: Q. Is that [handing green circular] a true representation of Mrs. Hawkins? A. No.—Q. As far as you are aware has any other person the right to use the name Mrs. Hawkins? A. No one.—Q. Did you ever give the defendant authority to use the name Mrs. Hawkins? A. No.—Q. But for the issue of this circular you would have sent out this Chrysanthemum in the spring of this year? A. Yes.—Q. Did you receive orders for some of the specimens to send out after the spring of this year? A. Yes.—Q. Do you say in consequence of the issue of this circular that the sale of the certificated plant has been injured? A. Yes.

Mr. JOSEPH BENNETT sworn, and examined by Mr. GRAIN: Q. You are the partner of the last witness and one of the plaintiffs in this action? A. Yes.—Q. Is the evidence you have heard given by your partner correct? A. Yes.—Q. You can say that none of Mrs. Hawkins plants have been sent out? A. Yes.—Q. Were you present at any of the interviews? A. I was present when Mr. Ware came to buy the plant.—Q. What took place? A. Mr. Ware said, "Now, you must not think you have a white elephant," and so on. . . . . He offered £10.—Q. How many Chrysanthemums had you got at the beginning of this year of this sort? A. We had 1200 in stock. — Q. Why did you not send them out? A. Because Mr. Ware issued this circular, and threatened us, we determined we would not send them out.—Q. Did you write that letter in which you stated you were going to send them out in the spring? A. Mr. Hawkins wrote it.—Q. Do you say that the plants produced on behalf of Mr. Ware are not the same? A. My experience is that one is better grown than the other, and some are darker than others.—Q. Do you know, as a Chrysanthemum grower, whether the colour varies according to the soil or the locality in which they are grown? A. I have not had much experience in that way.

Mr. RICHARD DEAN sworn, examined by Mr. GRAIN: Q. You reside at Ranelagh Road, Ealing, and were one of the two judges at the National Chrysanthemum Society's show last year? A. Yes.

Cross-examined by Mr. LOEHNIS: Q. A Certificate is awarded for a new variety? A. Yes.—Q. Were not the plants of Mr. Hawkins and Mr. Ware exhibited together on September 12? A. Yes.—Q. To the best of your judgment, were they not the same plant? A. I am not prepared to say they were the same plant; there was a difference of opinion on the part of the members of the Floral Committee.—Q. A prize is awarded for a collection of good flowers? A. Yes. . . . .—Q. Does it frequently happen that two plants sport at different places at the same time? A. Yes.

By Mr. KER: Q. Were the flowers shown about the same age? A. No. Mr. Ware's did not seem to be so fully developed as Mrs. Hawkins.

Re-examined by Mr. GRAIN: Q. You say this was a new sort, and the owner has a right to use the name, and the only name? A. That has been the custom of the trade.

Mr. JAMES WALKER sworn, examined by Mr. LOEHNIS: Q. You were present in September last year when Mr. Hawkins' Chrysanthemum was on view and awarded a Certificate? A. Yes.—Q. Did you see the plants there? A. Yes.—Q. You saw Mr. Hawkins' and Mr. Ware's on September 12? A. I was not at the National Chrysanthemum Show.—Q. Does the shade of these plants vary according [to the circumstances under] which they are grown, and the soil and other conditions? A. The shade may vary a little.—Q. Will you look at these plants and tell me whether they are the same? A. I am perfectly satisfied that they are the same.—Q. Is it in accordance with the customs of the trade for one grower to purchase the stock of another in the case of a new plant? A. Yes, this is done.—Q. If this is not done, do they arrange to send out their plants at the same time? A. Not necessarily. It is the custom of the trade to send out plants of one variety in the same name.

Cross-examined by Mr. GRAIN: Q. Do you say it was in accordance with the custom of the trade to issue a circular of this description? A. Yes, worded like this.—Q. Was it usual for Mr. Ware to have done what he did to try to purchase the stock of Mr. Hawkins? A. Yes.

Re-examined by Mr. LOEHNIS: Q. As Mr. Hawkins would not sell to Mr. Ware, it was quite in accordance with the custom of the trade for Mr. Ware to send out his plants? A. Yes.—Q. There is nothing contrary to custom in what he has done? A. No.

GUSTAV WERMIG sworn, examined by Mr. LOEHNIS: Q. You carry on business at Woking as a florist and nurseryman, and grow Chrysanthemums to a considerable extent? A. Yes.—Q. You are the Mr. G. Wermig who gave that name to a sport from Madame Desgrange, that sported with you, as well as at four or five other places? A. Yes.—Q. As it sported with several people, you were obliged to send it out yourself at once? A. Yes.—Q. Did you sell any G. Wermig plants to Mr. Hawkins? A. Yes, 100 plants.—Q. Does the shade of the flower in your experience vary according to the place in which the plant is grown, the soil, and the atmospheric conditions. A. Yes; according to the light and air?—Q. Have you examined these plants? Yes.—Q. Do you say they are the same variety, or different? A. I do not see any difference. My opinion is that they are the same.—Q. What is the custom of the trade if a Certificate is awarded to one owner of a new plant when others have a sport of the same kind? Under what name would the others sell? A. Under the name which would have been certificated; in fact, I should think it would be a swindle to send it out under any other name.—Q. Have you seen this circular? [Green circular handed to witness.] A. Yes.—Q. Is the picture of Mrs. Hawkins in it a fair representation of that plant? A. My experience is, that flowers are generally different to what they are represented in cuts.—Q. The cut does not damage the sale of the flower? A. The cuts do more than justice to them.—Q. Does that do justice to Mrs. Hawkins? A. I think so.

Cross-examined by Mr. GRAIN: Q. Do you say that practically a Certificate has no commercial value? A. It has a certain commercial value; it is an honour you can name the flower, and it is an advertisement for you.—Q. Is there any value in the name? A. Having got a Certificate, it is a recommendation.—Q. Supposing you had obtained this Certificate for a [plant named] Mrs. Hawkins, do you think that Mr. Ware had any right without having purchased your stock to adopt the same name for his plant? A. I should think so if he had the same variety.—Q. Do you say the words underlined in the circular, viz: "I was awarded 1st prize at the exhibition of the National Chrysanthemum Society, held at the Royal Aquarium, in September last," do not refer to the heading of the notice "New Early Flowering Chrysanthemum, Mrs. Hawkins?" A. I should not think it refers to Mrs. Hawkins.—Q. Will you look at this circular [circular handed to witness], under the illustration of the flower are the words "New Early Flowering Chrysanthemum, Golden Fleece," and the same words "I was awarded a 1st prize at the exhibition of the National Chrysanthemum Society, held at the Royal Aquarium, in September last." Does that refer to Golden Fleece? A. No.—Q. Can you give any reason why Mr. Ware changed the name of his plant from Mrs. Hawkins to Golden Fleece? A. No.

WILLIAM HOLMES sworn, and examined by Mr. LOEHNIS: Q. You carry on business at Frampton Park Nurseries, Hackney, have been a grower of Chrysanthemums for some twenty years, and are the Honorary Secretary of the National Chrysanthemum Society? A. Yes.—Q. You were the Hon. Secretary of that Society in September last year, and were present when Mr. Hawkins had a Certificate awarded him? A. I was.—Q. Mr. Ware exhibited some flowers at the same time? A. Yes.—Q. Did you form any judgment at that time whether they were identical? A. I believe they were the same. I have examined them since, and think them the same variety.—Q. With reference to Mr. Hawkins having been awarded a Certificate, what could Mr. Ware do? A. He could only adopt the name under which the plant was certified. If he had taken any other course, he would have done contrary to custom.—Q. This is a 1st prize, I think, for a collection of cut flowers? A. Yes.—Q. Will you now look at this circular, and give your opinion of the first and second paragraphs? A. I look upon it that the first deals entirely with early flowering Chrysanthemums, and the second with Mrs. Hawkins. I think the statement quite clear and correct.

By Mr. KER: Q. When two plants are exhibited by distinct exhibitors, the Certificate is given to the one staging the best grown plant? A. That is a regulation which was adopted by the Society.—Q. Is that regulation five? A. Yes.

Cross-examined by Mr. GRAIN: Q. Is there any commercial value, in that Certificate? A. Certainly there is a value; it distinguishes that variety as distinct from all others.—Q. I presume it gives an extra commercial value to that variety? A. I have no doubt it does.—Q. What do you say are the commercial rights of a person who receives that Certificate for that special thing? A. To send out the plants in his possession of that variety in his name, that Certificate does not give him the right, but he has it independently.—Q. Does it strengthen that right? A. I do not say so at all.—Q. Does it increase the right? A. It does not affect it.—Q. It is of no value? A. Yes; it enables him to send out the plants under a distinct name from all others.—Q. That Certificate is a kind of copyright? A. I do not say so; Certificates are often given to florists who exhibit plants, and [who have] not raised them.—Q. You say Mr. Ware exhibited something at the same time? A. I do.—Q. Will you say that was identical with what was exhibited by Mr. Hawkins? A. I say it was the same variety.—Q. You heard what Mr. Wermig said; can you give any reason why the name was changed? A. Except what I heard the last witness say, I think Mr. Ware changed it in a weak moment.—Q. Is there a rule that exhibitors ought to give a name to a plant? A. I don't remember that there is.

By Mr. PAUL: Q. What is a sport? A. A sport, I take it, is where a plant or flower shows something that is distinct in colour or formation from its parent.—Q. Supposing that a sport occurred with two people at the same time, would one have more right to it than another? A. No.

Mr. GEORGE GORDON sworn, and examined by Mr. LOEHNIS: Q. You reside at 1, Stile Villas, Gunnersbury, and are assistant-editor of *The Gardener* [*Gardeners' Magazine*], also a member of the Catalogue Committee of the National Chrysanthemum Society, and know a good deal of the synonyms, &c., of Chrysanthemums? A. Yes.—Q. Were you a member of the Floral Committee who awarded the Certificate in question on September 12, 1888? A. Yes.—Q. Did you see these plants exhibited? A. Yes; they were both put on the table at the same time.—Q. Did you form any opinion at that time as to whether they were the same variety? A. Yes, my opinion was that they were identical.—Q. When a Certificate has been granted, and another gentleman holds plants of the same variety, and he wishes to sell them, under what name ought he to do so? A. Under the same name as the one certificated.—Q. Is it ordinary when two hold the same variety for one to get the whole into his own hands? A. Yes.—Q. Are arrangements sometimes made between them to send out their stock at the same time? A. Yes.—Q. In your opinion there is no necessity? A. No.

Cross-examined by Mr. GRAIN: Q. You recognise some value in a Certificate of this description? A. There is a value to it.—Q. You would expect a person receiving that Certificate either to make his price in selling or in a general advertisement? A. He would be free to do as he wished.—Q. He would be entitled to keep it for himself and make his own price? A. He would be entitled to keep it.—Q. Would a person have a right to say, "I don't sell; I have named this Mrs. Hawkins, and have received a Certificate of Merit from the Floral Committee, and, therefore, I shall send it out myself? A. He would have the right to exercise his discretion.—Q. Would any other person have a right to send out plants in the name of Mrs. Hawkins? A. Yes, if they were identical.

Re-examined by Mr. LOEHNIS: Q. If Mr. Ware asks Mr. Hawkins when he is going to send out his plants, and he refuses to inform him, Mr. Ware is entitled to send out his plants at that time? A. Yes.

Mr. NORMAN DAVIS sworn, and examined by Mr. LOEHNIS: Q. You carry on business at Camberwell with your partner, Mr. Jones, as florists and nurserymen? A. Yes.—Q. You have for the last ten years made the growing of Chrysanthemums your special study? A. Practically all my life.—Q. You have made the names of Chrysanthemums a special study? A. I have.—Q. A Certificate having been awarded to Mr. Hawkins, and Mr. Ware having a plant of the same variety, what is Mr. Ware's course to adopt to get that plant into the market? A. The custom in the trade has been to sell plants of the same variety under the same name.—Q. Is there nothing in the custom of the trade, as far as you are aware, to prevent a person who has plants of the same variety from selling them when and how he pleases? A. Certainly not.

Cross-examined by Mr. GRAIN: Q. Is there any value in that picture? [Certificate produced to witness.] A. Certainly.—Q. Does it increase the commercial value of the plant? A. Certainly.—Q. Would that Certificate increase the value of the plant? A. Yes.—Q. Do you say that Mr. Ware had a right to sell his plant under the name of Mrs. Hawkins? A. Certainly.—Q. Can you give me any reason why he altered the name of his plant? A. I should think it was weakness on his part.

Re-examined by Mr. LOEHNIS: Q. The Certificate is of value, inasmuch that it stamps the plant as a new variety? A. That is it.

Mr. WRIGHT, sworn and examined by Mr. LOEHNIS: Q. You are a gardener at the Temple Gardens, and have had considerable experience as a Chrysanthemum grower? A. Yes.—Q. Were you on the Floral Committee of the National Chrysanthemum Society's Show in September last year and saw these plants exhibited? A. Yes.—Q. Did you form an opinion that both plants resembled each other? A. Yes. I had an impression that they were the same.—Q. If a plant gets certificated as Mr[s]. Hawkins did in this case, and Mr. Ware has plants of the same variety, under what name ought he to sell them? A. Under the name of the certificated plant.—Q. Does the possession of that certificate give Mr. Hawkins any right to prevent Mr. Ware selling his plants when and where he pleases? A. Certainly not. . . . .

Mr. WILLIAM HEATH sworn, and examined by Mr. LOEHNIS: Q. You and your father and brother are nurserymen at Old Southgate? A. Yes.—Q. One of your G. Wermig Chrysanthemums sported with you in 1888? A. Yes.—Q. Did Mr. Gifford see that, and subsequently was there an exchange effected in which you gave him three stools of the plant that sported from G. Wermig? A. Yes.—Q. Did you at that time make a stipulation or restriction as to sending them out? A. I can't recollect.—Q. Did you subsequently sell him, in 1889, 500 new cuttings propagated from the same sport? A. Yes.—Q. You subsequently sold Mr. Hawkins twelve cuttings? A. Stools from the same sport.—A. Have you sold any cuttings from t ese except to Mr. Hawkins and Mr. Ware? A. No.—Q. Did you have a conversation with Mr. Hawkins as to the identity of these two plants? A. Yes, in

the autumn after the show; Mr. Hawkins had one bloom in the market, and he showed it to me, and I told him I had one like it. I brought one up. He said he should like some plants. Nothing further happened till I had a letter from him.—Q. Was it the same as Mr. Hawkins' plant? A. I can't say I thought it was.—Q. Didn't you restrict Mr. Ware from selling till the autumn of 1888? A. Yes.

Cross examined by Mr. GRAIN: Q. You thought you had a perfect right to tie Mr. Ware? A. Yes, for one season. I don't know about perfect right. That was what we tried to do.

Re-examined by Mr. LOEHNIS: Q. You sold some of your plants to Mr. Ware, and said, "If we sell, you are not to deal with them in the market till we permit you"? A. Yes.

Mr. JOHN LAING sworn, and examined by Mr. LOEHNIS: Q. You also had some G. Wermig plants which sported two years ago? A. Yes, in 1887.—Q. Is it your opinion that Mr. Ware's plants and Mr. Hawkins' are identical? A. Yes.

Mr. KER: Q. Should you consider it right to send it out as Mrs. Hawkins? Yes.

Mr. HENRY BILLINGHURST sworn, and examined by Mr. LOEHNIS: Q. You are a florist carrying on business at Telhurst? A. I am.—Q. You had some G. Wermig Chrysanthemums which sported with you in 1887? A. Yes.—Q. Have you grown plants from this sport?—A. Yes.

Mr. KER: Would you send them out as Mrs. Hawkins? A. If I had stock, I should not think I was doing wrong.

Mr. JOHN MAUDLIN sworn, and examined by Mr. LOEHNIS: Q. You carry on business at The Gardens, Finsbury Park, and have had some thirty years' experience as a nurseryman and Chrysanthemum grower? A. Yes.—Q. You were a member of the Floral Committee which awarded the Certificate for Mrs. Hawkins? A. Yes.—Q. Did you see the flowers together? A. Yes.—Q. Did you form a judgment that they were the same variety? A. Mr. Hawkins' plant was grown better than Mr. Ware's. With that exception they were the same.—Q. Is there anything to prevent Mr. Ware selling his plant under the name of Mrs. Hawkins, or how and where he pleases? A. I should think not.

Mr. FREDERICK GIFFORD sworn, and examined by Mr. LOEHNIS: Q. You reside at Tottenham, and have been in the employment of the defendant for some ten years as his foreman in the florist flowering department, of which Chrysanthemums are one of the principal sections? A. Yes.—Q. Did you in January, 1888, obtain three stools for Mr. Heath? A. Yes, in January or February.—Q. Was there an arrangement come to at that time between you and Mr. Heath that you were not to send out any plants you propagated till you had his permission? A. Yes, that permission was removed after October last year.—Q. From these stools you propagated some plants during 1888? A. Yes.—Q. About how many? A. Forty or fifty.—Q. You exhibited at the National Chrysanthemum Show in September, 1888? A. Yes. Three of these plants.—Q. What was their condition? A. They were not fully expanded.—Q. Did you exhibit at the same time as Mr, Hawkins? A. Yes.—Q. In your judgment, were the plants identical? A. Yes. I examined them, and came to the conclusion they were the same. . . . .

By Mr. KER: Q. Did you know of any other sport of the same nature before you saw it at the Aquarium Show? A. No.

Mr. FRANCIS FELL sworn, and examined by Mr. LOEHNIS: Q. You are the principal manager of Mr. Ware's business, and are the gentleman who prepared these circulars? A. Yes.

Cross-examined by Mr. GRAIN: Q. Were you present at the National Chrysanthemum Show in September, 1888? A. No. Mr. Ware was, and the last witness.—Q. I suppose they reported to you what they had seen there; that Mr. Hawkins had obtained a Certificate? A. Exactly.—Q. Did you give any advice to Mr. Ware as to buying Mr. Hawkins' stock? A. We talked it over.—Q. Why? A. We were not aware of any other sport at the time, and if we got Mr. Hawkins' stock we could control the sale of the entire variety.—Q. You know Mr. Ware did go to Mr. Hawkins? A. I did not go with him. He told me they had not succeeded in finally arranging, and that Hawkins & Bennett would write their decision by letter.—Q. That circular would be prepared in January? [Circular produced]. A. Yes.—Q. I suppose you had this 1st prize when drawing up the circular? A. I knew we had received it.—Q. Why did you insert Mrs. Hawkins underneath? A. To show the public that the illustration above represented Mrs Hawkins.—Q. Did it not allude to the plant itself? A. I did not intend such a construction to be put upon it by the public.—Q. Early flowering Chrysanthemums [quoting from first paragraph of circular]. Is this an early flowering one?. A. It is.—Q. I was awarded 1st prize at the exhibition of the National Chrysanthemum Society held at the Royal Aquarium, in September last. You say you allude to this? [Certificate produced to witness]. A. I did, and to that only.—Q. What have cut flowers to do with early flowering Chrysanthemums and new sorts? A. To attract the public.—Q. How many had you in stock when you could not purchase Mr. Hawkins'. stock? A. I should say about fifty.—Q. Have you ever done such a thing before as selling in this way? A. Yes; in the case of a Chrysanthemum called Mrs. H. J. Jones.—Q. Was that the only one? A. Yes.—Q. Did you make an arrangement with anyone? A. We had bought the stock of Mrs. H. J. Jones from another firm. It did not sport with us.—Q. Did you draw up this yellow circular? A. Yes.—Q. Why did you alter the name to Golden Fleece? A. After these proceedings commenced I did so, and purely out of deference to the expressed wish of Mr. Ware.—Q. In the first circular you say, "It was awarded a First-class Certificate at the exhibition of the National Chrysanthemum Society held at the Royal Aquarium in September last." These words you caused to be published? A. Yes.—Q. Do you say it did not refer to Mr. Hawkins' plant? A. Not at all.

Re-examined by Mr. LOEHNIS: Q. Have you sold plants that other people have had Certificates awarded them? A. Yes.—Q. Were you awarded a First-class Certificate for Agnes Flight, page 9 of Catalogue? A. No.—Q. Edwin Molyneux? Have these Certificates been awarded to you? A. No.—Q. Carl Lawrence? A. No.—Q. Is it the ordinary thing to advertise and sell them in the names in which Certificates have been awarded? A. Yes.—Q. Can you tell the gross amount you have received for the sale of your plant? A. £26 0s. 9d.

Mr. THOMAS S. WARE sworn, and examined by Mr. LOEHNIS: Q. You are the defendant in this action, and carry on business at Hale Farm Nurseries, Tottenham, and have been a Chrysanthemum grower for twenty years? A. Yes.—Q. You have a very large trade, and have obtained many Certificates and prizes for exhibits? A. Yes.—Q. These circulars were prepared by your instructions? A. Yes.—Q. You obtained a First-class prize for a collection of plants? A. Yes.—Q. Were you present at the show on the 12th of September, when this Certificate was awarded to Mr. Hawkins? A. Yes.—Q. Did you, after the show, have a conversation with Mr. Hawkins? A. Yes.—Q. Did you at that time know of any other sports being in the market of that variety? A. No.—Q. What conversation took place between you and Mr. Hawkins at the show? A. I approached Mr. Hawkins in the usual way, and desired to have the first offer if he desired to sell; he did not agree to come to any arrangement that day.—Q. Then a letter passed between you, and you went to see him? A. Yes. I met him in the usual way, and chatted it out. I ultimately offered him £10 for his stock of Chrysanthemums.—Q. If you had got his stock it would have controlled the market? A. Yes. Mr. Hawkins declined my offer. I certainly told him that if I failed to complete the arrangement with him I would send mine out.—Q. Did you then ask him when he would send his out? A. I am not sure; then he wrote and told me he was going to send out in the spring of the year.—Q. If a plant has got a Certificate under a certain name, what is the proper course for others to adopt who have the same plant? A. The plant is to be sold under the name of the one certificated.—Q. Has a person any right to prevent the other? A. Certainly not.—Q. You have made an alteration in your catalogue in changing the name of your plant to Golden Fleece? A. It was about the time Mr. Fell went down to see Mr. Hawkins. I cannot tell you my motive. It was just at the moment I said so, to please Mr. Hawkins.—Q. And if altered you could not state this flower had a First-class Certificate awarded to it? A. Certainly; the first was nothing to do with that.

Cross-examined by Mr. GRAIN: Q. Why did you go and negotiate with Mr. Hawkins? A. I desired to buy the plant.—Q. When he did not agree to your price you said, "I shall advertise my variety?" A. Yes.—Q. Using the name of Mrs. Hawkins? A. Yes.—Q. You knew Mrs. Hawkins would give it some extra value? A. Yes.—Q. Do you mean to say that the Certificate given to him in September last at the show was just as good as given to you? A. Just the same thing.

By Mr. KER: Q. Did you form the opinion at the exhibition that the plants were of the same variety? A. It has been my opinion on all occasions.

The following is an extract from the Award of the Arbitrators:—"We do award and certify that the plaintiffs' and defendant's Chrysanthemums, the subject of this action, are identical; that the plaintiffs are not entitled to any damages for the user of the name, title, or description, 'Mrs. Hawkins,' as applied to a Chrysanthemum plant for which the plaintiffs were awarded two First-class Certificates of Merit in September, 1888; and we award that the plaintiffs pay the whole costs of the action up to the date of the Order of Reference, dated the 22nd day of August, 1889; and we further award that the whole of the costs of the arbitration and award be borne in equal moieties by the said plaintiffs and defendant respectively."

MARKETS.

COVENT GARDEN, September 19.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

TRADE very quiet; no alteration. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0
Asters, per dozen	3 0	6 0
Begonias, dozen	4 0	12 0
Cyperus, per dozen	4 0	12 0
Dracæna terminalis, per dozen	30 0	60 0
— viridis, per doz.	12 0	24 0
Euonymus, in var., per dozen	6 0	18 0
Evergreens, in var., per dozen	6 0	24 0
Ferns, in var., doz.	4 0	18 0
Ficus elastica, each	1 6	7 0
Foliage plants, various, each	2 0	10 0
Fuchsias, dozen	3 0	6 0
Hydrangea, per doz.	9 0	18 0
Lilium lancifolium, per dozen	12 0	24 0
Marguerites, doz.	6 0	12 0
Mignonette, doz.	3 0	6 0
Palms in var., each	2 6	21 0
Pelargoniums, scarlet, per dozen	2 0	4 0
Solanums, per dozen	6 0	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0
Asters, English, bun.	2 0	4 0
Bouvardias, per bun.	0 6	0 9
Carnations, 12 bun.	4 0	9 0
— 12 blooms	1 0	2 0
Chrysanth., 12 bun.	2 0	4 0
Chrysanth., 12 blms.	0 6	3 0
Cornflowers, 12 bun.	1 0	3 0
Dahlias, 12 bun.	2 0	4 0
Eucharis, per dozen	2 0	4 0
Gaillardias, 12 bun.	2 0	4 0
Gardenias, 12 blooms	2 0	4 0
Gladioli, 12 bun.	6 0	12 0
— 12 sprays	1 0	1 6
Heliotropes, 12 spr.	0 3	0 6
Lilium, various, 12 blooms	1 0	5 0
Marguerites, 12 bun.	3 0	6 0
Maiden Hair Fern, 12 bun.	4 0	9 0
Mignonette, 12 bun.	1 0	4 0
Pansies, 12 bun.	1 0	2 0
Pelargoniums, 12 spr.	0 6	1 0
— scarlet, 12 spr.	0 3	0 6
Primulas, double, 12 sprays	0 9	1 0
Roses, Tea, per doz.	0 6	1 6
— coloured, dozen.	2 0	4 0
— red, per dozen	0 4	1 0
— Safrano, dozen	0 6	1 0
Stephanotis, 12 spr.	2 0	4 0
Sunflowers, various, per 12 bun.	3 0	6 0
Sweet Sultan, 12 bun.	3 0	4 0
Sweet Peas, 12 bun	2 0	4 0
Tuberoses, 12 blms.	0 4	1 0

Orchid bloom in variety, fairly good supply.

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Apples, ½-sieve	1 6	5 6
Filberts, per lb.	0 10	—
Grapes, per lb.	0 6	2 6
Lemons, per case	12 0	21 0
Peaches, per doz.	2 0	8 0
Pine-apples, Eng., lb.	1 6	3 0
— St. Michael, each	2 0	6 0
Plums, ½-sieve	2 6	5 0

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Beans, Fr., per lb.	0 4	—
Beet, red, per dozen	1 0	2 0
Carrots, per bunch	0 6	—
Cauliflowers, each	0 3	—
Celery, per bundle	1 6	2 0
Cucumbers, each	0 6	0 9
Endive, per dozen	2 0	—
Green Mint, bunch	0 4	—
Herbs, per bunch	0 4	—
Leeks, per bunch	0 3	—
Lettuce, per dozen	1 6	—
Mushrooms, punnet	2 0	—
Mustard and Cress, punnet	0 4	—
Onions, per bunch	0 5	—
Parsley, per bunch	0 4	—
Peas, per quart	1 3	—
Shallots, per lb.	0 6	—
Spinach, per bushel	2 6	—
Tomatos, per lb.	0 9	—
Turnips, per bunch, new	0 5	—

POTATOS are arriving in much better condition. Trade is nominally about the same as previously reported. *J. B. Thomas.*

SEEDS.

LONDON: *Sept.* 18.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report to-day's market thinly attended with but a small amount of business passing. For Trifolium the sowing demand is falling off. Winter Tares of choice quality can now be bought at very low rates. Sowing Rye is also most abundant and cheap. There is nothing doing in Clover seeds: very moderate quotations all round are expected. Bird seeds are without alteration. Mustard and Rape seed keep steady. For Blue Peas the trade is dull.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended September 14:—Wheat, 30*s.* 2*d.*; Barley, 28*s.* 10*d.*; Oats, 17*s.* 11*d.* For the corresponding week in 1888:—Wheat, 38*s.* 1*d.*; Barley, 29*s.* 9*d.* Oats, 18*s.* 9*d.*

FRUITS AND VEGETABLES.

SPITALFIELDS: *Sept.* 18.—English Apples, 2*s.* 5*d.* to 6*s.* per bushel; Pears, 3*s.* to 4*s.* per half-sieve; Plums: Victorias, 2*s.* 9*d.* to 3*s.* do.; Orleans, 3*s.* 6*d.* to 4*s.* do.; Damsons, 2*s.* 9*d.* to 3*s.* 3*d.* do.; English Tomatos, 3*s.* to 6*s.* per 12 lb.; foreign do., 9*d.* to 1*s.* 9*d.* per box; Cabbages, 1*s.* to 2*s.* 6*d.* per tally; Cauliflowers, 3*s.* to 6*s.* do.; Radishes, 2*s.* to 2*s.* 6*d.* do.; Spinach, 1*s.* to 1*s.* 6*d.* per bushel; Brussels Sprouts, 2*s.* to 2*s.* 3*d.* per half-sieve; Scarlet Beans, 1*s.* to 1*s.* 6*d.* per bushel; Vegetable Marrows, 1*s.* 6*d.* to 2*s.* 6*d.* per tally; Seakale, 1*s.* to 1*s.* 3*d.* per punnet; Greens, 9*d.* to 1*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; do., 25*s.* to 32*s.* 6*d.* per ton; Onions, 2*s.* to 3*s.* per dozen bunches; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* to 1*s.* 6*d.* do.; Horse Radish, 1*s.* 2*d.* to 1*s.* 3*d.* per bundle; Celery, 4*d.* to 1*s.* do.; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 8*d.* to 1*s.* per score; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Leeks, 1*s.* 6*d.* to 2*s.* per dozen; English Onions, 4*s.* to 4*s.* 6*d.* per cwt.; Belgian Onions, 3*s.* 3*d.* to 3*s.* 6*d.* per bag; Spanish Onions, 5*s.* 6*d.* to 6*s.* per case; frame Cucumbers, 1*s.* to 2*s.* per dozen; natural do., 4*d.* to 6*d.* do.; Beetroots, 4*d.* to 6*d.* per dozen.

STRATFORD: *Sept.* 17.—The market has been well supplied with all kinds of produce during the past week, and with a good attendance of buyers a brisk trade was done, as under:—Cauliflowers, 2*s.* to 5*s.* per tally; Carrots, household, 30*s.* to 45*s.* per ton; do., cattle feeding, 25*s.* to 30*s.*, do.; Mangels, 18*s.* to 22*s.*, do.; Swedes, 18*s.* to 22*s.* do.; Onions, Dutch, 3*s.* 9*d.* to 4*s.* per bag; do., 6*s.* 6*d.* per case; Apples, 3*s.* 6*d.* to 6*s.* per bushel; Pears, 5*s.* to 7*s.* do.; Damsons, 3*s.* 6*d.* to 4*s.* per half-sieve; Plums, 4*s.* to 5*s.* do.; Tomatos, 3*s.* per doz. lb.; Cucumbers, frame, 2*s.* to 3*s.* per dozen; Horseradish, 1*s.* to 1*s.* 3*d.* per bundle; Cocoa-nuts, 1*s.* 6*d.* per dozen; Blackberries, 2*s.* per basket; Beetroots, 9*d.* per dozen; Walnuts, 3*s.* to 4*s.* 6*d.* per prickle; do., 8*s.* to 9*s.* 6*d.* per bag.

POTATOS.

BOROUGH AND SPITALFIELDS: *Sept.* 17.—Large supplies by water and rail. Demand not very fast, and prices easier. Early Rose, 50*s.* to 65*s.*; Regents, 60*s.* to 80*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 60*s.* to 80*s.* per ton.

SPITALFIELDS: *Sept.* 18.—Quotations:—Magnums, 40*s.* to 60*s.*; Regents, 50*s.* to 65*s.*; Imperators, 40*s.* to 60*s.*; Hebrons, 55*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.* per ton.

STRATFORD: *Sept.* 17.—Quotations:—Dark lands, 45*s.* to 55*s.*; light land do., 55*s.* to 70*s.*; Hebrons, 60*s.* to 80*s.*; Regents, 60*s.* to 70*s.* per ton.

HAY.

Averages.—The following are the averages of the prices at the various metropolitan markets during the past week:—Prime 1887 Clover, 120*s.* to 135*s.*; new, 40*s.* to 75*s.*; best old hay, 80*s.* to 100*s.*; inferior, 30*s.* to 50*s.*; straw, 20*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

INTELLIGENT READERS, *do* PLEASE NOTE *that letters relating to* ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, and not to the Editor. All communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

CHRYSANTHEMUM AND AMMONIA: *Constant Reader.* Carbonate of ammonia (smelling salts of the chemists), may be used at the rate of 1 oz. to the gallon of water. It may be used as a wash to clear plants of insects, or given at half the above strength, to the soil occasionally; if used frequently too much leaf-growth will result. Sulphate of ammonia is cheaper than the above, and is good for inert soil, or one in which there is too much vegetable matter, or is too rich in phosphates. A teaspoonful dissolved in 1 gallon of water, and applied once a week, will make the colours of the flowers brighter and richer. The foliage will be rendered greener by its use. Do not use the manure as a top-dressing.

COBÆA FLOWERS: *T. and P.* The flowers of the Cobæa scandens are perfect in every way, and they have probably refused to expand owing to too low a temperature.

COLOURED MAIZE: *H. J. C.* The colouring of the Maize has nothing to do with its juxtaposition to the Perilla.

FUNGUS ON PEAR: *I. O. W.* This is Oidium fructigenum, fully described and illustrated in *Gardeners' Chronicle* for July 11, 1885, p. 52. The example sent shows the fungus growth well developed.

GUN LICENCE: *A. B. C.* None is required if the gun is used to kill vermin in the garden, the garden being a private place.

NAMES OF FRUITS: *J. H. B. Plums:* 1, Prince Engelbert; 2, rotten; 3, Pond's Seedling; 4, Jefferson; 5, Monsieur Hatif; 6, Coe's Golden Drop.—*A. N. Jones. Pear:* Knight's Monarch. *Apples:* 1, Flower of Kent; 3, Lane's Prince Albert; 4, Reinette du Canada.—*H. Woodgate. Peach:* much bruised, may probably be Grosse Mignonne.—*A Young Head Gardener.* Cox's Emperor.—*W. Hopwood. Pear:* Bishop's Thumb.—*Chas. Hewett. Pear:* 3, Winter Nelis; *Apples:* 2, Dumelow's Seedling; 5, French Crab; others wretchedly small, and out of character.—*G. Rowbotham. Apple:* greatly resembles the Keswick Codlin; most probably a local seedling.—*C. P. & Co.* 1, Golden Noble; 2, Small's Admirable; 3, Cellini; 4, not recognised; 5, Wormsley Pippin.

NAMES OF PLANTS: *X.* 1, Lolium temulentum; 2, Holcus mollis; 3, Cynosurus cristatus; 4, Poa pratensis; 5, not recognised; 6, Festuca ovina; 7, F. rubra.—*Charles Palmer.* Berberis Darwini.—*Bunting & Sons.* 1, L. speciosum var. Melpomene; 2, L. s. var. rubrum; 3 and 4, L. s. var. album. L. speciosum is a very variable species, and a bulb which produces deep red flowers this year, may produce flowers almost white next year. *H. G.* 1, Cyrtomium Fortunei; 2, Cornus mas variegata elegantissima; 3, Polygonum cuspidatum.—*Camjee.* 1, Dendrobium nobile (good form); 2, Oncidium Schlimii; 3, Catasetum macrocarpum; 4, Tradescantia discolor.—*No letter, sent in a wooden box.* 1, Adiantum amabile; 2, A. concinnum-latum; 3, A. cuneatum var.; 4, A. æthiopicum; 5, A. capillus veneris; 6, A. hispedulum; 7, A. formosum; 8, Todea pellucida; 9, Onychium japonicum; 10, Cyrtomium falcatum.—*C. B.* 1, Adiantum tenerum; 2, Selaginella Willdenovi; 3, Senecio pulcher; 4, Dipladenia urophylla; 5, Agathaea cœlestis.—*W. T.* 1, like Acer negundo, but looks slightly different, if it is not that, send another specimen; 2, Ailanthus glandulosa.—*W. N.* 1, Cakile maritima; 2, Euphorbia paralias, good plant for fixing loose sand.—*Mungo Chapman.* 4, Nephrodium spinulosum; 5, Asplenium filix-fœmina var. laciniata; 6, Osmunda Claytoniana.—*J. J. Walton.* Apera spica-venti.—*Barr & Son.* Panicum capillare.—*H. M. E.* 1, Atriplex rosea; 2, Juncus articulatus; 3, Ranunculus Flammula.—*A. B.* Abelia rupestris.—*J. H. K.* Sweet Sultan, two vars. The Carnation is worth preserving.

PELARGONIUMS AT SHOWS: *J. O.* The schedule is at fault, for by its not stating how many trusses of a variety should be shown, the matter was capable of being interpreted variously.

KNEE HOLM: *Inquirer.* A name for the Butcher's Broom, Ruscus aculeatus.

STRAWBERRY: *W. M.* The heart of the plant is eaten away, probably by the grub of a weevil, or some other insect. It had escaped when the plant reached us. Shift the plants away from the place, and look out sharply for weevils by night.

TOMATOS: *A. G.* We should say that the hollowness of the fruits is characteristic of your strain of the variety. You say that other varieties growing with it do not show it.

CATALOGUES RECEIVED.

BARR & SON, King Street, Covent Garden, London, W.C.—Daffodils and other Bulbs, &c.

ARTHUR ROBINSON, 8, Leadenhall Street, London—Dutch Bulbs.

W. DRUMMOND & SONS, 58, Dawson Street, Dublin—Dutch Flower Roots.

HOOPER & Co., Covent Garden, London—Bulbs.

T. SMITH, Daisy Hill Nursery, Newry—New and Scarce Hardy Plants (Supplement).

RICHARD BARKER & Co., Frampton, Boston, Lincolnshire—Narcissi and other Bulbs.

DANIELS BROS., Norwich—Dutch Flower Roots.

DAMMAN & Co., San Giovanni a Teduccio, near Naples, Italy—Seeds (Wholesale).

WM. RUMSEY, Joyning's Nurseries, Waltham Cross, N.—Roses, Trees, &c.

MILL & TWEEDIE, Truro—Roses, &c.

J. R. BECKWITH, 34, Guildford Street, Leeds—Dutch Bulbs.

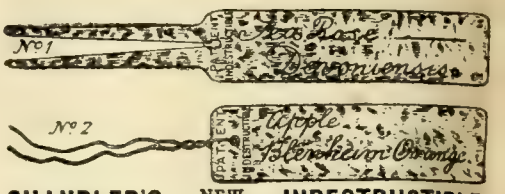
STUART & MEIN, Kelso, N.B.—Dutch Bulbs, &c.

COMMUNICATIONS RECEIVED.—W. C.—W W.—W. H.—N. E. B.—*Journal of Horticulture.*—S. H.—F. R.—H. M.—P. S.—R. A. R.—H. Evershed.—J. D.—Mawson Bros.—J. P. & Sons.—W. Gilbert.—W. H. D.—J. R, Paris.—C. S.—H. J. G., Utrecht.—Mr. Heath.—R. B. & Co.—C. S. S.—F. C.—G. B.—B. J.—W. T., Rugby.—B. R.—G. T. M.—G. D.—G. W.—M. D.—Tokvs.—W. E. D.—H. C., Geneva.—L. P., Chatenay.—E. P., Paris.—R. W. A., Natal.—X. Y. Z. —and sender of fruit from Tollesbury, no letter (next week).

☞ *Correspondents sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect in all cases to obtain an answer to their enquiries in the current week.*

DIED.—On Saturday last, at Chad Valley, Edgbaston, Birmingham, ELIZABETH, wife of R. H. VERTEGANS, aged 61. Mrs. Vertegans has been ailing for some time past, but her death was quite unexpected. To many of her friends (and not a few are among the readers of the *Gardeners' Chronicle*) this announcement will come as a shock; her loss will be deplored by all who knew her.

DASYLIRION GLAUCUM. — The Dasylirons are grown chiefly for their foliage, which is grass-like and elegant. Large plants, with good heads, are especially useful for conservatories, or for placing outside on terraces, &c., in summer. They do not often flower, and when they do their flowers are inconspicuous and without beauty. Within the last ten years, three plants of this species have flowered at Kew, one of them male and two female. One of the latter has a stem is 4 feet high, with a fine head of leaves 4 feet through, and a flower-spike 10 feet long, the upper half clothed with numerous erect branchlets of purplish-brown flowers. Unlike the majority of Agaves, Fourcrozas, Doryanthes, &c. The Dasylirions do not die immediately after flowering. The genus includes some highly ornamental plants which are specialy adapted for large greenhouses. The best of them are D. longifolium, D. acrotrichum, D. graminifolium, and that above described.



CHANDLER'S NEW PATENT INDESTRUCTIBLE COPPER LABEL,

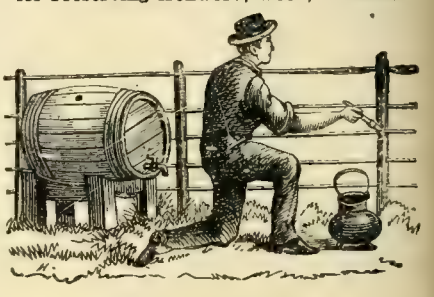
For Roses, Trees, Plants, &c. This new Label is made of prepared copper, extremely thin and pliable. The name of the plant is to be written (indented) with an ordinary black lead pencil, pressing somewhat heavily, and holding the label on the flat surface of a pocket-book. The inscription thus made is imperishable. A little white-lead rubbed on the face of the Label before writing, will make the name more conspicuous.

Prices, No. 1, as above, for Roses, Trees, Shrubs, and Fruits 5*s.* per gross, 6*d.* per doz.; No. 2, as above, 6*s.* per gross, 7*d.* per doz.; No. 3, Pointed for Pots, Borders, and Beds, 6*s.* per gross, 7*d.* per doz.—Supplied by all Nursery and Seedsmen, or can be had direct from Messrs. CURTIS, SANFORD, AND CO., Devon Rosery, Torquay. Price of Postage, 3*d.* per gross extra.

HILL & SMITH'S

BLACK VARNISH

for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1*s.* 6*d.* per gallon at the manufactory, or carriage-paid to any railway station, 1*s.* 8*d.* per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

HILL & SMITH,

Brierley Ironworks, Dudley;
118, Queen Victoria Street, London, E.C.;
47, Dawson Street, Dublin.

HORTICULTURAL GLASS

STOCK SIZES		SIZES	
Inches.		Inches.	
14×12		20×15	
16×12		20×16	
18×12		22×16	
20×12		24×16	
16×14		20×18	
18×14		22×18	
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21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.

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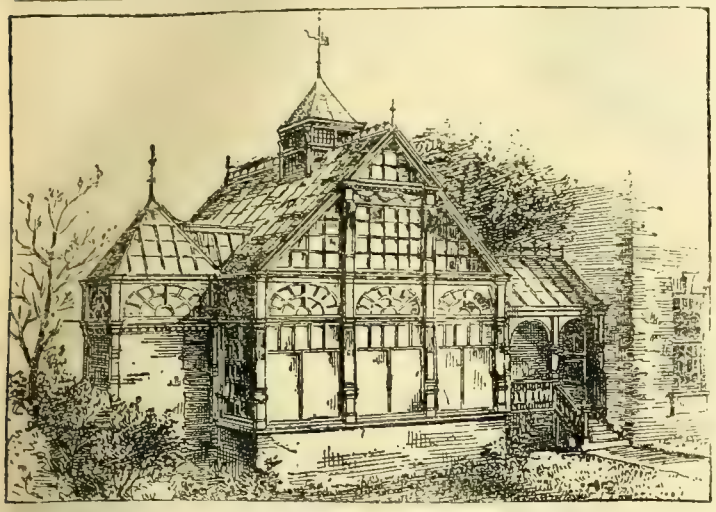
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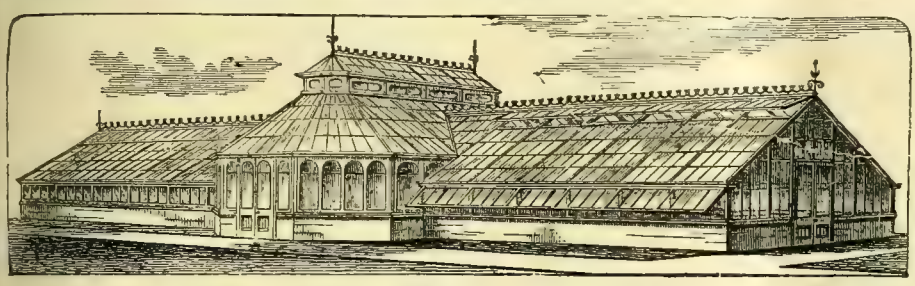
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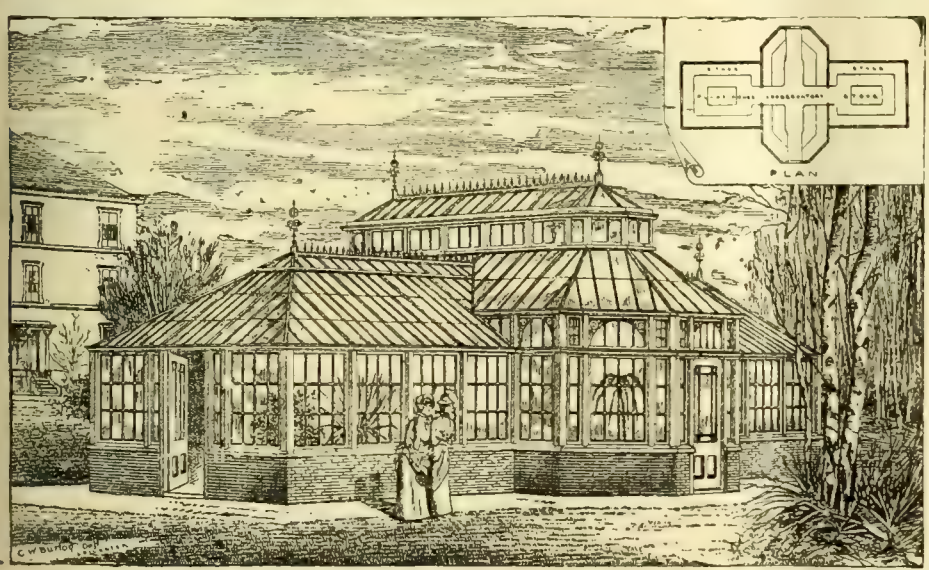
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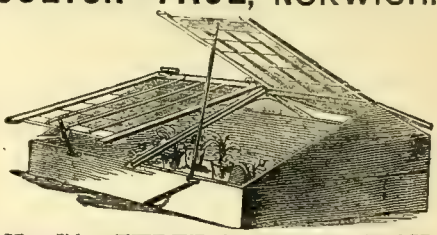
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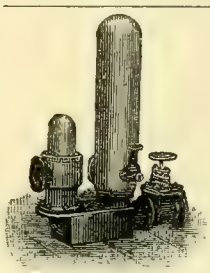


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1 Light	Frame,	4 ft.	by 6 ft.	Cash Prices, Carriage and Packing FREE.	£2 15 0
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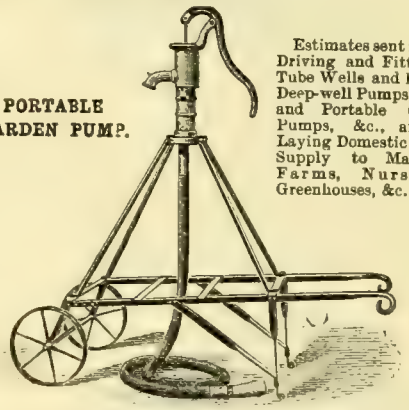
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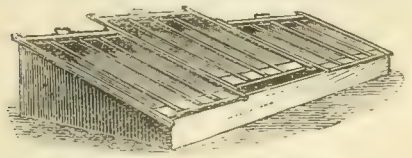
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1-Light Frame	... 4 ft. by 6 ft.	CASH PRICES	£2	0 0
2 „ „	... 8 ft. by 6 ft.		3	0 0
3 „ „	... 12 ft. by 6 ft.	CARRIAGE AND	4	5 0
4 „ „	... 16 ft. by 6 ft.		5	10 0
5 „ „	... 20 ft. by 6 ft.	PACKING FREE.	6	15 0
6 „ „	... 24 ft. by 6 ft.		8	0 0

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See Testimonial, selected from hundreds:—

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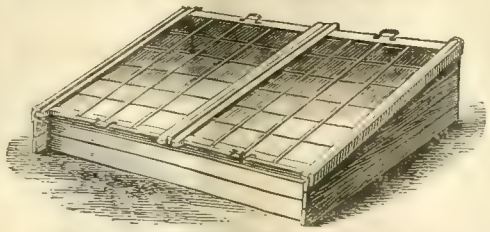
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PORTABLE CUCUMBER FRAMES.

R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.

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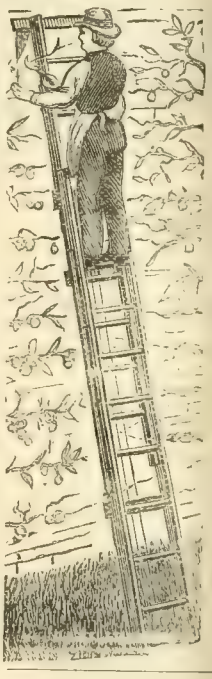
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WANTED, a WORKING FOREMAN, for Branch Nursery; married man preferred. Also CLERK, for Seed Trade.—Apply, with testimonials, stating salary expected, to D 76, *Scotsman* Office, Edinburgh.

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GARDENING APPOINTMENTS.

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Mr. A. G. HOOKINGS, for the past three years Head Gardener to Sir HENRY THOMPSON, Hurst Side, West Moulsey, has been engaged as Gardener to S. W. GRAYSTONE, Esq., at the same place.

Mr. JAMES ELWORTHY, has been appointed Gardener to Major BROCKLEHURST, Ranksborough Hall, Langham, Oakham, Rutland.

Mr. J. JENKIN, for many years principal Foreman at The Abbey Gardens, Tresco, Scilly Isles, has succeeded the late Mr. G. D. VALLANCE as Gardener to T. A. S. DORRIEN SMITH, Esq., Tresco, Scilly.

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HEAD GARDENERS.—At the present time I can recommend several highly respectable Men, of known ability and first-class character.—THOS. BUTCHER, Seed Merchant, Croydon.

Head Gardeners.

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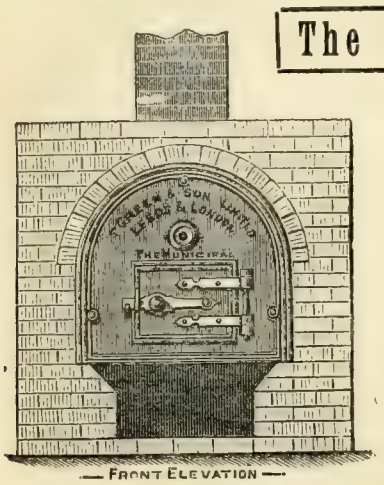
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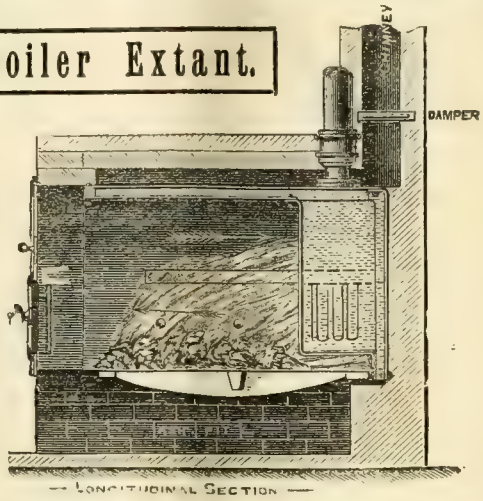
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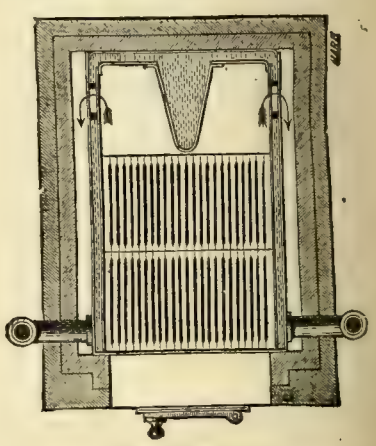
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Editorial communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C
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The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2544.

No. 144.—Vol. VI. {Third Series.} SATURDAY, SEPTEMBER 28, 1889. [Regt. as a Newspaper. {PRICE 3d. Post-Free, 3½d.

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Englefield Green.

ORCHIDS and ORCHID-HOUSES.—Without reserve.

MR. J. C. STEVENS has received instructions from Col. Deare to SELL by AUCTION, on the Premises, Englefield Green, about the MIDDLE of OCTOBER, without reserve, the Collection of ORCHIDS and other STOVE PLANTS, the GLASS-HOUSES, Hot-water PIPING, BOILERS, SLATE STAGING, &c.

For Date of Sale and further particulars, see next Advertisement.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Dutch Bulbs.

GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Gipsy Hill.

EXPIRATION of LEASE. The remaining FURNITURE of the usual description; also the whole of the STOVE and GREENHOUSE PLANTS, several fine CAMELLIAS and AZALEAS, FERNS, BEGONIAS, GARDEN FRAMES, VASES, ROLLER, two LAWN-MOWERS, and other items.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, Oakfield, The Avenue, Gipsy Hill (one minute from Gipsy Hill Station), on MONDAY, September 30, at 1 o'Clock.

On view Saturday prior, and morning of Sale. Catalogues had of the Gardener, on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

Tuesday Next.

Standard, Dwarf, and Climbing ROSES, including the best Hybrid Perpetual and Teas; choice Hardy AMERICAN PLANTS, RHODODENDRONS, and other hardy Evergreen Shrubs; ORNAMENTAL and FRUIT TREES, and a variety of choice GREENHOUSE and DECORATIVE PLANTS, CARNATIONS, PICOTEES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, October 1, at half-past 12 o'Clock.

On view morning of Sale. Catalogues had at the rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

SPECIAL SALE OF LILIES.

6,000 Lilium auratum, splendid Bulbs (some of the finest ever offered), just received from Japan, being the first consignment this season, also several thousands of Ferns. Lilies from the stock which has been awarded so many prizes and silver medal during the past season, including 2,000 Lilium rubrum cruentum, 1,600 Lilium album Kroetzeri, 5,500 Lilium longiflorum, grand bulbs, 200 Lilium auratum rubro vittatum and virginale, tigrinum, eximium, elegans, &c.

MESSRS PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 1, at half-past 11 o'Clock precisely.

On view morning of Sale and Catalogues had.

Wednesday Next.

250 AZALEA INDICA, 300 FICUS ELASTICA, FERNS, and other Plants from Holland; also 400 lots of DUTCH BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, October 2, at half-past 11 o'Clock, without reserve.

On view morning of Sale, and Catalogues had.

N.B. The Auctioneers desire to mention that the above plants, coming from Holland, the Azaleas have not been affected by the recent severe frost that occurred in Belgium between September 15 and 16.

Beckenham.

Clearance Sale of STOVE and GREENHOUSE PLANTS, ORCHIDS, &c., by order of Mr. C. J. Goldsmith, who is giving up the gardens.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Gardens, Kelsey Manor, Beckenham (one mile from Beckenham Junction Station), on THURSDAY, October 3, at 12 o'Clock, the whole of the STOVE and GREENHOUSE PLANTS, in great variety; FERNS, a quantity of ORCHIDS, BOUVARDIAS, 1000 CHRYSANTHEMUMS, large white AZALEAS, GARDEN TOOLS, TUB WATER-CART by Bailey, &c.

May be viewed the day prior to the Sale. Catalogues had of Mr. GOLDSMITH, on the Premises; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next, October 4.

Important to the Trade and large Buyers.

500 Well-grown CATTLEYAS, by order of Mr. G. T. White, who is reluctantly compelled to offer the plants for absolute sale to avoid building this autumn.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 4, at half-past 12 o'Clock precisely, 500 well-grown established plants of CATTLEYA MENDELII, MOSSIÆ, &c., together with a fine lot of COOLHOUSE PLANTS in variety, all in flower, and for Sale without the least reserve.

On view morning of Sale, and Catalogues had.

Woking.—Expiration of Lease.

CLEARANCE SALE of 3 Acres of general NURSERY STOCK, in consequence of the Expiration of the Lease of this portion of their Nursery, by order of Messrs. T. Holdforth & Sons.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Sander's Lane Nurseries, Woking, 1 mile from Worplesden Station, on October 8 and 9, at 12 o'Clock each day, without reserve, the whole of the unusually well-grown NURSERY STOCK standing upon this portion of their Nursery, consisting of, amongst many other items, thousands of young Conifers for growing on, 3000 Rhododendrons, 1200 Thuja Lobbi, 2 to 5 feet; 2500 Aucubas, 1 foot to 2 feet; 5000 Deutzia gracilis for potting on, a large quantity of Pampas Grass, 4300 Portugal Laurels, 40,000 Berberis, 26,000 1-yr. Quick, &c.

May now be viewed. Catalogues obtained on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

Southbourne-on-Sea.

About 1½ mile from Christchurch and Boscombe Stations, and 3 miles from Bournemouth.

Important to Nurserymen, Gentlemen, and Others.

Great CLEARANCE SALE of the whole of the GREENHOUSE PLANTS, NURSERY STOCK, the WINTER GARDEN, GREENHOUSES, PIPING, HORSES, CARTS, &c., by order of the Southbourne Winter Gardens Company, who are relinquishing their business.

MESSRS. PROTHEROE AND MORRIS (in conjunction with Messrs. McEWAN, BROWN, and WYATT) are instructed to SELL by AUCTION, on the respective Premises, on TUESDAY, October 8, and three following days, viz., on TUESDAY and WEDNESDAY, October 8 and 9, at The Winter Garden, Southbourne-on-Sea, on THURSDAY, October 10, at the Boscombe Nursery, Boscombe, and on FRIDAY, October 11, at the Nursery, Christchurch, at half-past 12 o'Clock precisely each day, the whole of the extensive stock of STOVE and GREENHOUSE PLANTS, being the contents of 20 Greenhouses, including large Camellias, Ferns, Palms, and Stephanotis.

4000 Gardenias	300 Dendrobium nobile
2500 Double White Geranium (candidissima florepleno) for cutting	3000 White Chrysanthemums
	2300 Arum Lilies
	500 Azaleas

double white Primulas, Vallotas, Pearl Tuberoses, &c. The erection of the span-roof Winter Garden, 200 feet in length; four Greenhouses, several boilers, 2,000 feet of 4-inch hot-water piping, also the out-door Nursery Stock of the Boscombe and Christchurch Nurseries, comprising 12,000 common Laurels, 3 to 4 feet, 2,000 other Laurels, large quantities of various Conifers, 50,000 Asparagus; the erection of Show-house and piping at the Boscombe Nursery; the whole of the Farm Implements, three Cart Horses, Carts, Waggon, Harness, Rollers, corrugated iron, and numerous other items. May be viewed one week prior to the Sale.

Catalogues obtained at the respective Nurseries, of Messrs. McEwan, Brown & Wyatt, Auctioneers and Estate Agents, Bournemouth, and of Messrs. Protheroe & Morris, Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

N.B. Conveyances will meet the 11.57 a.m. train from London at Christchurch Station, on October 8 and 9, to convey intending purchasers to the Southbourne Winter Garden.

Borrowash, near Derby.

Important to Noblemen, Gentlemen, and Others desirous of obtaining beautifully grown specimen CONIFERS for which this Nursery has so long been noted.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. Barron & Son to SELL by AUCTION on the Premises, the Elvaston Nurseries, Borrowash, near Derby, close to the Borrowash Station, on WEDNESDAY and THURSDAY, October 9 and 10, at 11 o'Clock precisely each day, a large quantity of beautifully-grown NURSERY STOCK, carefully prepared for removal, including a great variety of choice and rare specimen CONIFERS, large ornamental Deciduous Trees, for park or street planting; many thousands of various Trees and strong Quick, and a variety of Greenhouse Plants, Ferns, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be obtained at the Nurseries; at Messrs. BARRON AND SON'S late Seed Shop, 16, Market Street, Nottingham; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Hayward's Heath.

About 1 Mile from the Railway Station.

SALE of well-grown NURSERY STOCK, the ground being required for other purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Banks to SELL by AUCTION, on the Premises, Bank's Nursery, Hayward's Heath, on THURSDAY, October 10, at 12 o'Clock precisely, a large quantity of well-grown NURSERY STOCK, carefully transplanted, and now in capital condition for removal, including a choice assortment of Conifers and Evergreens, 800 American Arbor-vitæ, 4 feet to 8 feet; 1000 Green Hollies, 2 feet to 4 feet; 4000 Common and other Laurels, 1½ foot to 5 feet; 7000 extra strong Quick, 900 Golden Euonymus, in pots; Standard Ornamental Trees, 5000 Gooseberries and Currants, fine bushes; 3000 Raspberries, Laxton's Noble Strawberries, and others. Also a strong, spring, Market Van.

May now be viewed. Catalogues obtained on the premises, and of the Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

Leamington.

CLEARANCE SALE of NURSERY STOCK, GREENHOUSE PLANTS, GLASS ERECTIONS, &c., by order of Messrs. Wills & Son, who are retiring from the Business.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, Milverton, Leamington, adjoining the Milverton Station, L. & N. W. Ry., on FRIDAY, October 11, at 12 o'Clock precisely, without reserve, the whole of the well known NURSERY STOCK, including a great variety of Border Shrubs, Specimen Cedrus deodara, Hardy Ferns in variety, 3000 Herbaceous Plants; Greenhouse Plants, consisting of Ferns, Epacris, Heaths, Camellias, &c.; Succulent Plants, the ERECTIONS of 5 GREENHOUSES, PITS, HOT-WATER PIPING, BOILERS, BRICKWORK, TOOLS, 2 LAWN-MOWERS, and other Effects.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Sunningdale.

WITHOUT RESERVE.

Six days' absolute CLEARANCE SALE of 30 Acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who has unexpectedly received from St. John's College, Cambridge, peremptory notice to quit all lands held under them. Important to Noblemen, Gentlemen, Builders, Nurserymen, and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, close to the Sunningdale Railway Station, on MONDAY, October 14, and five following days, at 12 o'Clock precisely each day, without the least reserve, about 30 acres of beautifully-grown NURSERY STOCK, carefully prepared for removal, including 30,000 Rhododendrons, 1 foot to 7 feet, many of them handsome specimens of the best-named kinds; and 1000 Standard Rhododendrons of the finest named varieties, the whole comprising such a stock probably never before offered by Auction; 50,000 Laurels, of sorts, 1 foot to 4 feet; 100,000 Conifers in various sizes, including many fine specimens; Aucubas, several thousands of Ornamental Trees, particularly suitable for Avenue, Park, or Street planting; a very fine collection of 5000 Standard and Pyramid Fruit Trees, 5000 named Gooseberries, thousands of American Plants, 50,000 Berberis for cover planting, and other Stock.

May be viewed any day, Sunday excepted, prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Land Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Luncheon will be provided for intending purchasers, and arrangements can be made with Mr. Noble to lift and forward any lots to all parts of the kingdom, in respect of labour incurred and material used.

The Salisbury Road and Avenue Nursery, Willesden LANE, N.W.

Large quantity of GENERAL NURSERY STOCK, and 15,000 PALMS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. B. Goubert, to SELL by AUCTION, on the Premises, on TUESDAY and WEDNESDAY, October 15 and 16, at 12 o'Clock each day, a large quantity of GENERAL NURSERY STOCK, including 3000 Border Shrubs, 5000 Golden Euonymus, 1000 large Green Euonymus, and 15,000 beautifully grown PALMS, including 6000 Corypha Australis, 5000 Latania Borbonica, and others.

May be viewed. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Isleworth.

SPECIAL ANNUAL TRADE SALE of thousands of beautifully grown Golden EUONYMUS and young CONIFERS, for immediate potting, window boxes, or for growing on, by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, on MONDAY, October 21, at 12 o'Clock, 5000 of the best Silver and Golden EUONYMUS, splendidly coloured; 1000 AUCUBAS, 1 foot to 3 feet; 500 AZALEA MOLLIS; 1000 Standard Apples, of the best sorts; thousands of various CONIFERS for potting and planting out.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises; at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Preliminary Notice.

The well-known Collection of ESTABLISHED ORCHIDS, formed by the late C. J. Partington, Esq., of Heaton House, Cheshunt, and including undoubtedly the finest lot of Phalænopsis that has been offered for many years.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to prepare for SALE by AUCTION, on OCTOBER 22 and 23, the above well-known Collection of ESTABLISHED ORCHIDS, including an exceptionally fine lot of Phalænopsis, the whole of the plants being remarkably well grown, and in excellent condition. The Collection also includes a very fine batch of Cattleya Mendelii, five plants of C. Gaskelliana alba, C. Mossiæ, a splendid lot of Masdevallias, and others.

Further particulars will appear in future announcements. Catalogues are now in course of preparation.

67 and 68, Cheapside, E.C.

Exeter.

SIX DAYS UNRESERVED SALE of particularly well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co., who are relinquishing the business, to SELL by AUCTION, on the Premises, the Exeter Nursery, Exeter, on MONDAY, October 28, and five following days, at half-past 12 o'Clock precisely each day, without the slightest reserve, the First Portion of the extensive NURSERY STOCK, presenting to Gentlemen and the Trade largely engaged in planting, a splendid opportunity of securing acres of well-assorted and thriving young stock; also 15,000 GREENHOUSE PLANTS, including 3,000 well-grown Ericas, 1,500 Camellias and Azaleas, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

American Nurseries, Bagshot, Surrey.

PRELIMINARY NOTICE.

EXTENSIVE SALE of SURPLUS NURSERY STOCK. Highly important to the Trade and Gentlemen engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Waterer & Sons to SELL by AUCTION, on the Premises, the American Nurseries, Bagshot, Surrey, EARLY in NOVEMBER, an unusually large quantity of attractive NURSERY STOCK, in grand condition for removal.

Full particulars will be announced shortly.

Eltham.

GREAT UNRESERVED CLEARANCE SALE of over 20 Acres of remarkably well grown and thriving NURSERY STOCK, by order of Mr. Todman, in consequence of the expiration of the Leases, to be Sold by

MESSRS. PROTHEROE AND MORRIS, on the Premises of the Eltham Nursery, Eltham, Kent, ¼ mile from the Eltham Railway Station, on MONDAY, November 18, 1889, and following days, at 12 o'Clock punctually each day, without reserve, the whole of the unusually well grown NURSERY STOCK, extending over 20 Acres, now in excellent condition for removal.

Fuller particulars will appear in due course.

Nursery Stock Sales.

Important to Noblemen, Gentlemen, Landscape Gardeners, Builders, and others, engaged in planting during the coming season.

MESSRS. PROTHEROE AND MORRIS desire to call attention to their SALES of NURSERY STOCK, which have been fixed as follows, in addition to those advertised in this day's paper :—

OCT. 22 and 23.—At the NURSERY, Loughborough Road, Brixton, by order of Messrs. Ponsford & Son.

OCT. 24 and 25.—At the HICKMANDIA NURSERY, Knockholt, near Sevenoaks, by order of Mr. W. Dale.

OCT. 30 and 31.—At the GOLDSMITH PARK NURSERIES, Groombridge, near Tunbridge Wells, by order of Mr. E. Hollamby.

OCT. 28 and 29.—At the HARROW NURSERY, Harrow, by order of Mr. E. T. Chamberlain, who is retiring from the business, the valuable Freehold Nursery or Building Estate, and the whole of the Nursery Stock.

NOV. 1.—At the NURSERY, Upper Tooting Park, Balham, by order of Mr. J. R. Box.

NOV. 5.—At the HALE FARM NURSERIES, Tottenham, by order of Mr. T. S. Ware.

NOV. 11 and 12.—At the AMERICAN NURSERIES, Leytonstone.

Dates not yet fixed.

At the NURSERY, Manor Lane, Lee—two days' Sale.
At the NURSERIES, West Wickham—three days' Sale.
At the NURSERY, Brockley—one day's Sale.
At the NURSERY, Marsh Gate, Richmond—one day's Sale.

MESSRS. WESTON AND SON will SELL by AUCTION, at the Nurseries, Wiltshire Road, and The Grove, Brixton, on WEDNESDAY and THURSDAY, Oct. 2 and 3, at 12 o'Clock each day, the whole of the well-selected, cleanly-grown and very healthy STOCK of a NURSERYMAN and FLORIST, comprising 40,000 Stove and Greenhouse Plants, Dracæna, Adiantum, Aralia treboldii, Cordyline, Pandanus Veitchi phœnix, and other Palms and Ferns, Stove and Furnishing Plants, Azaleas, Ferns, Zuccas, assortments of 5,000 Ferns, 2,000 Forest, Fruit, and Lime Trees, Willows, Mountain Ash, 10,000 Laurels, Rhododendrons, Privets, Acacias, Laburnums, Thorns, Sycamores, Evergreens, and Deciduous Shrubs, and other varieties; Greenhouse fittings, boilers, old iron, span-roof greenhouse 12 ft. by 8 ft., garden rollers, and various effects. On view two days prior.

Catalogues of the Auctioneers, 3, 5, and 7, Angell Road, Brixton, and 252, Brixton Hill, S.W.

MR. HENRY THOMAS is instructed by the administrator of the late Honorable and Reverend J. Townshend Boscawen to SELL by AUCTION at the Rectory, Lamoran, Cornwall, on THURSDAY, October 3, 1889, the rare and valuable COLLECTION of ORCHIDS, RHODODENDRONS, CAMELLIAS, FERNS, AMARYLLIS, ROSES, DAPHNES, AZALEAS, CYCLAMENS, CACTUS, and other plants; also GARDEN FRAMES, TOOLS, FLOWER POTS, &c.

The Auctioneer desires the particular attention of Gentlemen Florists', Nurserymen, and others, to this unique sale of valuable Plants, the late proprietor having imported his Seeds, Roots, &c., from the very best sources, and exercised the greatest care in their cultivation; affording an exceptional opportunity to those desirous of acquiring rare and valuable specimens.

Catalogues to be obtained of the Auctioneer, 1, Cathedral Lane, and Tolgarrick, Truro.

Kensington, W.

CAMPDEN HOUSE NURSERY, CAMPDEN HOUSE ROAD.

MR. H. ROW has received instructions from Mr. David Ayres, to SELL, by AUCTION, on the Premises, on TUESDAY, October 15, at 2 o'Clock (unless disposed of by private treaty), the VALUABLE LEASE, having 5¾ years to run from Michælmas, 1889, at the low rent of £30 per annum, together with the GOODWILL and PLANT of that Old-established FLORIST and NURSERYMAN'S BUSINESS carried on by him for many years past, comprising several ranges of Glasshouses, Horse and Van, a large assortment of Plants, Garden Tools, and Miscellaneous Effects.

Catalogues, full particulars, and orders to View of the Auctioneer, 1A, Kensington High Street, W.

Nursery Stock.—West Wickham, Kent.

Under Bill of Sale, and by order of Trustee.

AUCTION SALE of about 40,000 well-grown FOREST and FRUIT TREES, CONIFER, AUCUBAS, specimen WELLINGTONIA, border and pot SHRUBS, about 10,000 Standard and Dwarf ROSES, &c.

MR. W. LEVENS will SELL the above, on THURSDAY, October 31, 1889, and two following days, at 11 for 12 o'Clock each day.

Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham; and also at 6, Kirkdale, Sydenham, S.E.

N.B. West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

Cart House Lane Nursery, Horsell.

About 2 Miles from the Woking Station on the S.W. Railway.

SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. WATERER AND SONS are instructed by Mr. Richard Collyer, to SELL by AUCTION, upon the Premises, as above, on MONDAY, October 7, and two following days, at 11 for 12 o'Clock precisely each day, the well-grown NURSERY STOCK on the above Land, comprising a great variety of very fine Ornamental Evergreen Trees and Shrubs, 3000 Variegated, Green, Standard, and other Hollies, 3 to 8 feet; 80,000 Seedling ditto, 25,000 Yews, from 2 to 7 feet; 120,000 strong 3-yr. old Quick, 2000 Spruce Fir, 3 feet; 1500 Thuja Lobbii, from 4 to 7 feet; Cupressus Lawsoniana and erecta, Thujopsis picea, Retinospora, Aucuba, Laurels, Privet, Rhododendrons, Deutzia, Weigela syringa, Double Scarlet Thorns, and other flowering Shrubs. Forest Trees, Fruit Trees.

The Auctioneers draw the special attention of Purchasers requiring plants for ornamental and other purposes, to this Sale, the whole of the Stock, including the fine Specimen Trees and Shrubs, being well-rooted and in perfect condition for removal, having all been moved within two years.

May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at either of their Offices, Chertsey, Weybridge Station, and opposite the Station Entrance, Walton-on-Thames.

GARDEN WANTED, to Lease or Buy, an acre or an acre and a half of Ground. Orchard with Cottage preferred. Not more than 40 minutes from London on either Waterloo or Victoria lines. With or without Glass.
GARDEN, 29, Ashley Place, S.W.

FOR SALE, a Plot of BUILDING LAND, with 3 Greenhouses, 100 feet each, 1 do. 25 feet; all heated with Hot water. Price for Freehold, including Stock, £400. £150 can remain at 5 per cent. Particulars of
W. WELLS, Earlswood, Redhill, Surrey.

To Florists and Others.

TO BE SOLD, FREEHOLD, adjoining the village of Old Southgate, N. The Property consists of about 4½ acres of well cultivated Land, plenty of room for glass, a Cottage with 8 rooms on same floor, and Stabling, &c.; also brick-built Cottage. Apply to owner. Price £2100.
J. WARD, 20, Newgate Street, E.C.

FOR SALE, a MANURE MANUFACTURING BUSINESS, in London. Old Established; Non-offensive. Capital opening for energetic man with £300, fond of travelling. Good connection. Every facility given to Purchaser.—Apply to AMAND AND NUNN, 27, Red Lion Square, Holborn, W.C.

TO FLORISTS.—Handsome Frontage, Green and Stovehouses at back, and large Yard, 59 by 30. Main thoroughfare, Lee, S.E. No Premium required, or Stock to be taken to. Rent, on Lease, fifteen years, £40 first year, £45 second year, and £50 for remainder.
Apply to Messrs. DYER, SON, AND HILTON, 33, Walbrook, E.C., and Blackheath (3154).

SEED and FLORIST'S BUSINESS, Old-established, in a well-known Market Town of the West of England. Rent only £40. Takings good. Satisfactory reasons for disposal. Cash required about £400.
Apply, EDWARD T. PARKER, 39, Broad Street, Bristol.

TO LET, 2½ Acres of GARDEN GROUND, well stocked with Fruit Trees, Small Shrubs, and Asparagus Beds, in rows 2000 feet in length.
H. C. NEAME, Birchington-on-Sea, Westgate-on-Sea.

TO BE LET, on Lease, about 2 acres of productive NURSERY LAND, with Stabling, Outbuildings, and about 13,500 super. feet of Glass. About 5 minutes walk from Waltham Cross Station, Great Eastern Railway. Apply to E. A. H., Queen Anne's Lodge, Waltham Cross, N.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

MARIE LOUISE VIOLETS. — Strong Clumps, ready for framework, 12s. per 100.
H. EASTY, Prospect Nursery, Sudbury, Suffolk.

Camellias, Azaleas, Rhododendrons, Palms, Orchids, &c. Plants grown specially for English use.

C. VUYLSTEKE, NURSERYMAN, Loochristy, Ghent, Belgium.
Wholesale CATALOGUE now ready, and may be had, free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

FOR SALE, 100 TEA ROSES, from 2 to 5 ft., best sorts, 2s. 6d. to 7s. 6d. each, or offer for the lot.
Stamford Hill Nursery, N.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

The New Early Dessert Apple.

COOLING'S BEAUTY OF BATH should be added to every collection. It is the best flavoured and handsomest early Apple yet introduced, and will be indispensable as an early Dessert Fruit when it becomes known. Strong Maiden Trees, 2s. 6d. each, 24s. per dozen; 2-yr. Trees, 3s. 6d. each, 36s. p. dozen; Pyramids, 5s. each; Dwarf Trained, 7s. 6d. each.
Full description in Fruit Tree LIST, free by post.
GEO. COOLING AND SONS, The Nurseries, Bath.

ARBOR-VITÆ (American), for immediate effect, 6 to 9 ft., well furnished. Will form a hedge at once.—Price on application to H. APPLEBY, Nurseryman, Dorking.

STRAWBERRY PLANTS.
NOBLE, grand plants, 10s. per 100.
A. F. BARRON, 20s. per 100.
OXONIAN (late, very fine), 4s. per 100.
PAXTON'S, NAPIER'S, and THURY'S, 4s. per 100.
Best Plants in the Trade.
R. GILBERT, High Park, Stamford.

B. MALLER AND SONS beg to offer to the Trade a very extensive and unusually well grown stock of ERICAS (hyemalis and other varieties), EPACRIS, SOLANUMS, GENISTAS, BOUVARDIAS, ADIANTUM CUNEATUM, and other Ferns, GARDENIAS, STEPHANOTIS, GREVILLEAS, TEA ROSES (in pots), BORONIA MEGASTIGMA, VINES (in pots), &c. An inspection is invited.
Trade CATALOGUES forwarded on application.
Burnt Ash Lane Nurseries, Lee, S.E.

SEEDS.—CROP 1889.
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We shall be pleased to make Special Prices for
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For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

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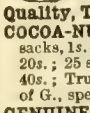
15, PRINCES STREET, EDINBURGH, *July* 15, 1887.—"Dear Sirs, I have thoroughly tested a sample of a new Insecticide which you were so good to send me. At the rate of 1 oz. to a gallon of water at a temperature of 95° I find it kills Green Fly immediately. Double this strength, or 2 oz. to a gallon at 120°, seals the fate of Scale of all sorts in a few seconds; while 3 oz. to gallon at same temperature effectually dissolves Mealy Bug, and so far as I have yet observed, without the slightest injury to leaf or flower, and it is withal a most agreeable compound to work with. All our insect remedies are applied through common syringe, or garden engine, a much severer test of efficiency than when applied by hand-washing or spray.—I remain, dear sirs, yours truly. (Signed) A. MACKENZIE," of Messrs. Methven & Sons.

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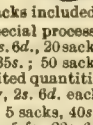
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FOR SALE, a COLLECTION of ORCHIDS, of 50 Plants, 34 different species, as follows:—Arundina bambusæfolia, Angræcum, Bulbophyllum, Calanthe, Cœlia, Cœlogyne oscellata, C. parishii, Cypripedium, Cymbidium Lowianum, Dendrobiums (chrysanthemum, densiflorum, nobile pendulum, pulchellum, and Wardianum), Eria, Gongora Loddigesi, Lycaste, Odontoglossum, Oncidium, Pholidota, Saccolabium guttatum, Stanhopea, Zygopetalum, also 2 Oberonias.—Particulars and price of C., 46, Russell Road, Kensington, W.

EVERGREENS for IMMEDIATE EFFECT.
CUPRESSUS LAWSONII, 6 to 8 feet.
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LIGUSTRUM OVALIFOLIUM, 4 to 5 feet.
THUIA OCCIDENTALIS, 5 to 6 feet, and 6 to 8 feet.
,, LOBBII, 6 to 8 feet, and 8 to 10 feet.
THUJOPSIS BOREALIS, 6 to 8 feet, and 8 to 10 feet.
YEWS, English, 5 to 6 feet, and 6 to 8 feet.
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The above have all been regularly transplanted, and are in fine condition for removal.
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White ROMAN HYACINTHS, first quality bulbs, carefully selected, 2s. 6d. per dozen; 18s. 6d. per 100.
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LILIUM HARRISII (Bermuda Easter Lily).—Our direct importation from Bermuda of this charming pure white Lily enables us to offer grand bulbs, in the best possible condition, at extraordinarily low prices. Fine selected, 7s. per dozen; 50s. per 100. Extra fine selected, 7 to 9 inches in circumference, 10s. per dozen; 75s. per 100. Potted now, will be in bloom at Christmas and the New Year.
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The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5s., post-free 5s. 6d.
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Price for thumbs per 100 or 1000, and 48's per 100 on application.
Inspection invited by
R. PENGELLY, Dyson's Lane, Upper Edmonton.

80,000 CLEMATIS, in Pots, of all the finest Double and Single Varieties (some of the flowers of which become 10 inches across, and are of every shade, from pure white to the darkest purple), for climbing and bedding, from 12s. to 24s. per dozen, strong plants; extra strong plants, repotted into 5½-inch pots, 2s 6d. each; Beauty of Worcester, a magnificent purple, excellent for bedding, recently sent out by us, reduced price 2s. 6d. each. Descriptive LIST on application.—RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.

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Trade Mark, No. 90,955.
Lodged, June 20, 1889.
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Trade Mark, No. 90,956.
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PLUMS.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.
DAMSONS FARLEIGH PROLIFIC.—Dwarf Maidens, Pyramids, Standards.
PEACHES and NECTARINES.—Dwarf Maidens, Dwarf Trained, Standards, Standard Trained.
Quantity Large.—Quality Good.—Prices Moderate.
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Fine selected bulbs, per doz., 7s. 6d.; per 100, 56s.
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IN DISTINCT SHADES OF COLOUR.
Specially selected varieties to flower at the same time, producing large trusses of bloom.
15s. to 22s. 6d. per 100.
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HYACINTHS,
TULIPS, CROCUS, NARCISSUS,
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IRIS, LILIES, PÆONIES,
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ANT. ROOZEN & SON,
NURSERYMEN,
OVERVEEN, NEAR HAARLEM, HOLLAND.

As a Supplement to the

GARDENERS' CHRONICLE

FOR

Next Week, October 5,

WILL BE

Published an Ink Photograph

Illustrative of the Flower Garden at Halton,

THE SEAT OF ALFRED DE ROTHSCHILD, ESQ.,

together with a description of the Gardens.



THE

Gardeners' Chronicle.

SATURDAY, SEPTEMBER 28, 1889.

CHRYSANTHEMUM SPORTS.

THE Chrysanthemum, of all our garden flowers, seems to be the one most disposed to "sport." The occurrence is always interesting, and always excites surprise. In reality, however, the change (we are now speaking of the Chrysanthemum only) is not very great. In most, but not in all, cases, it depends upon the non-development of a particular tint of colour in a certain bud, or in the assumption in that particular bud of a tint of colour different from that of the original plant.

We have examined very many Chrysanthemum "sports," and have only occasionally seen any greater difference than that mentioned. But the sudden change, slight though it be, is mysterious. We know something of how it happens, but the reason why eludes us. Why are particular varieties more particularly subject to it than others? Why does the same sport occur on different plants in various places, often in different countries simultaneously? This may be due to the circumstances that all the plants of a particular variety originated from a single bud, of whose qualities they partake, and from which they have all in turn been propagated.

The Chrysanthemum has been crossed and re-crossed and crossed again from time immemorial by the Chinese and the Japanese, so that the existing varieties are of very mixed blood indeed. That mixed parentage has much to do with the matter, is shown not only by the circumstance that where the breed is much mixed, sporting is common, but also by the converse fact that where the breed is comparatively unmixed, as in a China Aster, or a Chinese Primrose, sporting, in the sense of bud-variation (as distinct from seed-variation) is very uncommon. One form of sporting may, therefore, be reasonably attributed to a dissociation or unmixing of heretofore combined elements. Assuming that this is so, we are still in the dark as to the cause of the unmixing, and equally so as to the reason for its sudden manifestation. We may compare the occurrence to a change in the position of the kaleidoscope.

Turn it ever so little, and the particles of glass arrange themselves in a different pattern; but what effects the turn is in the case of the sports, at present quite enigmatical. Even Mr. W. Paul in a memorable case to which we are about to allude, asked "What is a sport?" he himself being, probably, about the best qualified person to give an answer to the question. Let the incident serve as an example of modesty!

Sports have something more than botanical interest, they are sometimes of commercial importance, and they sometimes make sport for the lawyers, as will be gathered from the lengthy report of a case which we printed in our last issue. That case is so important, that we need make no apology for reverting to it, and for recalling the principal facts.

In 1886 or 1887 a plant of G. Wermig sported with the plaintiffs, Messrs. Hawkins & Bennett, as also with Messrs. Heath & Son, Messrs. G. Laing & Son, and Mr. Billinghurst. The defendant, Mr. Ware, in 1888, procured three stools, or stock plants, from Messrs. Heath & Son in exchange for plants of a different kind. It may here be mentioned that G. Wermig is a light yellow flower, stated to have originated as a sport from the white-flowered Madame Desgrange. From the light yellow Wermig sprang a deeper yellow-coloured sport, in no fewer than four localities simultaneously, or nearly so; and this sport, named Mrs. Hawkins, it was which has given rise to the proceedings detailed in our last issue.

On September 11, 1888, the plaintiffs exhibited a plant produced from their sport as a new variety at the Royal Horticultural Society's Show under the name of Mrs. Hawkins, and obtained a First-class Certificate.

On the following day they exhibited the plant at the National Chrysanthemum Show at the Royal Aquarium. At the same time and place the defendant exhibited three of his plants, which he had produced from the plants he had obtained from Messrs. Heath & Son, and which he intended to name Golden Fleece. One of these plants was staged with the plaintiffs' plant before the Floral Committee of the Chrysanthemum Society, but the Certificate was, according to Rule 5 of the regulations of the committee, awarded to the plaintiffs because their plant was at the time in the best condition.

As the defendant was of opinion that the plants were identical (as was, indeed, proved by members of the committee, and by those who gave evidence before the arbitrators), and as he was not aware that similar sports had been produced elsewhere, he entered into negotiations with the plaintiffs for the purchase of their stock under such circumstances, but they refused to sell. The defendant, in accordance with the custom of the trade, applied to the plaintiffs to know when they proposed to send out their plants, and they, on September 24, 1888, wrote to him to say that they had finally decided to send out their new Chrysanthemum Mrs. Hawkins early last spring, and that they had already commenced operations for that purpose. The defendant propagated from the three stools obtained from Messrs. Heath & Son, and purchased from them 500 cuttings, and last spring advertised his plants very fully, by means of circulars and catalogues under the name of Mrs. Hawkins.

On May 22 last, the plaintiffs commenced an action against the defendant:—(1.) For damages for the user by the defendant of the name description of the plant Mrs. Hawkins, as applied to a Chrysanthemum. (2.) An account of the plants sold by the defendant under the description, Mrs. Hawkins. (3.) For an injunction to restrain the user by the defendant, his servants or agents, of the name Mrs. Hawkins, as applied to the Chrysanthemum in question, and from selling any Chrysanthemum root, cutting, plant, or flower bearing that name, or any colourable imitation thereof, and claimed £500 for damages. (4.) For an injunction to restrain the defendant from stating in his catalogues as to the Golden Fleece, Mrs. Hawkins, or any other Chrysanthemum plant, that he was awarded a 1st prize for the same at the exhibition of the National Chrysanthemum Society in September, 1888.

The defendant contended that the plants were identical, that the statement in his circulars and catalogues that he had been awarded a 1st prize at the exhibition of the National Chrysanthemum Society, in September, 1888, had reference only to the prize awarded to him for the general collection, and not to the plaintiff's plant, and that he had simply followed the custom of the trade in advertising and selling this plant under the name of Mrs. Hawkins, and that the plantiffs had not any right of action against him.

The custom of the trade and the rights of the parties will be obtained from the evidence, given in full in our last issue, of Mr. Holmes, the Honorary Secretary to the National Chrysanthemum Society, and of Mr. G. Wermig, Mr. W. Heath, Mr. G. Stevens, Mr. G. Gordon, Mr. John Maudlin, Mr. John Wright, Mr. James Walker, Mr. John Laing, Mr. Norman Davis, and the defendant.

It may be well to point out how advantageous it would be if the National Chrysanthemum Society would form a standing committee who would be able to grant a Certificate identifying sports produced subsequently to the first one certificated, and thus save considerable trouble and annoyance.

Incidentally, a good deal of evidence was given as to the commercial value of certificates, it being generally agreed that a certificate has no commercial value, unless the whole of the stock be in the hands of one person. It would be well if the societies—especially the Royal Horticultural Society—would ignore the commercial element as much as possible. The duty of a horticultural society in such matters is to appraise the absolute merit of the objects shown before it, independently of and without direct reference to their commercial value. That should be assessed on different principles, based on the requirements of trade, and by a different body—a body of trade experts.

Much of the ridicule, and many of the complaints levelled against the Royal Horticultural Society and its certificates would be deprived of their force if this unfortunate method of working on a wrong system, and, according to an inappropriate standard, could be abolished. We own that, considering that the trade element constitutes so large a proportion of the committees, that the abolition is likely to be a long while before it is effected.

The award of the arbitrators, cited on p. 339, is not likely to be very satisfactory to either party, though to outsiders it seems substantially just. The arbitrators found that the Chrysanthemums in question were identical, that is of course practically identical, for we doubt not the experienced eyes of the arbitrators, or of the botanists, would have been able to detect some difference. The two plants being substantially of the same variety, of course should bear the same name, and the plaintiffs had therefore in the opinion of the arbitrators no cause of complaint against the defendant for the use of the name. This being so, the arbitrators were of opinion that the plaintiffs should bear the entire cost of the proceedings up to the time of the "order of reference;" while the cost of the arbitration itself, should be borne by the plaintiffs and defendants equally.

This is another illustration of the lawyers getting the oyster and the litigants the shells. Both plaintiffs and defendant will probably consider the sport a very expensive one, and as affording another example of the fact that the game is not always worth the candle.

NEW OR NOTEWORTHY PLANTS.

WATSONIA IRIDIFOLIA, *Ker.*, VAR. O'BRIENI, *N. E. Brown (n. var.).**

THIS is a lovely plant! It is very similar to W. rosea in general appearance, but has pure white flowers; and this is its great attraction, for pure white flowers in the order Iridaceæ are of rare occurrence; in Amaryllidaceæ and Liliaceæ white is common enough, and indeed the prevailing colour, whilst in Iridaceæ there are very few species that have entirely white flowers, which is somewhat remarkable, considering the large number of genera and species it contains. Watsonia iridifolia is one of the few species in the order that has white flowers, and it seems to be a rare plant; the variety fulgens, with bright scarlet flowers, also seems to be far from common. Although the typical W. iridifolia has white flowers, they are not so pure and delicate as those of this new variety, which I have named after Mr. J. O'Brien, of Harrow, who introduced the plant.

In typical W. iridifolia the flowers are not so long as in this variety, the slender part of the tube does not exceed the bracts in length, the lobes are proportionately narrower and more acute, and the colour is not so pure a white, the outside being more or less tinted with yellowish or rosy, whilst in the variety O'Brieni the flowers are delicate in texture and of a very pure white, without a spot or tinge of any other colour.

A single plant of this fine variety was found growing wild in South Africa among a quantity of coloured Watsonias, and has now been increased to eight or ten plants, the entire stock of which is in the hands of Mr. O'Brien, who informs me that he has the plant growing vigorously in the open air, planted in turfy yellow loam, and that it lasts a long while in flower; specimens were exhibited at the Royal Horticultural Society on the 17th inst., which had been in flower for five or six weeks. A First-class Certificate was awarded to the plant, which is certainly a grand addition to our half-hardy bulbs. *N. E. Brown.*

TIGRIDIA BUCCIFERA.†

Of the discoveries made by Mr. Pringle last year in the mountains of Mexico, there has already been figured in the *Garden and Forest* (vol. i., fig. 61), a new species of Tigridia belonging to the typical T.

* *Watsonia iridifolia*, Ker. *var. O'Brieni*, N. E. Brown (n. var.). The leaves are sword-shaped, deep green, 2½ to 3 feet long, 1 to 1½ inch broad, gradually diminishing and passing into bracts on the stem, which grows to 3 or 4 feet in height, and is simple, or in strong plants branched, the branches being distichously arranged. The flowers are pure white, 2½ to 3½ inches long, with a curved tube, and a spreading limb about 2 inches in diameter, having elliptic-oblong obtuse lobes, with a minute apiculus; the lower half of the tube is slender, widening out upwards, the slender part distinctly longer than the bracts.

† *Tigridia buccifera.*—Stem a foot high, from a small bulb, branching, glaucous; radical leaves nearly as tall, plicate, three lines broad, the cauline bracts (three) more or less foliaceous; spathes of two unequal bracts, 1½ to 2 inches long; perianth 2 inches broad, with purple-dotted, greenish-yellow base, the blade of the outer segments obovate, purple; inner segments tubular-folded in the centre, the dilated sides below the small, cancave-rounded, deep purple blade, approximate in two cheek-like prominences; anthers nearly sessile, with broad connectives; styles as long, the conical branches widely divergent, extended between the anthers.

avonia group. We now offer one of the Beatonia ection, which are distinguished by smaller and more r less purple instead of orange flowers, and by inute terminal stigmas. From Nemastylis, which he species greatly resemble in habit, they differ in he inequality and dissimilarity in form of the outer nd inner segments of the flower, and in the position f the styles, which are here opposite to the anthers, nstead of alternate with them.

In the present species the flower is nearly 2 inches road, with the saucer-shaped base, formed by the road concave bases of the segments, of a pale reenish-yellow, dotted uniformly with purple. The bovate blade of the outer segments is a clear light purple. The shorter inner segments are very peculiar in shape, being folded together in such a manner as to form a sunken longitudinal tube down the centre, the dilated sides at the outer end of the tube approaching each other in the form of two cheek-like prominences. These are coloured white, purple, nd yellow; while the small, rounded, terminal blade s a deep purple. The anthers are erect, and nearly essile, upon very short united filaments, the cells of ach anther separated by a broad connective, as in ome species of Nemastylis. The styles are closely nited nearly as high as the top of the stamens, where the conical branches suddenly diverge, and are exserted in pairs between the anthers.

The flowers, as is frequently the case with plants f this order, are quite fugacious, lasting, at the ongest only for a single day. But while they last hey are remarkably pretty, and a succession from he several spathes of one or two flowers each day is assured for several days. *S. W., in "Garden and Forest*, 1889, *p.* 415.

ROSES.

ON SOME SINGLE ROSES.

OUR senses were tolerably well exercised during he summer on double Roses, column after column f our gardening papers were filled with the eiteration of names of flowers so dear to the Rose grower and Rose exhibitor; our eyes were easted on row after row of beauties in the full development of all their charms; we smelt the delightful fragrance of an Alfred Colomb, Camille de Rohan, or La France, while we felt inclined to pass by, as not quite worthy of attention, the scentless Baroness or Victor Verdier, and when, determining the identity of a Rose, we examined the wood, we found out that Roses have thorns. I want now to get away, if possible, from the exhibitor's standpoint, and to say a few words on behalf of a class of Roses which is often sadly neglected in our gardens.

In writing on single Roses I do not pretend to do so with any botanical or scientific knowledge, for I do not possess it, but merely to record what in the limited experience of my own small garden I have found great enjoyment, and here let me say what a pleasure it is to see the graceful wreaths that our wild Briers throw over hedge and copse, and what more lovely than to see the wild Rose on the shores of some mountain tarn, far away from all other productions of Flora's kingdom, not altogether "wasting its sweetness on the desert air," for it often gladdens the eyes of the lonely tourist, as he welcomes it even more than the flowers of May; and lover of our choicest Roses as I am, I confess that it is sometimes a refreshment to turn from the highly-developed charms of a Marie Baumann or A. K. Williams to the simple and graceful forms of a Macrantha or Austrian yellow, where all is "as Nature pleases."

Austrian Yellow.—Earliest, I think, amongst all the single Roses that I possess is this very lovely Brier. There is in a labourer's garden on the hill above my house a plant of it, which is, or was, a picture not easily forgotten. I say was, for it has excited the desires of many of his neighbours, and suckers of it have been so freely given away that the plant is somewhat reduced in size, but it will soon recover. This year it was very lovely; I know no clearer or more beautiful yellow. I had some difficulty in obtaining it, the Austrian Copper or the Persian Brier having been sent to me instead. I have it now, however, and it is doing well. It gave me some blooms this year, and I hope that another season it may be still more beautiful. It is one of those delightful flowers a garden ought not to be without.

Austrian Copper or Rosa punicea.—This is one of the most highly coloured Roses that we have; although called copper it is nearly a scarlet, and a bush well laden with its flowers is a sight not easily forgotten. The intense deep scarlet-yellow makes it very conspicuous.

Rosa rugosa and rugosa alba.—So much has been written about these Roses that it is needless to dwell upon them or expatiate on their beauties. When looking at a bush in Canon Ellacombe's garden at Bitton, he said, "You know that it is a garden hybrid from Rosa ferox," and I believe that he has a variety from it similar to that recently sent out by Bruant as Mrs. Georges Bruant. I have found it the least satisfactory of single Roses for cutting, as the blossoms so soon are shattered. In the autumn the hips are very beautiful, and it is so vigorous that when once it has been planted it is exceedingly difficult to get rid of it.

Rosa berberidifolia, an exquisite gem, but I fear we must write it down as not quite hardy. I have tried it more than once, but it has succumbed, although we do not experience the effects of frost here so much as in many places; its synonym is, I believe, simplicifolia, but whatever the risks about it may be it is well deserving of every care, as it is a most lovely little thing, the foliage very slender and dwarf, the flowers a beautiful bright yellow with a crimson spot at the base, causing the flower to resemble a Cistus, very much like, for example, Cistus Algavarensis. I shall for the future take up and pot my plant, and put it out again in the spring.

Rosa macrantha, a lovely pure white single Rose with yellow stamens, the flowers are very large and very freely produced. As the plant is of rampant growth, it makes an admirable Rose for a pillar, and one that I had at the back of my border was one of the most pleasant sights I had in my garden this year. With us in this part of England (Kent), it is perfectly hardy. I found this under the name of marantha, in catalogues, but not seeing it in Mr. Nicholson's admirable *Dictionary of Gardening*, I sent some foliage and buds (the flowers had passed) to him. He replies, quoting Mr. J. G. Baker, "I expect the Rose is a centifolia form," and adds, "I believe it to be a purely garden name—that it is a new name into the bargain."

Paul's single white is a good deal similar to the above, equally large and free in growth; the flowers, however, lack the yellow stamens which give such a peculiar character to Macrantha; like it it makes an admirable pillar Rose.

Rosa polyantha simplex.—This Rose, although the individual flowers are very small, forms, where room can be given to it, one of the most delightful (I suppose one ought to say precious) objects that a garden can possess. There was some time ago figured in one of your supplements a photo of a plant of it in Mr. Girdlestone's garden at Sunningdale; it gave some idea (although I think photos of flowers are simply an abomination) of what can be done with it; but even where such ample space cannot be afforded to it, it is still a most beautiful object for a pillar, fence, or any place that requires covering. The flowers are produced in clusters, or rather wreaths, which almost hide the foliage. They are, moreover, sweet-scented. It is quite impossible to exaggerate the beauty of this simple Rose. It is, moreover, interesting, as it has become in the hands of the French Rose growers, the parent, when crossed with Tea blood, of that charming race of dwarf button Roses, Paquerette, Mignonette, Perle d'Or, &c., a very curious instance of the effect of hybridising; all the rampant character of the plant is gone, for they are very dwarf, while the flowers are doubled, the habit of blooming in clusters being retained, and a decidedly Tea perfume being imparted to them, while the Teas have given to them their ever-flowering character.

Striped Brier — Janet's Pride.—I hardly know what to say about this, or where to place it. It is not exactly a single Rose, and it has two, and only two, rows of petals. It is not semi-double, and therefore I think it may be safely placed amongst the single Roses. I found it some four years ago in the garden of a friend in the county of Durham, and obtained from him a sucker which has grown up now into a good-sized bush. Last year I sent some flowers of it up to the Floral Committee of the Royal Horticultural Society, when it was awarded a First-class Certificate. Since then I have given it to a very eminent Rose grower, but he was unable to get the grafts to take. I lately sent him a bundle of wood for budding, and hope that he may be successful with it. In colour it is very much like Village Maid, white with pink stripes, while the foliage has the scent of the common Sweet Brier, and it soon forms a large and handsome bush.

Rosa spinosissima is a single Rose, so well known as hardly to require any description. As its name implies, it is covered all over with short sharp prickles which make it by no means a pleasant plant to handle, while it is covered with small blush-white flowers; it is ordinarily known as the Scotch Rose.

Rosa apennina.—This is a very dwarf alpine variety. The flowers are pink, pretty, but rather scantily produced. It is so persistent a usurper that when once established it is exceedingly difficult to get rid of, and insinuates itself into all sorts of places. I once, before I knew its character, planted it on a very small rockery; for the first year I was charmed with it, but afterwards I found it coming up in the midst of some of my choice little alpines, and I must either sacrifice it or them, but how to do it I knew not. I cut away all the suckers I could see, and hoped I had stopped it, but alas! the next year it was as bad as ever, so I had nothing for it but to rebuild that part of my rockery altogether, taking up all the plants and destroying the Rosa altogether. This has been an heroic but tolerably successful measure. Now and then I get a small piece of it, but on the whole I have pretty well got rid of it.

I have not attempted to give a list of single Roses, but simply to describe those which have given me satisfaction in my own garden. I have others, but as yet they have not attained such a size as could enable me to judge accurately about them I also saw others exhibited at the National Rose Society's exhibition, and at the Rose Conference at Chiswick; but as I have no practical experience concerning them, and, therefore, prefer confining my notes to those kinds which I have grown.

May I add a word about the suggestion some time since of "Rosa" on the nomenclature of Roses? The National Society has done its best to shorten the names by dropping where practicable the prefix of Mr., Madame, and Mdlle., but this is not always practicable; thus how are we to distinguish Therèse Levet, Claudius Levet, Souvenir de Therèse Levet, Madame Levet, if we were simply to use the "Levet" as suggested? Here, again, we have got accustomed to names which, if they were dropped, might lead to confusion; although we often speak of Souvenir de la Malmaison as simply Malmaison, yet if thus printed in a catalogue, questions would arise. Then, again, we have a Mons. and Madame with the same surname—how are we to distinguish say the Mons. Margottin, Madame Margottin, Jules Margottin, and Gloire de Margottin, if we drop all but "Margottin?" Then as to turning Cloth of Gold and Maréchal Niel into Gold and Niell would it not be equally desirable to change Prince of Wales and Countess of Rosebery into Wales and Rosebery? We have been treated badly by the French raisers to a series of long and almost, in some instances, unpronounceable names, and one could only wish that the example of my dear old friend Souchet, of Fontainbleau, had been followed; with him brevity was the soul of wit, and anyone looking

through the catalogue of Gladioli published by Vilmorin, and that of Roses published by Charles Verdier, must be struck with the difference; but withal, I do not think that we should so imitate them as to make them a travesty on the original. If the French names are a burden to us, what shall we say of the Hungarians, if they ever come to be popular? On the whole, I think that to some extent it has been remedied, and for what remains we must grin and bear it. *Wild Rose.*

TEA ROSE, PRINCESS STEPHANIE.

What is known about this variety? I am unable to find it in any catalogue which I have at hand, but judging from the appearance of a plant of it observed at Normanton Park recently, it is well worth possessing; Mr. Gray, the gardener at that place, has the variety growing freely on a wall, and he appears to think very highly of it, which is not to be wondered at. Its colour is almost the same as that of the beautiful W. A. Richardson, but the flowers are much fuller than that Rose, and well formed; just the kind of a flower that charms at first sight. In habit it has resemblance to Madame Berard. I believe there was a prefix of some kind to the name, but the above should be enough to identify it by; long names are an evil, being difficult to remember. *W. H. Divers, Ketton Hall, Stamford.* [The Rose meant is Princess Stephanie et Archduke Rudolphe, raised by Levet, and sent into commerce in 1880; it is a Rose of the character of Gloire de Dijon—the colour orange-yellow and salmon-pink; and it is also known as Fiançailles de la Princess Stephanie et de l'Archduc Rudolphe. ED.]

A MOUNTAIN MEADOW.

MOUNT RAINIER, which rises to a height of 14,444 feet from the shores of Puget Sound, is the most beautiful of the mountains of the United States, as it is the most difficult to ascend, only two or three parties, previous to last summer, having succeeded in reaching the twin craters which occupy the summit. In August last, however, a party of nine men, including Mr. John Muir, the well-known student of the Cordilleran glaciers, gained the summit, and were fortunate in obtaining a large number of photographs of the mountain, and of various aspects of vegetation encountered during the journey. Among these photographs is one that represents an alpine meadow covered with flowers of Erigeron salsuginosus. We are indebted to Mr. Charles V. Piper, of Seattle, one of the party who made this memorable ascent, for the photograph, and for the following brief note, which he has promised to supplement later with a fuller and more detailed account of the flora of Mount Rainier.

"This particular meadow on which we encamped lies between glaciers of the Nisqually and Cowlitz rivers, on the south side of the mountain. It covers, probably, four square miles, and ranges in altitude from 5000—7000 feet. The meadow on the east side of the mountain, between the Cowlitz and Natchess glaciers, is about the same size, and differs but little in vegetation. The other meadows on the main mountain are much smaller, and, with one exception, difficult of access. The meadows on the summits of the surrounding lower mountains are quite extensive, however. The timber on the meadows is confined mainly to the crests of the ridges running up the mountain, and consists of Abies subalpina, Tsuga Pattoniana, Chamæcyparis Nutkaensis, and a few Pinus monticola. Erigeron salsuginosus grows on the drier ground, near the timber, together with the following equally abundant plants:—Orthocarpus pilosus, Lupinus sp., Anemone occidentalis, Potentilla gelida, Valeriana sp., Polygonum Bistorta, and Veratrum viride."

Erigeron salsuginosus is widely distributed from Kotzebue Sound and Unalaska, and along the high mountains as far south as California, Utah, and New Mexico. It was first discovered by Dr. Richardson, of the Franklin Search Expedition, on the salt plains of the Athabasca. It is a handsome plant, with stout stems 12 to 20 inches high, and solitary or a few corymbosely disposed flowers, with broad discs, and fifty to seventy purple or violet rays ½ inch or more long. There is an early figure under Aster salsuginosus in the *Botanical Magazine*, t. 2942. *Garden and Forest.*

CLETHRA ARBOREA.

THIS is one of those fine old conservatory shrubs which we rarely see now, though once popular, and still deserving attention by reason of its rich, deep-green foliage and elegant racemes of white, bell-shaped flowers. Our illustration (fig. 51, p. 353), shows a spray reduced one half, a reduction necessitated by the exigencies of space, but which does great injustice to the plant. It is a native of Madeira, and would possibly be hardy in our south-western districts and in the Channel Islands.

It forms, during the season, a conspicuous ornament in the conservatory at Sion, and it is to Mr. Wythes, the very able gardener at that fine establishment, that we are indebted for the specimen.

NOTES FROM THE PARIS EXHIBITION.

IN the French section of the main building devoted to Class 44, "Agricultural Products not edible," there are some interesting exhibits worth notice.

The Association Générale of Herboristes of France, founded in 1876, whose business place is in Paris, make a very fine collective display of medicinal plants, &c., dried flowers, leaves, herbs, seeds, roots, lichens, &c., in large glass jars, also bundles of dried herbs, well arranged and in excellent condition. Another firm, Lahaye-Viard of Montreuil sur Bois, also make a similar display, but not so effective or well arranged. They have ten acres under culture with medicinal plants, pharmaceutical, antiscorbutic, narcotic, and for the distillation of absinthe and bitters generally, furnish the civil hospitals of Paris, and the principal druggists of France.

A very prettily arranged case of Teasels (Dipsacus fullonum), by Cabardez and Nicolas, Narbonne, attracts special attention from the manner in which it is arranged in a circle, the Teasels graduated in sizes, by half centimetres from No. 6 up to 18. Wild, cultivated, and prepared Teasels are shown.

Although wire cards are fast superseding these hooked thistle heads in the cloth manufacture, yet on the Continent there is still a large demand for them, which necessitates a special culture.

The collection of Hops shown here is large and varied, comprising samples from all the principal producing countries. The strobiles are exhibited as collected, also in square pressed packets, in bottles, in pockets, and some in metal cylinders with glass tops. The culture of Hops is necessarily large on the Continent, for the production of the immense quantity of beer drank.

In this department there is also a large and interesting display of oils and oil-seeds shown, chiefly from India and Africa. Some interesting details are furnished with regard to the production of ground-nuts (Arachis hypogæa) in the French colony of Senegambia by one of the exhibiting firms, Mauret & Prom, of Bordeaux and Marseilles. This firm, established in 1828, has forty-eight factories in Africa, and the importance of the trade it carries on is evidenced by the number of boats and natives employed locally, namely, seventy-two, manned by 352 men—besides four steamers and two sailing-vessels of 5000 tons in all, and 146 men—for the transport of the cargoes from Senegambia to France. The production of ground nuts (termed by the French arachides) in Senegambia is about 55,000 tons annually, of which this firm receives more than half.

The oil produced by them in France is supplied to twenty factories of oleomargarine, to the sardine preservers, and other minor industries. The oilcake, containing a large proportion of nitrogen, is a good cattle food, and is also a useful fertiliser for Vines, corn, pastures, &c., and is even used for bait in the sardine fisheries in place of cod-roe.

A large glass case in this court is filled with the products of Ramie (the name the French apply to the Nettle family species of Urtica and Bohmeria). This is shown by two societies—La Société de Crédit d'Industrie and La Société d'Études Scientifiques appliquée à l'Industrie au Commerce, &c.

The collection comprises the Osier-like stems, the rough, and cleaned, and dyed fibre, the prepared thread in hanks and on bobbins, fabrics made of it, and a variety of books and pamphlets on the culture, preparation, &c. Very little progress, commercially speaking, seems yet to have been made in the utilisation of this fibre.

In this section, Messrs. Vilmorin, Andrieux & Co. have one of their numerous exhibits. Here they show seeds of industrial plants, samples of grain and grasses, coloured models of Beetroots, and other tubers, and screw-cap tin boxes, closing hermetically, for packing small shipments of seeds intended for the colonies. The other exhibits of this well-known firm are a model school garden, in Class 63, on the Place des Invalides; a collection of new hybrid Wheats, in Class 67; a very extensive display of all agricultural products, and illustrated works published by them under class 74, in the agricultural gallery; grass lawns and baskets of cut flowers, in the Trocadero gardens; kitchen garden plants and herbaceous greenhouse plants, in the same locality; and seeds and cones, &c., of trees in the Forest Pavilion. *Paris Correspondent.*

BURGHLEY GARDENS.

LAXTON'S Noble Strawberry has been grown here extensively this year outside, and as far as weight of crop goes, it has exceeded that of any other variety; but Mr. Gilbert does not speak highly of the flavour of the fruit, and considers it to be much inferior to some of the older varieties in this respect. Others of Mr. Laxton's new kinds, which have done well here, are A. F. Barron and Commander; the former is not such a vigorous grower as some others, but it has given some very fine fruit, that were remarkable for their beautiful glossy appearance and rich colour. About 4000 Strawberries are forced annually in pots, and were nearly all potted at the time of my visit, Aug. 22. Burghley soil is the best I have met with for giving strong young plants. A few Vicomtesse Hericart du Thury are grown for the earliest supply, and are succeeded by La Grosse Sucrée, of which there is a very fine lot; and for later use, Sir C. Napier and A. F. Barron are chiefly relied upon.

Tomatos out-of-doors were just commencing to ripen a fine crop of fruits, and were free from disease. The variety Surpasse is grown for the outside crop, and is a very fine fruit. Mr. Gilbert speaks very highly of Ham Green Favourite, which was on trial in a cool-house; it is, however, very similar to Surpasse. Hackwood Park is bearing a very heavy crop, but the fruits are not so perfect in shape as the above, and that is a matter of consideration when one seeks for the best price in the market. Tomato Lorillard was bearing some fine fruit, but it was insufficient in quantity. Vick's Criterion is just coming into flower for a late crop, and looked promising; it is still one of the best setters for winter and early spring supply. Cucumbers have done remarkably well this season, and are still carrying good crops; the only variety grown is Veitch's strain of Rollison's Telegraph. A house full that is now ripening off for seed is a sight worth going far to see.

Late Grapes are finishing off a heavy crop of bunches of a useful size. Thomson's Vine manure is employed for the Vines with good results, and abundance of water is afforded them, as they are chiefly inside. A hedge of Niphetos Roses, 5 feet high, and nearly 60 feet long, and looking remarkably healthy, is planted by the side of the path in one of the houses, is always in flower. Peaches indoors have borne heavy crops this season, commencing with Early Louise, Dr. Hogg, Crimson

Galande, &c., in the early houses. Two very fine trees of Bellegarde and Barrington were just ripening in a cool-house; a tree of Victoria Nectarine trained to a wall under a glass case had a nice even crop of very pretty fruits, none of which were cracked—a rare occurrence with this otherwise fine variety. Princess of Wales Peach also bore a good crop in a similar position. The outdoor Peaches have very few fruit this year, owing probably to the bad weather last season, which did not allow the wood to ripen sufficiently; and this will also account for the scarcity of Apples and Pears, although the trees flowered well, and there was no late spring frost to harm them this year. A tree of Clapp's Favourite Pear on a west wall had been mulched with manure, and was carrying remarkably fine fruit; and cordon trees of Emile d'Heyst, called



Fig. 51.—Clethra arborea: half size: flowers white. (see p. 352.)

here Beurré d'Esperen (on a south wall) were carrying heavy crops. The celebrated old plant of Maréchal Niel Rose looked very flourishing. It is cut hard back every year. Seven or eight years ago canker commenced to show itself in the main stem. Just above the ground some turves were packed up around it to a distance of 15 inches, and high enough to cover the affected part, and which formed a solid mass of soil after a time; whether this has cured the canker, or if the tree has made fresh roots into it is not known, at any rate it has survived the operation.

Raspberries have done very well this season, especially Baumforth's Seedling, which is most liked. The tops of the fruiting canes are arched over to a wire on each side of the row about 3½ feet from the surface, and 2 feet from the centre of the row, and this is one of the best methods of fastening them that I have seen, as the young growths are kept clear of the fruiting canes, and the fruit is easily gathered. Early Potatos were a remarkably heavy crop this year, and Wilson's Ashtop, otherwise Empress Eugénie, is the variety most relied upon, and it is grown year after year without the least signs of deterioration; a fact which does not agree with generally accepted notions, but much of the success of Mr. Gilbert is probably due to the method of saving the set. Here the sets are allowed to mature, and they are then carefully stored in single layers on shelves for the winter, this takes up much time where such large quantities are grown as here; but as it is generally done in wet weather it finds occupation for the men under cover. As soon as the Potatos are dug up, a winter or spring crop is planted. The celebrated Burghley varieties of Broccoli are the principal kinds grown, and it is quite natural for everyone to think his own children are the best, but this is brought at Burghley to the severe practical test of £ *s. d. W. H. Divers, Ketton Hall, Stamford.*

The Bulb Garden.

DAFFODILS.

Of recent years these bulbous plants have acquired much importance amongst choice flowers for cutting, and plants to grow in pots for decoration. To have them at an early date, no time should now be lost in planting the bulbs. If only wanted for cuttings plant in deep boxes, or in frames, as this gives the least trouble; but where large quantities of blooms are required, the latter plan is, perhaps, to be preferred. And if there are hot-water pipes to keep out the frost, so much the better, as it obviates the necessity of covering; but we have seen them do well when planted out in frames which have just been cleared of Melons or Cucumbers—the slight warmth remaining in the beds inducing roots to form rapidly, and to assist these the frames may be kept rather close; but as soon as the foliage comes through the soil, air should be admitted freely in favourable weather, otherwise they get drawn in leaf and stalk, and small in size of flower. Daffodils are easily spoiled by much forcing, and are never better than when brought on in an ordinary cool greenhouse. When grown in pots, we have found 6 or 7-inch most convenient sizes. Plant them full of bulbs, completely covering them with the soil, which should consist chiefly of turfy loam. Plunge the pots in coal-ashes, cocoa-nut fibre refuse, or similar material, covering over to the depth of several inches. If the soil was sufficiently moist at planting, watering should not be needed until growth is seen above the soil; but should it be deemed necessary, it may easily be done by watering the plunging material. Sometimes, when standing outside, they are apt to get too wet, therefore select a well-drained bottom, but the protection of a frame is best. Here they may remain until growth is well advanced, looking through them occasionally, moving upwards those which have started; they may afterwards be accelerated into flower by moving into a warmer greenhouse in batches, according to requirements. For growing in pots we prefer the large trumpet Daffodils, such as Irish King, Golden Spur, Golden Plover, Henry Irving, maximus, Sancta Maria, and Spurius-major. Of the bicolor section, Empress, Horsfieldi, and Emperor are grand flowers. Then there are the little Corbularias, very neat and distinct; but we have seen cheaper sorts, such as pallidus præcox, obvallaris, Telamonius plenus, variiformis, and many of the incomparabilis section, forced, with excellent results. *F. R.*

Freesia refracta alba.

A few pots of these delightfully odorous flowers in winter and spring months, should be found in every garden. The Freesias readily accommodate themselves to cultivation in pots, and may be potted at the present season and be made to bloom at the New Year. In order to have good pots, from five to seven bulbs should be put into 5-inch size, using a compost of light, fibrous loam, leaf-mould (not too rotten), spent Mushroom manure, with sufficient sand to keep the whole sweet and somewhat porous. The pots, it is needless to say, should be thoroughly clean and well-drained. For a time after potting they may be stood in a cold frame well exposed to the sun, giving the soil no water till after the growth of the bulbs commences, unless the soil should get dust dry. They may subsequently be transferred to the greenhouse, a shelf near the glass will suit them well, and some may be put into the stove to bring them into bloom quickly if it be needed, and at intervals of a fortnight throughout the winter and spring. *H. Markham.*

TUBEROSES IN THE OPEN GROUND.

When visiting the Portland Nurseries of Messrs. Sutton & Sons, at Reading, a short time ago, the nursery where they grow their remarkable collections of Begonias, Cyclamens, &c., I was much struck with a plantation of Tuberoses growing in the open ground. They were planted out-of-doors in May last, on a warm south border; they had grown vigorously, and were flowering freely—very finely indeed, much finer than I have seen them bloom in houses. They were by no means planted deeply in the soil, which was made as fine as possible. Whether the Tuberose is capable of being made a summer bedding plant is perhaps doubtful; but after what I saw on this occasion at Reading, I am inclined to think it can be made a novel and highly acceptable dot plant, placing it among lower-growing ones. Messrs. Sutton & Sons are perhaps fortunate in having on their Portland Nurseries a soil—a light, sandy, warm one—such as one could perhaps

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see in a Dutch bulb garden; and it appears to be well adapted to the requirements of the Tuberose. Could it not be employed in the London parks, and especially in that charming belt of flower garden lying between Hyde Park and Park Lane. Whether the tuberose would flourish in the soil there, as it does at Reading, or whether there may not be elements in the London atmosphere that would prevent it blooming, I cannot say, but the plant might be reared in pots, and then placed in the beds to flower. At any rate, the open air experiment at Reading is a highly successful one, and there appears to be no reason why it should not be attempted in other places. *R. D.*

NEPENTHES.

In your issue of September 14, the report of the show of the Royal Caledonian Horticultural Society, reference was made to the splendid collection of Nepenthes exhibited from the Royal Botanic Garden, by Mr. Lindsay, the Curator, by Messrs. Ireland & Thomson, Edinburgh, and the elaborate specimens shown by Messrs. Jas. Veitch & Sons, from the Royal Exotic Nursery, Chelsea.

All honour is due to these contributors, and we ought chiefly to recognise these examples of the industry of the collectors and the skill of the successful cultivators as especially opportune for celebrating the centenary anniversary of Nepenthes introduction into Great Britain, which according to Aiton in *Hortus Kewensis*, took place in 1789. Although known to European botanical writers for the last three centuries, it was only after two centuries' patient endeavours that the difficulty of Nepenthes introduction was overcome, and even after a lapse of another half century only some half-dozen species had been introduced. What a contrast we have in the remaining half century which has been so prolific in enriching our collections to the amount of some forty species, and the discovery of other thirty-six species to which the successful raisers have added some forty-five garden seedlings, making a total of 121 species and varieties. Especially had we cause for rejoicing in the improvements of late years in the wonderful progress made by the raisers of new varieties, and Mr. Lindsay must indeed be proud of his success in producing such a splendid variety as N. Dicksoniana ×, as exhibited and brought to such perfection by Messrs. Jas. Veitch & Sons and by Mr. Lindsay, the specimens of which proves the fact that there is a great future before us in Nepenthes seedlings, and leaves no doubt that future generations will see some wonderful productions should the important Bornean discoveries N. Edwardsiana, N. Burbidgeæ, N. Harryana, N. villosa, &c., escaping the perils of a journey through the Red Sea, reach this country in safety, and acclimatise themselves in our gardens.

The Botanic Garden collection comprised a fine N. Veitchi, with grand pitchers; N. Mastersiana ×, large and fine; a splendid N. sanguinea, with its highly coloured urns in great perfection; N. ampullaria vittata, N. destillatoria, the true Cingalese variety, N. Khasiana (the N. destillatoria of our gardens); the grand lately introduced N. Curtisi; N. gracilis major, N. Rafflesiana (the true N. Hookeriana of gardens); the pretty little N. lævis, N. hybrida, N. h. maculata, N. phyllamphora, with the following garden varieties: the before-mentioned N. Dicksoniana × (Lindsay), N. Edinensis × (Lindsay), the Veitchian N. Chelsoni ×, N. cylindrica ×, N. cincta ×, two varieties of N. Dominiana ×, N. Dormanniana ×, N. intermedia ×, N. rupescens, and N. Sedeni ×, most of these in duplicate.

The large specimens of Messrs. Veitch & Sons were of peculiar excellence, well pitchered, and altogether made an excellent display, that they formed one of the features of the exhibition, goes without saying, and they were universally admired. They comprised a splendid specimen of N. Dicksoniana ×, a cross between N. Rafflesiana and N. Veitchi, raised by Mr. Lindsay. The pitchers were some 13 inches long, highly coloured, after the style of the seed parent, with a broad collar or peristome (a fine woodcut is given of this at p. 541, in the *Gardeners' Chronicle*, Nov. 10, 1888), N. albo marginata, with fine pitchers; a grand plant of N. Curtisi, a splendid acquisition; N. cylindrica, N. Hookeriana, N. Rafflesiana, N. intermedia, N. Khasiana (the N. destillatoria, Hort.), and the splendid N. Northiana, with its wonderful coloured margin; N. Mastersiana ×, N. Morganæ ×, one of the best of the seedlings emanating from America; N. Wrigleyana, all finely pitchered, handsome specimens. Messrs. Ireland & Thomson, nurserymen, Edinburgh, had N. Mastersiana, N. Morganæ, N. Northiana, N. superba, and others. From the Royal Botanic Garden came also a fine representative collection of Sarracenias, Droseras, &c. *Wm. E. Dixon, Edinburgh.*

CULTURAL MEMORANDA.

RICHARDIA ÆTHIOPICA.

If not already potted, no time should be lost in getting the plants lifted and put into their flowering pots. They should have good masses of root and soil, and be put in suitable sized pots, taking care that the drainage is good, but not excessive. The soil should be rich. Give enough water after potting to settle the soil, and place the plants in a greenhouse or cold pit.

Bouvardias, Eupatoriums, and Salvias.

There can be no question about the best results being secured from plants of these subjects which are planted out in a moderately rich soil on a hard bottom in a warm aspect in May last. If the plants have been stopped repeatedly, and water in sufficient quantity given to the soil, they should be fit to be lifted and potted forthwith, choosing pots a little larger than the mass of roots and soil. The plants may then be placed in a house or pit from which frost can be kept out, and when established they may be put into heat, and gradually be pushed into flower in succession. Beeson's manure is found to be useful as a surface dressing, and may be used sprinkled on the soil. *H. W. W.*

Begonia gracilis var. Martiana.

This and a few other varieties are rarely met with—though when seen and well-grown, they are generally much admired. The flowers are of a soft pink colour, from 1½ to 2 inches diameter, and are borne on the upper portion of an erect unbranched stem, attaining from 2 feet in height, the leaves being rather small, and thinly arranged, and of a light green colour. It is very different in habit from the ordinary run of Begonias. Two flowers spring from a pair of bracts, and have a very formal arrangement, the male flowers being placed directly above the female. Between these bracts, and also between the sepals, young plants and bulbils are borne, and from which source the plant may be readily propagated. It is suitable for growing in pots and pans, especially the latter. Two to three bulbs are sufficient to fill a 6-inch pot. A compost of loam and leaf-soil, with a good addition of silver-sand, is a suitable mixture in which to grow them. The tubers should be stored and protected similar to other tuberous Begonias, potted some time during February, and placed in a frame where they will be protected from frost, and in bright weather shaded from the sun. There are other varieties of this species, and if they are anything like the above species, they are well worth a place in any collection —B. g. annulata, B. g. diversifolia. *W. Harrow.*

Gladiolus Colville alba.

The time has arrived for gardeners to order their bulbs, &c., and I would advise those who have not grown this Gladiolus to give it a trial, especially as the corms are very cheap, and, moreover, it is easily grown. I cannot speak of its hardiness when planted in the open border, but as I have grown it for the past six years as a pot-plant, I am constrained to say that it is one of the most beautiful things I have grown. Being naturally an early flowerer, and flowering in March and April without much forcing the season of its flowering may be much extended by putting it into heat in successional lots. I am repotting our corms, the foliage being now ripe. The compost employed is 3 bushels of loam to 1 of spent hotbed manure and coarse silver-sand; seven corms are placed in a 6-inch, and from 8 to 10 in a 7-inch pot, and they are potted moderately firm, the pots being then plunged in fine coal-ashes, and some old frame-lights put over them. *D. Etkins, Trewsbury House, Cirencester.*

Schubertia grandiflora.

The plant known under this name is a twiner, belonging to the Asclepiad family, and is likely to become a popular and serviceable garden plant, both for cut flowers and an exhibition plant. The stems and leaves are clothed with brown hairs, and contain an abundance of milky juice such as botanists call latex. It has a pure white tubular corolla, much swollen below, with a five parted limb, the segments of which recurve, and is agreeably scented. The flowers are borne in umbels, the individual flowers measuring a little more than 2 inches in diameter. The flowers are of good substance, so as to admit of their being used for wreath-making, &c. I saw at the last Sandy flower show a large plant trained balloon-shape, and which was but sparsely flowered. The leaves are large, egg-shaped, and pointed. It sets its fruit, and ripens its seeds, which, if sown in a gentle bottom-heat, soon germinate, and grow on to flowering plants. A compost of peat, loam, and a good addition of silver-sand, is suitable for its growth. The fruit is of the shape of a small inverted Pear, with some scattered fleshy spines over its surface. From a fair-sized fruit it is capable to raise two or three hundred seedlings. *W. Harrow, Botanic Garden, Cambridge.*

—— This stove plant resembles somewhat, in habit of growth and flower, the well-known Stephanotis floribunda. The plant is propagated in the same way as the Stephanotis, and will flourish under the identical treatment. Some persons consider that the flowers of Schubertia to be too strongly scented. But be this as it may, the plant is deserving of being grown by every one having a stove, and possessing a partiality for fragrant flowers. *H. W. Ward.*

LIST OF GARDEN ORCHIDS.

(Continued from p. 323).

BRASSAVOLA.

85. Brassavola, R. Br., in Ait., *Hort. Kew.*, ed. 2, v. (1813), p. 216.—Sepals and petals narrow, long and spreading; lip with a narrow base, the infolded margins embracing the column, front lobe suddenly dilated and spreading; pollen-masses 8. Rhizome creeping; pseudo-bulbs very small and narrow; leaves linear, fleshy, subterete; raceme simple, with few or many, medium-sized or large flowers, Species about twenty, ranging from Mexico and the West Indies to Brazil.

(1.) Brassavola acaulis, Lindl., in Paxt., *Fl. Gard.*, ii. (1851—2), p. 152, fig. 216; *Orchidophile*, 1884, p. 239, with fig. *Bletia acaulis*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 435.—Guatemala. Introduced by Mr. Skinner, and flowered in the garden of the Horticultural Society in 1851. Leaves short and stiff, flowers large, solitary, cream-coloured, flowers at midsummer.

(2.) B. angustata, Lindl., *Bot. Reg.*, xxiv. (1838), *Misc.*, p. 41. *B. surinamensis*, Focke, in *Tijdsch. Nat. Wetenschappen*, iv. (1851), p. 71. *Bletia angustata*, Rchb. f., in Walp., *Ann. Bot.* vi. (1861), p. 434.—British Guiana. Flowered in the collection of Mr. Wilmore, near Birmingham, in April, 1838. Leaves very long and slender; flowers medium-sized, with narrow, minutely serrulate, white lip.

B. appendiculata, Rich. and Gal. = B. cucullata.

(3.) B. Ceboletta, Rchb., f., in Bonpl., iii. (1855), p. 221. *Bletia Ceboletta*, Rchb. f.,

in Walp., *Ann. Bot.*, vi. (1861), p. 435. —Native country not stated. Appeared in Consul Schiller's collection, and is allied to B. Perrinii.

(4.) B. cordata, Lindl., *Bot. Reg.*, xxii. (1836), t. 1913; *Bot. Mag.*, t. 3782. *Bletia cordata*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 436.—West Indies. It was imported by Messrs. Loddiges, and flowered in January, 1836. It was said to come from Brazil, but as all other specimens are from Jamaica I suspect the indication of the former locality to be a pure mistake.

(5.) B. cucullata, R. Br., in Ait., *Hort. Kew.*, ed. 2, v. (1813), p. 216; *Journ. Hort. Soc.*, v., p. 85, with fig.; *Lindenia*, iii., t. 111 (var. cuspidata). *Epidendrum cucullatum*, Sims, *Bot. Mag.*, xv. (1801), t. 543. *Cymbidium cucullatum*, Willd., *Sp. Pl.*, iv. (1805), p. 100. *Bletia cucullata*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 433. *Brassavola cuspidata*, Hook.. *Bot. Mag.*, lxvi. (1840), t. 3722. *B. appendiculata*. Rich. & Gal., in *Ann. Sc. Nat.*, ser. 3, iii. (1845), p. 23. *B. odoratissima*, Regel, *Gartenflora*, i. (1852), p. 325, t. 33.—Trop. America from Mexico and the West Indies to Venezuela. It is said to have been cultivated at Kew as early as 1794, and was originally figured and described as Epidendrum cucullatum, from a specimen which flowered in the collection of Mr. Edward Woodford, of Vauxhall, in 1801. Reichenbach reduces all the above as forms of the same species.

B. cuspidata, Hook. = B. cucullata.

B. Digbyana, Lindl. = Lælia Digbyana.

B. fragrans, Lem. = B. tuberculata.

B. Gibbsiana, Williams = B. tuberculata.

B. glauca, Lindl. = Lælia glauca.

B. grandiflora, Lindl. = B. nodosa.

(6.) B. lineata, Hook., *Bot. Mag.*, lxxix. (1853), t. 4734. *Bletia lineata*, Rchb. f., in Walp. *Ann. Bot.*, vi. (1861), p. 436. *Brassavola Mathieuana*, Klotzsch, in Otto and Dietr., *Allg. Gartenz.*, xxi. (1853), p. 290.—Central America. Flowered in the nursery of Messrs. Jackson, of Kingston, in June, 1853, from a plant purchased at one of the sales of Mr. Warscewicz's plants in the previous year.

(7.), B. Martiana, Lindl., *Bot. Reg.*, xxii (1836), sub. t. 1914; *Id.*, xxv., t. 5. *Bletia Martiana*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 434.—Brazil and Guiana. Introduced to cultivation from the River Berbice in British Guiana by Messrs. Loddiges, with whom it flowered in 1838.

B. Mathieuana, Klotzsch = B. lineata.

B. nodosa, Hook. =. B. subulifolia.

(8.) B. nodosa, Lindl., *Gen. & Sp. Orch.* (1831), p. 114; *Id. Bot. Reg.*, t. 1465. *Epidendrum nodosum*, Linn., *Sp. Pl.*, ed. 1 (1753), p. 953; Jacq., *Select. Stirp. Amer.*, p. 226, t. 140. *Cymbidium nodosum*, Sw., in *Nov. Act. Sci. Upsal.*, vi. (1799), p. 73. *Bletia nodosa*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 437. *Brassavola grandiflora*, Lindl., *Bot. Reg.*, xxv. (1839), *Misc.*, p. 16. — Tropical America. Living plants were received from Mexico by Sir John Lubbock, Bart., and presented to the Horticultural Society in 1828, where it flowered in October, 1830.

B. odoratissima, Regel = B. cucullata.

(9.) B. Perrinii, Lindl., *Bot. Reg.*, xviii. (1832), t. 1561, *Bot. Mag.*, t. 3761. *Bletia Perrinii*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 436.—Received from Rio de Janeiro by Mrs. Arnold Harrison, of Liverpool, in whose collection it flowered in September, 1831.

(10.) B. retusa, Lindl., *Bot. Reg.*, xxxiii. (1847), sub t. 20. *Bletia retusa*, Rchb. f., in Walp., *Ann. Bot.*, vi (1861), p. 435.—Venezuela. Described from a specimen sent to the *Gardeners' Chronicle* in March, 1847, for a name, and said to be from Maracaybo, in Venezuela. The lip is cuneate-obovate, truncate, white with a little green near base; quite distinct from any other species.

B. Sloanei, Griseb.=B. subulifolia.

B. stricta, Hort., *Gard. Chron.*, 1885, i., pp. 501, 505, fig. 92.—A description and figure of the fruit of some Brassavola is given here under this name, which I am unable to trace. It probably belongs to some well-known garden plant, and I wish its possessor would send flowers of it, that its identity may be made out.

(11.) B. subulifolia, Lindl., *Gen. & Sp. Orch.* (1831), p. 115. *B. nodosa*, Hook., *Bot. Mag.*, lx. (1833), t. 3229 (not of Lindl.). *B. Sloanei*, Griseb., *Fl. Brit. W. Ind.* (1864), p. 620. —W. Indies. The plant figured in the *Botanical Magazine* was sent from Jamaica, in 1830, to Charles Horsfall, Esq., Mayor of Liverpool, in whose collection it flowered in January, 1832. This species is not at all well known. I have followed Grisebach in considering it distinct, retaining, however, Lindley's name as the older one. It is described from a specimen in Lambert's herbarium which I have not seen, nor is there anything so named in Lindley's herbarium.

B. surinamensis, Focke=B. angustata.

(12.) B. tuberculata, Hook., *Bot. Mag.*, lvi. (1829), t. 2878. *Bletia tuberculata*, Rchb. f., in Walp., *Ann. Bot.*, vi. (1861), p. 435. *Brassavola fragrans*, Lem., *Jard. Fleur.* iii. (1853), *Misc.*, pp. 78, 79, with fig., also p. 88; *Ill. Hort.*, vi., t. 280. *B. Gibbsiana*, Williams, *Orch. Gr. Manual*, ed. 6 (1885), p. 149.—Brazil. Introduced by Mr. Henry Harrison into the collection of his brother Richard, of Aigburth, Liverpool, where it flowered in July, 1828. The purple-brown spots on the segments readily distinguish it from all other species.

(13.) B. venosa, Lindl., *Bot. Reg.*, xxvi. (1840), *Misc.*, p. 20; *Id.*, t. 39; *Bot. Mag.*, t. 4021. *Bletia venosa*, Rchb. f., in Walp., *Ann. Bot.* vi. (1861), p. 438.—Honduras and Guatemala. Introduced from Honduras by Messrs. Loddiges, of Hackney, with whom it flowered in 1840. *R. A. Rolfe, Herbarium, Kew.*

(To be continued.)

SPOTTING OF PEACHES AND CUCUMBERS.

Fruit grown in perfection is without spot or mark, except that which comes from natural colouring or structure, and which usually adds to its attractiveness. Many of the larger fruits, particularly those of the orchard, are often seen, however, with black or brown streaks, extending frequently into spots of considerable size, much disfiguring, if not also distorting, their fair proportions.

The poorer the crop, the more likely the spots are to develop. Some cultivators have reasoned from this that the spots come because the plant is wanting in vigour, and that perfectly healthy growth will not be attacked. There is, doubtless, some amount of truth in this view, but a more intimate acquaintance with the origin and development of the spots brings the matter into a different light.

Professor J. C. Arthur, of the Agricultural Experimental Station, Indiana, U.S., has recently investigated this subject, and with special reference to two varieties of this class of fruit maladies, which have not, heretofore, received due notice.

From the observations thus made, it has been found that the spot disease of Peaches common in Indiana, is due to a fungus only recorded previously as occurring in Southern Austria, and named by Von Thueman, botanist to the Austrian Experimental Station for wine and fruit culture at Klosterneuburg, near Vienna, Cladosporium carpophilum. It is a fungus closely related to those which produce the scab of Apples and Pears; and under the microscope shows a mass of small filaments growing out from the surface of the fruit. Its presence detracts from the beauty, and therefore the market value of the fruit, and hinders its full growth, but does not affect the taste. Methods of keeping the disease in check have not yet been worked out.

Spotting of Cucumbers.

This spot disease was first observed at Geneva, N. Y., during 1887, when it was so abundant as to ruin the crop for pickling. It is caused by a closely allied fungus to that causing the Peach spot, and the name Cladosporium cucumerinum has been proposed for it.

The spots begin when the fruit is only an inch or two long, and show grey, slightly sunken places, with a very minutely velvety surface, usually about an eighth of an inch across, but running together into much larger irregular patches, particularly toward the flower end. Drops of a gummy substance frequently accompany the spots, giving the erroneous impression of insect puncture. The spots grow darker-coloured with age, becoming greenish-black, and form a small cavity just beneath the fungus-covered surface. No remedies have been tried as yet. *J. J. Willis, Harpenden.*

Orchid Notes and Gleanings.

ONCIDIUM FLEXUOSUM,

Although an old Orchid, this is certainly one of the most attractive at this season of the year. I had the pleasure of seeing it to-day in large masses at the seat of Captain Croker, The Grange, co. Limerick, where, under the charge of Mr. Wilmouth, are three plants, each carrying over forty spikes; and the best plant, I was informed, had sixty-three spikes before any were cut. The plants referred to are grown in an ordinary stove, and are remarkably strong and healthy. *J. D., Limerick.*

Mr. Sillem's Orchids.

It is pleasant to call in at any season of the year to inspect the collection of Orchids at Lawrie Park, Sydenham, the property of Augustus Sillem, Esq., because the old specimens one became acquainted with many years ago are still to be found there, as Mr. Sillem does not sell any of his plants, and new meritorious introductions are sure to find a place. A group of Miltonias in flower in the Cattleya-house was a noteworthy feature at this season of the year. We find that M. candida will flower more constantly in September than some others. It is a distinct and pretty species, with sepals and petals wholly brownish, and pale towards the margin; the whitish lip has a violet purple suffusion at the base. This species is easily grown. The true M. candida grandiflora is still rare, although there are many varieties that pass for it that are not the true plant. M. Regnelli purpurea was in flower. It is also a rare form of the species, has rather larger flowers, and a rich purplish lip. The sepals and petals are pale rosy-purple. M. spectabilis was represented by the normal species, and by two forms of M. spectabilis Moreliana, and M. spectabilis radians. The sepals and petals of the original species are whitish, and well marked with purple, whereas the sepals of M. Moreliana are of chocolate purple. The variety radians has the sepals and petals whitish; the lip, pure white, is marked with purplish lines. The Miltonias are easily grown, but they have the peculiar characteristic of becoming of a yellow tinge all over; this is caused by too free an exposure to the sun, and does not betoken a bad state of health. When in the yellow form, they flower more freely than they do if the leaves are kept of a nice green colour by shading.

Oncidium aurosum, not usually free-flowering, had formed two nice spikes in the cool-house; it is a rather pretty plant, and flowering in September, it is valuable. It is vigorous in growth, and has flowers with rich yellow sepals and petals, lightly blotched with brown at the base, and a yellow lip. It is evidently the same plant as the O. excavatum of Lindley.

The collection of Phalænopsis is the principal feature in the warm-house; such admirable specimens are a credit to the cultivator, as they cannot be obtained or maintained without incessant care on his part. *J. Douglas.*

Cattleya Dowiana aurea.

One of the finest examples of this noble Cattleya which I have seen comes from Mr. Robert Johnson, gardener to Thos. Statter, Esq., Whitefield, near Manchester. The sepals and petals are rich bright yellow; the large and handsome labellum almost wholly orange, even to the margin; the only other

colour being a narrow marbling of crimson on the edge of the lip, and the usual veining of crimson at the base, but less pronounced than in the ordinary forms. The variety seems to have the richest yellow colour of any of the large-flowered Cattleyas, and is very fragrant. Whilst not botanically different from the typical C. Dowiana, the form known in most gardens as C. aurea, which comes from the state of Antioquià, and is separated from the habitat of the original C. Dowiana by a distance of 500 or 600 miles, is a much easier plant to cultivate and flower freely than the Costa Rican C. Dowiana. *J. O'B.*

ORCHIDS AT THE FIRS, SYDENHAM.

Mr. Dorman has still an excellent collection of Orchids, some rare species and many well-marked varieties being found amongst them, and, for the season of the year, there are a considerable number of them in flower. Amongst Cattleyas was C. speciosissima, a species with sepals and petals of a light rosy-purple colour, and lip of a rich amethyst purple. A contrast to this was a nice plant of Lælia Dayana, small in size, but conspicuous by reason of its deep purple lip. This is sometimes described as a distinct species, but it is really only a form of L. pumila. The original species was discovered by Dr. Gardner when exploring a mountainous district near Rio de Janeiro. A few good forms of Cattleya eldorado were in flower. This Cattleya is a very distinct form of the labiata section; the flowers are only of medium size, but of exquisite form, and the rich orange-coloured blotch in the centre of the lip is conspicuous; the variety, C. splendens, was in flower.

Lælia elegans prasiata was beautifully in flower; three spikes were on the plant, one of which bore three very fine flowers. The sepals and petals are rosy-purple, with a flush of buff in the colour. The lip is violet-purple.

Galeandra Baueri was nicely in flower, and is certainly a distinct and pretty Orchid to cultivate. The sepals and petals are brownish-yellow. The lip purple, with yellow throat. These plants are not often met with, but they are easily cultivated if placed near the glass in a warm-house, when making their growth. It is very essential to keep them free from red-spider and thrips.

Odontoglossum Schrœderianum was in flower in the Cattleya-house. The peculiar formation and markings of the flowers scarcely bear out the supposition of Reichenbach, that of a cross between O. tripudians and O. Pescatorei. I rather agree with the same authority when he wrote of it as "A unique Odontoglossum, quite unlike anything that has appeared before in Europe." The flowers have a sweet perfume in the morning; the sepals and petals are white, barred and blotched with a brownish colour; the lip white, blotched with mauve-purple. In the same house, O. vexillarium superbum was conspicuous by its rose-coloured sepals and petals, and the triangular rich purplish-crimson blotch in the centre of the flowers. In the cool-house there were three fine forms of Odontoglossum Harryanum in flower. This distinct and fine species seems to like the same treatment as O. vexillarium. Amongst Masdevallias, M. Davisii, golden yellow; M. Harryana versicolor, and M. Roezlii, well represented the genus. Oncidium Forbesii was also distinct and good. *J. Douglas.*

FLORISTS' FLOWERS.

HOUSING CHRYSANTHEMUMS.

CHRYSANTHEMUM plants should now be placed out of the reach of frost, which sadly injures the blooms if wet with dew. An orchard-house or vinery from which the crop is consumed are suitable places for the plants. Give abundance of air in the absence of frost, and liberal supplies of water at the roots, and, to assist the plants in the production of large blooms, dressings of some suitable artificial manure should be given at least three times in the fortnight, but all the better if it be applied twice a week. The ventilators should be closed on frosty nights; and if blooms are required in the first or the second week in November, it may be necessary to give a little fire-heat by night and during sunless days, but removing the forwardest plants into a cool-house to retard them. *H. W. W.*

PRIMULINA TABACUM, N. SP.

THIS curious new monotypic genus is of a very interesting character, to the botanist. It has the habit and flowers of a Primula, and indeed so far is this likeness carried, that it is only by dissection one finds it is a Gesneriad. It was first discovered in October, 1881, by the Rev. B. C. Henry, at Tai-li, China, and described by Hance in the *Journal of Botany*, vol. xxi., pp. 169-170. Mr. Henry says that, when alive, it exhales a powerful odour of Tobacco, which it communicates to the hands of anyone touching it, and that it is universally known to the natives as *Shek-in*, signifying rock Tobacco. The leaves, as may be seen, are orbicular, oblong, obtuse, with a cordate base, and lobed margins. The specimens in the Kew Herbarium from the Kwantung province, are much finer than the living specimen in the Kew collection; but, as Dr. Hance observes, it is very delicate, and exceedingly troublesome to rear in cultivation. He says he had only a single living flower to examine, which may account for his describing it as albo-purpurascens, whereas the flowers on the specimen we have seen are violet, with a white throat, the limb about an inch in diameter. The whole plant is more or less covered with glandular hairs. Although Primulina tabacum may be described as a pretty alpine, its slow growth, and apparent miffiness, will almost certainly be against its making headway in cultivation. It is possible, however, if seed can be saved, that the progeny may be more easily managed than the parent (see fig. 52). *D. D.*



FIG. 52.—PRIMULINA TABACUM: FLOWERS VIOLET.

PLANT NOTES.

LACHENALIAS.

THESE are small bulbous plants, capable of yielding a maximum return for a very little labour. Their requirements are few and simple, and they may be grown by anyone having the means of keeping them from being frozen in winter, but any place where the temperature ranges from just above the freezing-point to 50° Fahr. would suit them admirably; indeed, the less fire-heat they get the better. If they are much forced, the foliage and flower-spikes are very apt to become drawn, which not only mars their beauty, but causes the flowers to be of much shorter duration, and the plants liable to be overrun with insects. The early part of August is a suitable season to overhaul the stock, and if it is desired to increase or add new sorts to the existing stock, early delivery by the nurseryman should be insisted on. Since the foliage ripened off, they have been put completely at rest by withholding water, and the tubers should be repotted before they begin to grow again, which they very soon will do. In repotting, turn the bulbs out of the soil, and sort them into various sizes, a plan preferable to potting the smaller offsets with the larger tubers. As to the size of pots to use, much would depend on individual requirement, but 48's or 32's will generally be found the most useful sizes. Sometimes large pans of the depth of those pots mentioned, are employed with excellent results; where this is practised, not only are more tubers required, but they are not, on account of their size, so easily accommodated with a suitable position in winter. Small pots work in better on shelves near to the glass, and are therefore more convenient if they have to be wintered in a mixed greenhouse, but the best position is in a low pit or frame, where frost is excluded. Properly crock the pots or pans, and fill them up to within about an inch of the rim, using friable loam as the staple of the compost, adding some fine leaf mould, a little pulverised manure, and sufficient sharp sand to keep the soil porous. Plant the pots rather thickly with tubers, leaving just as much space as will admit of a thin layer of soil between each bulb. When the pot is finished, there ought to be about ½ an inch of soil above the roots. After potting, plunge in a cold frame, and give no more water than is required to keep the soil moist; and as soon as the leaves appear, afford the frame plenty of air. The sorts commonly met with are L. tricolor, L. t. lutea, L. Nelsoni, and L. pendula. All are beautiful, their yellow, red and yellow, spikes of flowers being charmingly neat and elegant. *F. R.*

BOUGAINVILLEA GLABRA.

Those whose experience of this showy climbing plant is confined to pot plants, have only a faint idea to what proportions it will attain when planted out. I saw a good example to-day at The Grange, Limerick, where Mr. Wilmouth has it planted out in a narrow border, and trained up the back wall of a lean-to stove, where, at the present time, literally faggots of its showy flowers could be cut. *J. D.*

THE APIARY.

SEASONABLE HINTS.

QUICKLY feed up, if not already done. The late hot weather seems to be going, and a certain look about the gardens tells of the steady but sure approach of winter.

WASPS.

Many bees are now having to wage a continual warfare with these pests. Where the bees are strong, wasps have not much chance, but where wasps are plentiful—as they are here—it is best to nearly close the entrances, so as to save the bees unnecessary warfare. Otherwise it is best for entrances to be open, even all the winter.

After feeding is over, a few days could be given to the bees to settle down, then they ought to be packed up for winter. I think there is nothing like American cloth for this purpose, as a first covering. Put the glazed side downwards; then cover up with a few pieces of carpet, chaff cushions, or cushions filled with cork-dust are recommended as well; but we do not find these are necessary when the bees are strong, and no weak hives ought to be allowed. But there are sure to be weak hives in most apiaries. Well, do not treat them as the Spartans did the weak, *i.e.*, kill them, but mix them with others. It is very little use to bolster up weak hives. It is a good thing to look at

the hives quietly before packing up for winter, and see if the queens are all right. If a hive is found to be queenless, either give it another queen immediately, or join it to another hive. The latter is best, except done by an expert. Some people put all their bees into fresh hives just before winter sets in, but we think this is best done in the spring of the year. This part of the year ought to be more a season for settling down than being disturbed, besides the chances given for the bees to rob. Winter passages are also recommended by some. This means boring a half-inch hole through the whole of the combs, so that the bees can pass from one comb to another for food without leaving the cluster. It may be good in some cases, and some seasons. We have ourselves had bees die in a hive with plenty of stores, and suppose the bees could not get at them very well. There is no harm in trying it. *Bee.*

Plants and Their Culture.

The Cool Conservatory.—This structure should be cleansed inside and out and repaired, the inmates being meanwhile taken out. Large Camellias often placed in this house, will be still in the open air, so that the work will be the more easily done. All plants should be cleaned before being housed, and pots and tubs renewed if necessary. The creepers will require to be regulated, and Passifloras and other rampant plants thinned out. Lapagerias will now be in bloom, and care must be taken that the flowers not injured. This plant is subject to scale and are thrip, and should always have a thorough cleansing when at rest, but if infested with insects at the flowering time, the foliage must be sponged. The plants should get plenty of water and a top dressing of Clay's fertiliser occasionally while in bloom. Plumbago capensis will require to be treated similarly, and will then last a long time in bloom. The shading material, if it be removable, should be taken down when dry, repaired, and put away till next year. If the directions given in previous calendars were followed, there will be no lack of furnishing plants to fill this house. Such useful things as late-sown Celosias, dwarf Balsams, in 5-inch pots; Gomphrena globosa, small Fuchsias, and Mignonette; also the easily grown Nicotiana affinis is most serviceable if sown to come on now. To have this plant to flower in succession, sowings should be made at three different periods. The summer blooming Chrysanthemums will now be in the conservatory, and will fill the stages till the later growers come in. These latter should have the buds thinned as soon as they are formed, and be kept clear of suckers at the base of the plants; giving them plenty of liquid-manure, and keep a sharp watch for green-fly and mildew. They will soon require to be placed under cover, for which space must be made without delay. The autumn-blooming Begonias, of which Weltoniensis and Knowsleyana are the best-known, may now be placed at the warmest part of the conservatory, where they will flower for a long time, and may be afterwards removed to a warmer house. Cassia corymbosa is a valuable autumn bloomer, of easy culture, and should always find a place at this season among the decorative plants. A few Heliotropes, if they have been potted on for this purpose, will also be of use. Some of the early-sown Primulas will be ready to transfer from frames to this house, and if last year's plants were divided, they also will come into early flower. These plants should be allowed to carry nearly all their trusses for an early display, throwing them away when past their best; and to enable them to carry so much flower, doses of liquid manure must be afforded them occasionally.

Bulbs.—Early Roman Hyacinths will soon be ready to remove out of the plunging material, and should then be placed in a cold frame for two or three weeks, the light being gradually admitted. The main portion of the Dutch bulbs should be potted and plunged in cocoa-fibre or clean sifted coal-ashes. The last potting of Roman Hyacinths should be done now, also the useful Chionodoxa Luciliæ and Scilla siberica, which are useful flowers in good masses to employ with Roman Hyacinths. Schizostylis coccinea is now pushing up strong spikes of flower, and these will be found most useful. This plant does not require to be dried off so much as many other bulbs. Triteleia uniflora, Gladiolus the Bride, and Liliums of the early blooming section should be potted as soon as possible and plunged in a cold frame. Among the many beautiful varieties of Narcissus, the yellow hoop-petticoat and the citrinus and monophyllus species should be grown—they are most useful for pot culture, and the first two named are very effective when massed in pans for the outside rows of conservatory stages. *G. Wythes, Syon House, Brentford.*

The Hardy Fruit Garden.

Fruit-tree Planting.—As the best time for the planting of fruit trees is approaching, the number of trees to be planted should be ascertained, and a list prepared and forwarded to the nurseryman. As a rule, Peaches and Nectarines are the first to be attended to, therefore any worn-out trees or too late varieties which are to be replaced with suitable more ones, should at once be rooted out, and the stations got in readiness for the new trees. Peaches and Nectarines are very successfully grown in this neighbourhood, but as the late varieties are very uncertain as regards their ripening satisfactorily, I have decided to root out all of them at once, and to plant Waterloo, Hale's Early, Early York, Alice, Grosse Mignonne, Stirling Castle, Royal George, Bellegarde, Dymond (a grand Peach), Alexandra Noblesse, and the old Noblesse; while Napier, Elruge, Humboldt, Pine-apple, and Pitmaston Orange Nectarines will be included in the list. In preparing the places for the young trees, dig out the old soil to the depth of 2 feet, and 6 inches deeper if the soil is of a heavy nature, so that there is space for ample drainage, and the holes should not be less than 4 feet wide, measuring from the wall—more would be better. Every particle of old root and soil should be taken away, and after putting the drainage right, cover it over with turves, the herbage downwards; or, if these are not obtainable, a thin laying of strawy manure may be used. Fill up the holes with a mixture of moderately heavy fibrous loam, with a few shovelfuls of old mortar, and a good sprinkling of ½-inch bones. It may be stated that, when good soil is procurable, manure is not required; but poor soils, and those that are very heavy, will be much improved by mixing a little manure with them, but this should be decayed. Tread the soil moderately firm when it is fairly dry, preserving some of the finer part of it to work in among the roots at planting-time. As to the distance from tree to tree when planting long stretches of wall, it will be found that 18 or 20 feet is wide enough. Plant on the level when the soil is light and well drained, and in warm districts; but in cold parts, borders that are raised considerably above the garden level, are more suitable for Peaches, and Nectarines, and Figs. As the fruits are cleared from the trees, lose no time in getting them pruned, so that those branches left for fruiting may ripen well, and give them after pruning a thorough washing with the engine, to dislodge red-spider and any insect which may infest them. *H. Markham, Mereworth Castle, Kent.*

Fruits Under Glass.

The Vines.—The Vines in the early-house should be well ripened by this time, and ready for pruning. In pruning at the end of the month, choose well-matured, fully-developed buds to cut back to, and put some styptic on the wounds if there is any fear of bleeding, and keep the house cool, the lights being opened top and bottom, so as to give a thorough rest to the Vines before starting to force them. If not already done, the border may be top-dressed, and the house made clean, lime-washing the walls.

Vines in later houses, if their foliage is still fresh, may have their shoots shortened a little, and a mild heat kept up, with a free circulation of air, to aid the ripening of the young wood. In late vineries, where Lady Downe's Seedling and other late varieties of Grapes are growing, a generally even temperature should be kept up, but there should be no excitement of the Vines; and air should be admitted in favourable weather, carefully excluding damp air and fog, and avoiding the spilling of water. If the borders require to be watered, choose a sunny day for the job, and cover up the border with dry material at once, so as to prevent evaporation in a great degree.

All ripe Grapes should be looked over twice a week, removing decayed berries, and all laterals as fast as they appear. If the Muscats lack colour, the bunches should be gradually exposed to the light, by pulling the leaves on one side; and if the outside borders are in a sufficiently moist condition, now is a good time to cover them with corrugated zinc, or wooden shutters, or some other means of turning off rain and snow.

Pot Vines.—Any of these intended for early work should now be in a matured state; and, after pruning, they should be kept quite cool.

Figs.—In houses where the second crop of fruit has been gathered, the trees should have all their useless shoots removed, and a little fire-heat, with a free circulation of air kept up to ripen the wood, syringing the trees occasionally on fine sunny days. Later houses, in which the trees are in bearing, may have manure-water when water is required, the crop of fruit thinned if it be too large, and the shoots not too thickly trained. Give full exposure to the fruit at this late season, and a little gentle fire-heat, with a free circulation of dry warm air to assist them, and to impart flavour. *W. Bennett, Rangemore, Burton-on-Trent.*

The Kitchen Garden.

The Treatment of Beetroot.—This vegetable is best liked when it is of moderate size, and the flavour is best when the roots are freshly taken out of the earth. Frost will greatly injure it, and the plan I adopt to keep Beet in good condition is to lift the crop, select the best heads, great care being exercised in lifting and sorting them, so that no injury is done to the roots; an out-of-the-way border is then selected, and a trench is taken out deep enough to hold the roots in an upright position; these are then laid carefully along the trench, keeping them about 2 inches apart; the soil is then turned over on the roots, and another trench in front of the former, parallel to it, and about a foot away from it is made. It is best to keep the soil about 2 inches higher than the top of the roots. During hard frosts a foot-deep layer of straw, light litter, or tree leaves should be placed over the ground. The leaves of the plants should not be removed, and when they are taken to the kitchen, the leaves should never be cut close to the crown, as much of the juice would then flow out, the flavour be spoiled, and the flesh appear pale.

French Beans.—The sharp nips of frost of late will have destroyed the plants out-of-doors in many places. Those Beans which were sown in pits will now be in condition to furnish a supply of fresh pods, and where the pits are heated no danger need be apprehended from damp; on the other hand, when the warmth is merely that of the sun, or is derived from dung linings, the danger from damp is greater. When applying water to the plants in such structures, let it be a few degrees warmer than the temperature of the air, the watering being done as early in the morning as it is safe to do it without causing a check to the plants by admitting cold air. By so doing, superfluous moisture has time to evaporate before the evening. Beans in heated pits should be frequently syringed to ward off red-spider. A sowing should now be made in pots, and in doing so, fill the pots two-thirds full of a mixture of loam, leaf soil, and Mushroom-bed manure, and in each pot, place six beans, pressing these about 1 inch into the soil, set the pots near to the hot-water pipes, and when the plants are 1 inch high, place them close to the glass to prevent weakly growth. When two leaves have pushed forth, take away the three weaker plants in each pot, and place some rich compost as a top-dressing to within 1 inch of the rim of the pot. A sowing should be made at intervals of three weeks.

Peas.—Little Gem, American Wonder, or Chelsea Gem Peas may be sown in 8-inch pots, to be placed in frames until the cold weather shall prevent them making progress, when they may be removed to an early vinery or Peach-house, and grown on shelves near the glass. Peas may be sown in boxes to furnish stems, to be cut when a few inches high, as flavouring for soups. *W. M. Baillie, Luton Hoo, Luton.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	SEPT. 30	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Greenhouse Plants, at Gipsy Hill, by Protheroe & Morris.
TUESDAY,	OCT. 1	Roses, Conifers, and other Plants, at the City Auction Rooms, by Protheroe & Morris. Lilium auratum and others, at Protheroe & Morris' Rooms.
WEDNESDAY,	OCT. 2	Dutch Bulbs, at Stevens' Rooms. Greenhouse Plants and Dutch Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	OCT. 3	Dutch Bulbs, at Protheroe & Morris' Rooms. Orchids, Rhododendrons, &c., at Lamoran Rectory, Cornwall, by Mr. H. Thomas.
FRIDAY,	OCT. 4	Established Orchids, by order of G. T. White, Esq., at Protheroe & Morris' Rooms.
SATURDAY,	OCT. 5	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—54°.5.

The Chiswick Vegetable Conference.

THE much looked-for Vegetable Conference is a thing of the past, but it must have left behind a favourable impression, which will not readily be effaced. We have had in the past plenty of vegetable exhibitions, but whilst showing to us the highest forms of kitchen garden produce, displayed temptingly, though perhaps rather monotonously, there is an air of unreality about them, because they do not present to us the average produce of our gardens, but only choice selections. Now the charm of the great vegetable display at Chiswick was found in the display of vegetables pretty much as they are in general cultivation. There were none of the meretricious aids to effect which mark the prize-winning collections in competitions. The various exhibitors who so ungrudgingly sent or brought their products from all parts of the kingdom, were more animated by a desire to display their samples and add to the great educational work in hand, than to make a display; and yet, all the same, there were products on the tables which indicated at once the highest culture and excellence of form to be found in any competitive show at any time.

If there was, during the progress of the Conference arrangements at their earlier stages, some doubt as to the response which would result from the appeal made to the gardeners and traders of the kingdom to send their products, all such fear was happily dispelled on Tuesday morning, for the result exceeded the most ardent expectations. The only drawback was the wretchedly wet weather which prevailed, and yet that drawback was tempered by the assurance that the downpour would throughout all the southern parts of the country be productive of exceeding good. The presence at the Conference of those eminent continental seedsmen, Mr. Henry de Vilmorin, of Paris, and Mr. John Benary, of Erfurt, and who took part with such exceeding heartiness in the duties of the judges or censors, gave to the gathering an element of an International kind, the value of which cannot be overestimated, and which we very cordially desire to see largely augmented on future occasions. British gardeners will be interested to learn that, although in France horticulture enjoys to a large extent State support and protection, yet Mr. DE VILMORIN speaks in the highest praise of gardening as practised here, and was loud in his commendation of the splendid examples of British skill in the vegetable department seen at Chiswick. Mr. DE VILMORIN himself sent over from France numerous capital examples of the produce of that country, which did not fail to elicit the warmest commendation.

The admirable way in which the censors entered into the difficult and onerous work of selecting types and awarding certificates in the various classes they had under their notice, merits all praise. Rarely have we seen more hearty or more intelligent interest shown; interest, indeed, which seemed to grow as the work advanced, and there can be no doubt whatever that the publication of these gentlemen's reports will be awaited with more than ordinary anxiety, and for that reason they should be collated and published at the earliest possible moment. Some twenty-four gentlemen, seedsmen, market gardeners, and private gardeners, readily and cheerfully accepted the responsible duties allotted to them, and admirably discharged them. Very naturally, the chief difficulty found by the jurors in the discharge of their duties was that of determining the types, and the most important lesson of the Conference derived from this difficulty evidently is, that in any future gathering of a similar kind, the type must be determined beforehand, and the exhibits classified by the various growers before being sent in.

On the recent occasion there was no general assortment of types, but they were all mixed up, so that the work of the jurors was rendered exceedingly difficult. It is obvious that henceforth there must be no mixed collections. The schedule of any future vegetable conference should ask for exhibits of a specific nature, the types being determined beforehand. Thus, taking Onions, for instance—and Onions formed at the Conference a remarkable display, in spite of their mixed-up condition—we should invite not more than three sorts—say, of Silver-skins, of flat, or Spanish; of Globe, or oval; and of the Tripoli types, although, perhaps, the latter would be found plentiful amongst the others. Also single dishes should be asked for under each heading, from those unable to send three sorts. Then there would be at once secured a most valuable means of comparison. Perhaps all the growers would not be exact in their respective types, but those errors the jurors could rectify.

Carrots proved to be a singularly attractive section, but here again there was much confusion of form and of nomenclature. The jurors had to report that many samples of so-called intermediate varieties were really long forms, the growers having probably been misled by names. Now we find in Carrots the true Short Horn; the large stock illustrated by the Nantes type; the Intermediate of the now very popular and well-known form; and the long, tapering form, both red and white. To have these four sections classified beforehand would be an immense gain, and, having regard to the remarkable readiness shown at the Conference on the part of growers to fulfil, as far as possible, the requirements of the committee of management, there can be no doubt but that in relation to suggestions for future gatherings they would fall in with them readily. Perhaps it would be well in future years to limit the area of the Conference, so far as vegetables are concerned—(and the remark applies with equal force to all these Chiswick conferences)—to such subjects as seem to have allied characters. Thus, tubers, bulbs, and taproots would of themselves suffice to form a remarkably instructive show, whilst all the green vegetables, with fruits and pulse, might be taken another year, and so on biennially. But there is yet another suggestion worthy of all consideration: it is that we ought to have two of such conferences yearly—one in June, for the best summer vegetables, and one in the autumn, for all those varieties which furnish our winter vegetable supply. We have with the diverse seasons such diversity of vegetables, that the autumn finds few or no representatives of the best and most valuable of the summer products; therefore the deductions from one season's produce are necessarily largely to be discounted by the products of another period. Even if we could hold smaller Conferences monthly during the summer and autumn, they would hardly be too numerous to enable full justice to be done to the many excellent varieties of vegetables in cultivation. As it was, we saw many of the vegetables in defective form, because they are hardly at their best till November; whilst some others were past their best, because so late.

The class for novelties produced little merit, and even the salads were not equal to our capacities by a long way, but the present time of the year is hardly a salad season.

The short time intervening between the pulication of the Conference schedule and the holding of the gathering did not enable that preparation to be made, which, otherwise, would have been productive of such great results. If the seed trade, operating through their vast army of gardener customers, take the matter up with zest, they could help to the production of quality and variety in the exhibits, such as would astonish even the most *blasé* frequenter of exhibitions.

We cannot leave this matter without paying tribute to the Royal Horticultural Society for the spirit of enterprise displayed in encouraging these conferences, to the committee of management for the admirable manner in which the arrangements were carried out, the burden of which naturally fell heavily upon Mr. BARRON, and not least to the unselfishness and magnanimity of the numerous seed firms and gardeners, who not only sent their products, but came themselves to help to make the Conference a success. The ordinary prize competitions of the provincial or local horticultural shows have not absolutely demoralised everyone, and so far as the Royal Horticultural Society is concerned, we hope that it may so grow in the estimation of the horticulturalists of the kingdom, that it may not be needful except in special cases that it should offer many prizes to ensure the hearty co-operation of all.

It is, to be regretted, that the private gardeners of the country did not exhibit more numerously, but, as the exhibition was one for instructional purposes only, and was not designed as a show of cultural skill, there was, of course, not the incitement of emulation and rivalry which pertains to an ordinary show. Still, gardeners should not regard the work of the Royal Horticultural Society from a merely selfish point of view, but as one undertaken solely for the benefit of horticulture and of those who practice the art. The fierce rivalry of prize competitions is, of course, not without its advantages, but the object of the Royal Horticultural Society most assuredly should not primarily be devoted to such displays, but more particularly to solid substantial work, and to the collection and diffusion of useful information. By means of these Congresses, and



Fig. 53.—New types of hybrid Gladioli. (see p. 360.)

especially by maintaining an experimental garden at Chiswick, much more real good can be done than by providing a "scramble" for prizes to be used for purposes of puffing and self-laudation. We should also have liked to have seen the market-garden and the allotment-garden elements better represented, because it is quite certain that much more may and, we trust, will be done in the future, in the way of commercial vegetable culture and preservation, than heretofore.

It is requisite also that at these Conferences, exhibitors should, as we have indicated, be self-sacrificing enough to split up their collections so as to permit of fair comparison. In a competitive show, this is too much to ask an exhibitor to do, but where the object is not the glorification of the individual, but the advancement of the craft in general, it is not much of a sacrifice that is demanded after all.

Very few absolute novelties, as we have remarked already, were exhibited, and this we look upon with regret, for there is no doubt we are far too conservative in the matter of vegetables, and that many more kinds might be used than are known to our cooks. It is to be regretted also that in such a specially instructive exhibition Messrs. SUTTON, of Reading, did not show some of the results of their interesting experiments in hybridising the Potato.

With regard to cookery, our Continental neighbours are infinitely better off than we. The manner in which vegetables are often cooked in this country is really a disgrace to our kitchens. The vegetables served up at the dinner at Cannon Street Hotel on the Tuesday evening formed no exception to the general rule, and the Royal Horticultural Society might do worse than offer a prize on some suitable occasion for the best cooked vegetables.

The dinner at the Cannon Street Hotel, on Tuesday night, was largely attended by the fraternity, and passed off to the general satisfaction. Mr. VEITCH presided, and worthily set forth the praises of the gardener. Mr. WILKS made an admirable speech, proving once more what an excellent Hon. Secretary the Royal Horticultural Society now has. Mr. HIBBERD was in "good form," and all went well.

The decorations of the saloon consisted largely of fine Palms kindly lent by Messrs. Veitch & Sons, and Messrs. Wills & Segar.

The Congress was opened on Wednesday by a speech from Sir TREVOR LAWRENCE, the President of the Society, who, in the course of his remarks, animadverted not too severely on the manner in which English cooks, as a rule, spoil the excellent material submitted to them by the gardener, expressed his astonishment that the preservation of vegetables was not practised to a greater extent in this country, and that we should be dependent on our foreign neighbours for what we might equally well, if not better, produce ourselves. The President called attention to some excellent vegetables much neglected in this country, such as the Celeriac, the Cardoon, to which he might have added the Finocchio. He counselled the use of Marrows in a much earlier state than we are accustomed to eat them, a remark that provoked dissent from one of the audience, who was promptly asked if he had made the experiment, and, as no answer was vouchsafed, the presumption is that he had not. The President also gave a receipt for scrambled eggs, recommending that large pieces of Capsicum pods should be mixed with the eggs to diffuse flavour, but to be picked out and not eaten on account of the great heat. The use of Tomatos was also advocated in this connection, Sir TREVOR making the mouths of his auditory water by the way in which he descanted on the good things of the vegetable world. Lastly, in becoming terms, the President thanked the Congress Committee and the gardeners for their valuable services on this occasion. The President's speech was felicitous, and every one of his auditors felt what good work the Society is now doing, and how worthy it is of extended support.

Following Sir TREVOR, Mr. VEITCH read a paper dealing with the history of cultivated vegetables, and sketching briefly the progress of each of the principal vegetables during the last quarter of a century. He alluded to the excellent work carried on at Chiswick, where all the vegetables, new and old, are in turn submitted to growth under the same conditions, and their qualities compared and noted by qualified experts. The progress made in the several vegetables seems to have been most marked in the prolongation of the season of use by the introduction of early and of late varieties respectively. As to quality, many of the older sorts still hold their own. There has been, said Mr. VEITCH, no lack of activity among raisers, and still more, there has been no lack of names, many of the varieties having gone to the font several times. He exhibited seed catalogues of thirty years' date, which were thin and scanty indeed, as compared with the thick and marvellously illustrated productions of to-day. Mr. VEITCH—and none knows better the good work the Society has done and is doing—wound up with a hope that the gardeners would strain every nerve to maintain the old Society, whose work was undertaken for no selfish purpose, but for the common benefit of all.

Mr. HIBBERD spoke on the culture of Asparagus, and was still speaking when our reporter left. Mr. NORMAN was to follow on Salads.

NEW GLADIOLI.—Something like a "sensation" was experienced lately, when Messrs. VEITCH exhibited, on behalf of M. LEMOINES, some new hybrid Gladioli; raised, we believe, by M. MAX LEICHTLIN in the first instance, between G. Saundersi and G. gandavensis. G. Saundersi is comparatively hardy, and has scarlet flowers, spotted with white on the the lower segments. President Carnot, one of the new race, has very broad open flowers, the perianth segments spreading, bright crimson flaked on rose, the two lower ones of the inner series have a yellowish-white blotch at the base, mottled and streaked with crimson. From the brilliant coloration, the flat form of the flowers, the remarkable vigour and hardiness of the strain, there is no doubt these Gladioli will satisfy the public taste, and introduce a new element of beauty into our gardens. Mr. GUMBLETON has referred in detail to this new race in our issue for August 10 last, p. 154. President Carnot is shown in the centre of the group in the illustration on p. 360, the flowers from which the drawing was made measuring 5 inches across. On the left-hand side is the variety André Chenier, of Lemoines' hybrid spotted strain; the colours are cream, flushed with pink, with the two lower inner segments purple, with golden-yellow apices, which render it very conspicuous. The third variety shown is Alsace, of the same section as the last, the colours being pale buff and purple; both these flowers are much cupped. The superiority of the new Nanceianus type is evident.

GARDENERS' ORPHAN FUND.—We understand that the Chiswick Gardeners' Association will give a concert in aid of this institution on October 31, in the Chiswick Vestry Hall.

THE LATE M. J. BERKELEY. — Many of our readers will be pleased to know that a notice of the lamented mycologist, from the pen of Dr. J. STEVENSON, will appear in the October number of the *Naturalist*.

BOTANIC GARDEN, MARITZBURG, NATAL.—For some few months this garden has been under the management of our well-known correspondent, Mr. R. W. ADLAM, whose various interesting accounts of his "treckings" in Natal and the Transvaal have appeared in these pages. In consequence of the Botanic Garden at Maritzburg being, to a certain extent, under the control of a committee of gentlemen not well acquainted with horticulture, Mr. ADLAM felt himself hampered too much in his work, and he has very properly resigned the appointment, preferring to start in business as a nurseryman at Pretoria, Transvaal.

CRINUM BRACHYNEMA.—This is a very elegant flowered species, a flowering head of which has been forwarded to us by Mr. JAMES SMITH, of Mentmore Gardens, Leighton Buzzard. It belongs to the section with a curved corolla tube. The plant in question has an umbel of from fifteen to twenty flowers, about 2 inches across, borne on a scape nearly 2 feet in length, and which is produced some time in advance of the leaves. It is a native of the Bombay Presidency, from whence a bulb was sent to Kew, by Mr. Woodrow, in 1870. A great charm exists in the pure white colour of the lobes of the funnel-shaped perianth, which is sweetly scented. The stamens are very short, and are borne at the orifice of the tube, which they close over—in fact, that is a distinguishing feature. A figure is given in the *Botanical Magazine*, t. 5937.

MAIDSTONE.—Mr. HENRY LAMB has published a list of the flowering plants of Maidstone, omitting, however, some very important families, such as Grasses, Rushes, Sedges; while, on the other hand, some plants of the Tunbridge Wells district, a totally different geological area, have been inserted.

THE LAURELS.—Dr. MEZ has published in the *Jahrbuch* of the Botanic Garden, Berlin, a monograph of the American Laurels. It is constructed on the models of the monographs in DE CANDOLLE'S *Suites au Prodromus*, and presents some improvements in point of typographical detail. The omission of dates of publication of the species referred to is to be regretted. The enumeration of species in Latin occupies nearly 500 octavo pages, in addition to which there is an appendix on the morphological structure in German. A few illustrative plates and an index make the work a very complete one.

LILIUM TESTACEUM.—It is stated that this Lily, a supposed hybrid, has produced its seed-vessels for the first time at Verrières, in the garden of M. HENRY DE VILMORIN. Abies cilicoca has also, according to the *Revue Horticole*, produced its cones in that establishment.

BIG MANGOES.—A Mango weighing 2 lb. 3 oz. was sent lately to the Agri-Horticultural Society of Madras from the Government Gardens, Bangalore, a note from which place states that Mangoes, weighing 3 lb. each, and of local produce, may be seen in the fruit-stalls, where ten of the monsters may be purchased for a rupee. The Mangoes sent were of an indifferent quality, but useful for pickling.

SESELE GUMMIFERUM. — A specimen of this was lately sent us from the College Garden, Dublin, by Mr. Burbidge. It is a stout, guarled, knotted, grey umbellifer, with rather fleshy bipinnate leaves, with broad linear-oblong segments, and dense umbels of pale lilac or pink flowers. The main umbels are not surrounded by bracts, but the secondary ones have each an involucre of spreading linear bracts. Much gum exudes from the stem.

JAPANESE DISTORTIONS.—The dwarf trees so much affected by the Japanese are, according to M. VALLOT, produced first of all by selecting a young plant of a dwarf variety preferably, which is placed in a pot and allowed to form some roots, the tap-root is then removed, and subsequently the leader shoot, the succession shoots are twisted in every direction, being tied down to make them grow in the required manner, Constant pinching and pruning are also resorted to,

and the plant kept in a shallow pot, and the earth kept removed for a certain distance from the roots, which thus are partially uncovered and resemble the legs of a spider, the body of the creature being represented by the trunk of the distorted tree. The time required for the production of these curiosities is long. Many trees die in the process, or refuse to submit to the continued restriction, in consequence the price is high.

Bromeliads.—M. Ed. André, who has not only collected many beautiful plants in Colombia and adjacent countries, but has been also the means of introducing them into cultivation, has just published an illustrated account of the Bromeliads. We hope shortly to notice the work at greater length.

Chrysanthemum Conference.—The Royal Horticultural Society is determined to lose no time; it sets a valuable example of enterprising cropping, and will lie fallow no longer than it is compelled from force of circumstances. The regulations for the Chrysanthemum Centenary Conference and Exhibition, at Chiswick, on November 5 and 6, are now published. The schedule has been issued, and a paper of questions circulated among growers, not necessarily exhibitors—questions, which, if answered even partially, must bring out a large amount of valuable information. We trust possessors of books and pictures relating to Chrysanthemums will not do as they did at the Rose Conference, omit to bring them—because they thought some one else would or that they would not be required!

Primula Poissoni.—It appears that the Paris Floral Committee is as loth to recognise the importance of a new plant, which is not at the moment a plant for market, as is the London Committee. One of M. Franchet's newly-described Chinese species, sent home by the Abbé Delavay, and a plant of great interest and merit as it seems, received only a Second-class Certificate. The proper award for such plants is a Botanical Certificate of at least equal rank as the Floral Certificate.

Aloe fulgens.—This is a species cultivated in the Palermo Botanic Garden, and figured and described in Baron Todaro's *Hortus Botanicus Panormitanus*, vol. ii., t. 33. It is a species with deltoid lanceolate channelled leaves, remotely dentate at the margins, and with a central paniculate inflorescence, the branches of which are erect, and bearing elongate pyramidal many-flowered clusters. The flowers are of a rich scarlet colour.

Flore Forestière de la Cochin Chine.—The fourteenth part of this publication devoted to the description and illustration of the trees and shrubs of Cochin China has recently been issued. In it M. Pierre describes and figures various Sterculiads and Dipterocarps. Among the latter is a species newly described under the name of Dipterocarpus Dyeri, and which is a noble tree, greatly employed by the natives, both for its timber and its resin.

Cyprus. — General Sir Robert Biddulph, Governor of Cyprus, in an address before the British Association, gave a detailed account of the geographical features of the island. The whole of the forest lands of Cyprus occupied an area of 400 square miles. When the British entered into occupation, the ravages of the woodcutter were in full operation, and it could not be doubted that the final destruction of the forests was only a question of time. Then goats were very destructive to the forests, destroying the trees where they were allowed to pasture unrestrictedly. While in Italy the number of goats was 16 per square mile, in Cyprus the number was 64 per square mile, and 1430 for every 1000 inhabitants. The destruction of the forests produced climatal disturbances, and diminished the wealth and productiveness of the island. The Locust plague increased wherever the forests were destroyed. The farms were all worked by their proprietors, and the consequence was that there were no wealthy persons and no beggars. There were in the island 600,000 registered holdings of real property—that was to say, more than three for each inhabitant.

"Catalogue of Orchids."—The *Nederlandische Orchidophilen Club* has published in pamphlet form a list of the Orchids cultivated in Europe, with their principal synonyms. The arrangement is alphabetical, and the margin is sufficiently wide to admit of the introduction of new names or of short notes. An indication of the native country is given, but which is, as usual, much too vague. Ind. Or. may mean any part of the peninsula of India, from the Himalayas to Ceylon, from Assam or Tibet to Singapore, with corresponding diversity of climate. An asterisk is attached to those species deemed most worthy of cultivation, and other symbols indicate that the plant must be grown in a hot, warm, or temperate house, or in the open air. Such a list has long been a desideratum. It is published by a private society for the use of its members, but we believe that copies can be had at a slight cost from Mr. Goemans, Gloucester Road, Kew.

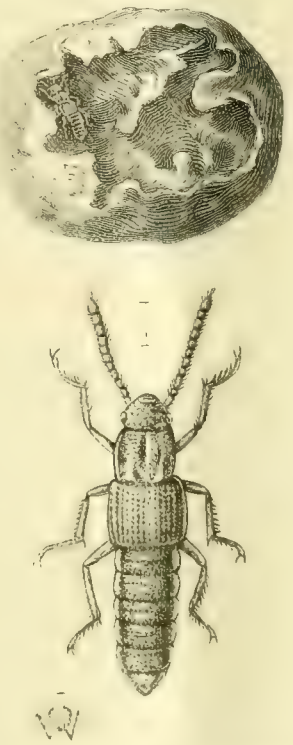


Fig. 54.—Potato-tuber Beetle (Coprophilus striatulus).

Problems in Horticulture.—We are glad to see our excellent American contemporary (*Garden and Forest*) calling attention to some of these, such as the direct influence of the pollen on the fruit, the effects of grafting, the influence of hybridisation, &c. Let these subjects but be started, and the widest differences of opinion become manifest among practitioners. The truth is, such matters are not as a rule to be settled by mere observation, or by the experience, so called, even of the wisest. They demand patient research, and searching experiments with all the means or appliances that advanced science can devise. Many controversialists appear to be destitute of even a smattering of first principles, and their dogmatism is in inverse ratio to their knowledge.

Begonias as Bedding Plants.—Very noticeable in the flower garden at The Grange, co. Limerick, at the present time are five large beds of tuberous-rooted Begonias. The wet weather lately experienced has considerably marred the beauty of most of the other beds; the Begonias, however, have thoroughly appreciated the moisture, judging by their present experience. Mr. Wilmouth, who takes great interest in Begonias, is justly proud of his success, and seeing that many of the blooms are over 6 inches in diameter, of good form and substance, it is not to be wondered at. They were raised from Messrs. Laing's strain, and quite equal many of that firm's noted varieties.

Lily of the Valley.—The *Illustration Horticole* tells us that the Silesian Railway brings into Berlin every evening during the season truck-loads of these flowers. Each wagon contains thirty baskets, each basket contains 300 bundles, each composed of 100 stalks, that is to say 900,000 per wagon. The little bouquets sold in the streets comprise ten stems, so that each wagon contains 90,000 of them.

POTATO-TUBER BEETLE.

The tubers of this most valuable vegetable are not subject, in any great degree to the attacks of insects; amongst the latter, however, are occasionally to be found the caterpillars of the omnivorous heart and dart-moth (Agrotis sp.), and several species of mites, figured by Mons. Guérin Méneville in a memoir on the insects attacking the Potato. When partially decayed, they also invite the attacks of some of the scavenger groups of small insects of the families Nitidulidæ and Staphylinidæ, the latter of which, generally termed rove-beetles, are very numerous, both in the number of their species and in that of their individuals, which prey upon decaying animal and vegetable matters, especially fungi, agarics, &c., in which they chiefly reside; they are also found in profusion under heaps of putrescent plants, so that they may be regarded as amongst the most pre-eminent of scavenger insects.

The memoir of M. Guérin Méneville above referred to, is entitled "Note sur les Acariens, les Myriapodes, les Insectes, et les Helminthes observés jusqu' ici dans les Pommes de Terre Malades," and was published in the *Bulletin des Séances de la Société Royale et Centrale d'Agriculture of Paris*, in October, 1845. The mites described in this memoir are named Glyciphagus feculorum, Guér. M., and Tyroglyphus feculæ. Amongst the Myriapods Julus guttulatus of Fabricius (J. fragrarius, Lamarck) is mentioned. Of insects, a small Staphylinea of the genus Calodera, two small coleopterous larvæ, undetermined, a minute beetle of the genus Trichopteryx, and the larvæ of an Elater (Agrotis segetis), a small dipterous fly of the genus Limosina (L. Payenii), and the larvæ of three other species of Diptera; and of the Helminthes, the Rhabditis tuberculorum are described in this memoir. But M. Guérin Méneville considered that most of these insects were accidental parasites of the Potato, which, he thought, had for the most part received some injury in its growth from the weather, or accidents.

A rare instance of the attacks of one of the species of these small Rove beetles upon apparently sound tubers of Potatos, has recently fallen under our notice, communicated in the month of July last, by a correspondent of the *Gardeners' Chronicle* from St. Ann's Heath, Egham. Of this species we found nearly a hundred specimens burrowing into a single rather small tuber, which must clearly prove how numerous the individuals must be, although hitherto rarely found otherwise than singly. The tuber is represented of the full size of the specimen attacked in the accompanying woodcut (fig. 54), and the beetle itself beneath, the natural length of which is indicated by the line above the head of the insect, which is scientifically known as Coprophilus striatulus, the first name meaning "lover of excrement," and the latter given in allusion to the deeply impressed lines on the short wing-covers. The insect is highly polished and black, but (in a less fully developed state) of a chestnut colour, with the wing-covers more or less pitchy. The body has the sides nearly parallel (as in the numerous species of Oxytelus, to which the insect is nearly related), and more or less severely punctured, the

elytra have strongly impressed and punctured striæ, and the thorax is prettily sculptured with impressed irregular sulci; the fore tibiæ are finely spinulose, and the tarsi have five joints, the first four very short but distinct, the maxillary palpi have four joints, the last being as long as the preceding, and rather pointed at the tip. The male has the seventh ventral segment prolonged and somewhat rounded at the end, and the female has the same segment produced into a somewhat rounded angle. The insect is figured in Canon Fowler's *Coleoptera of the British Islands*, vol. ii., p. 394, plate 67, fig. 9. In which work it is stated that it is found in hay-stacks and vegetable refuse, hot-beds, &c. It is generally distributed, and rather common throughout the London, Southern, and Midland districts.* In Lincoln it is common on pavements in early spring, running in the sun but not found later in the year; rarer further North, Scarborough, Manchester, &c.; Northumberland district not common; Scotland, Lowlands, scarce; Solway, Tweed, Forth, and Dee districts. *I. O. Westwood.*

HOME CORRESPONDENCE.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

A HEAVY SOUVENIR DU CONGRÈS PEAR.—Pears are scarce in this locality, and good fruits are few and far between; but from a young tree, of Souvenir du Congrès, growing on a south wall here, I gathered a fruit last week which my employer, Mr. H. P. Markham, had the curiosity to have weighed, and which turned the scale at 19½ oz. It was a good shaped fruit, and well coloured. A tree or two of this variety should be planted where early Pears are required, as it is a robust grower, and the fruits, if not of first-class flavour, are nice eating. The soil here is sandy, with some iron in it. *W. Cory, Sedgebrooke, Northampton.*

ROYAL SALEP.—Under this heading, p. 304 of a recent issue, there is mention made of the identification of Badsha, or Royal Salep, with a species of Onion Allium Macleani. Of the four sources of salep, three are well-known and thoroughly substantiated, none of which are Onions. Of the fourth, "badassahi salem," described as "a very cheap and poor substitute for true salep," the source is unknown. Is this the "Royal Salep" above alluded to? If so, why "Royal?" *Wm. E. Dixon.*

APPLE AND PEAR CONFERENCE.—Had "Corpo Campo" (see p. 334) confined himself to calling attention to the errors occurring in the *City Press* of the 18th inst., in regard to the notice of the tenth volume of the Royal Horticultural Society, he would have been doing a public service. But when he goes out of his way to make allusions to the latter journal and its plates, he is overstepping legitimate bounds. "Corpo Campo" has certainly no more grounds for associating Mr. C. B. Saunders, of Jersey, with the editorship of *Amateur Gardening* than he has for associating Mr. J. Douglas with the editorship of the *Gardeners' Magazine*, since nothing is mentioned in the *City Press* to lead him to suppose such a thing definitely. Any one who knows me will, I am sure, at least credit me with the possession of sufficient honour to abstain from taking credit for fame which justly belongs to others, and especially so in the case in question. It is quite evident from the tone of the latter part of "Corpo Campo's" note that he possesses a certain amount of animus against the journal he designates a "thing," and has used the above opportunity to hurl indirect abuse against it and its editor. Had the writer had the courage and manliness to have attached his full name instead of a *nom de plume* to his note, then your readers would have been better able to have judged his reasons for depreciating the journal. Perhaps you will allow me to point out for the information of your correspondent that *Amateur Gardening* requires no forcing into public notice, it being already well known; and further, whatever "Corpo Campo's" personal opinion of the coloured plates may be, it is sufficient for both proprietors and editors to know that they are appreciated by the public. Finally, I trust to your usual fairness to accord me space for reply. *J. W. Sanders, Editor of Amateur Gardening.*

—— The editor of the *City Press* must be labouring under some mistake in attributing to me the editorship of *Amateur Gardening*, a publication with which I am unacquainted, and which I do not recollect having seen. Neither have I seen the plates referred to by "Corpo Campo" and cannot express an opinion as to their merits. The remarks in the *City Press* must have been made without due consideration. The editor, or reporter, may have a better acquaintance with me than I have of myself to attribute to me the qualifications essential to editorship. I thank "Corpo Campo" for calling attention to the error. He is evidently a champion of fair play and the correct application of titles. I am not an editor, but a practical gardener and nurseryman. *C. B. Saunders, Jersey.*

CHOISYA TERNATA.—This beautiful shrub has proved hardier here than the note on p. 331 implies, for we have two plants that have now passed through two winters in safety; one is growing in the open border, and this had its leaves slightly browned at the edges last winter, but was not otherwise injured; and last winter killed many things here which in a usual way escape injury. The other plant is more favoured, as it is growing against the house, and is partially protected by a Beech tree that overhangs it; and this one looked the best when the winter was over. Both have since flowered well, although they do not grow so strongly as they do under glass. Both of them were grown for several years in pots, and had become much pot-bound, and the wood thoroughly matured, and this may perhaps have assisted them in withstanding the frost. Shoots in a half-ripened state strike easily in the spring, and make good plants quickly if kept in the greenhouse. *W. H. Divers, Ketton Hall.*

CUCUMBERS IN AMERICA 150 YEARS AGO.—Those who have a taste for literary and other antiquities, find few more pleasant occupations than in poring over the quaint newspapers of the earlier part of the last century, for, although the size of these papers is much less than those of the present day, it cannot be said that their interest is less varied. In the Burney Collection, now deposited in the British Museum, we recently came across a single copy of the *Virginia Gazette*, dated August 12—19, 1737, and printed at Williamsburg. It contains the following exceedingly interesting item of news:—"There grew this summer, in the gardens of Mr. Daniel Parke Custis, in New Kent County, a Cucumber of the Turkey or Morocco kind, which measured a yard in length, and near 14 inches around the thickest part of it. Great care was taken in watering it, the weather having been for a long time very dry; and what is remarkable, it grew 3 inches in length in one night. Several others grew on the same vine, and some of them nearly as large as this. They are ribb'd, almost like a Musk Melon, coloured like a Water Melon, and taste much like the common Cucumber. Several curious persons have been to view them, the like having never been seen in these parts before." It is evident that this copy of the *Virginia Gazette* was sent by the grower to a correspondent in England, for against the paragraph just quoted there is written, in a contemporary hand, this statement,—"I sent the seed of this long Cucumber to Col. CUSTIS—it came from Turkey. *J. Robinson.*

LILIES AT OAKWOOD.—Lilium speciosum lancifolium is now out in its full beauty, rubrum, roseum and album, and being the last of the garden Lilies, the season will soon be over, and the time has come for my usual note on what it has been with us. Most species of Lilies have been unusually fine; I suppose the warm dry season has suited them. L. Browni was especially fine, one clump had twenty-three flowers out at once, the stems all about the same height, and some with three flowers. L. Hansoni was very strong, our highest stem was 6 feet 1 inch; L. Szovitzianum fine, as usual; L. tenuifolium, about the average; L. candidum simplex, in some positions very good, in others it failed; L. Humboldti, much finer than usual; L. pardalinum and its varieties very fine, and yielding more seed than usual. L. giganteum, average, but its small relative L. cordifolium, in a good many positions especially fine and seeding freely; L. Martagon dalmaticum of several shades of colour, fine; L. tigrinum Fortuni, splendens, flore-pleno, and jucundum, average; L. Batemanniæ and L. Leichtlinii, fair; L. Parryi not good—I evidently have not yet the right place for it; L. polyphyllum, average. L. superbum in different situations, all especially fine; I never realised its full beauty so much before, and it seemed to strike the visitors to the garden very much, it certainly is a most graceful Lily, and with its stems from 8 to 9 feet (our highest was 9 feet 9 inches), waving in the gentle breeze that finds its way into our wood, with the green background of the trees, was certainly very beautiful. The flowers vary very much in colouring and size; it has seeded much more freely than usual. The season being early, owing to the warm summer, has exactly suited L. speciosum. In the coolest, shadiest positions, it is already fully out, and the flowers are unusually fine. L. auratum and varieties have been fine. We had at Wisley a plant of L. auratum macranthum, of which the base of the stem, carefully measured, was 4 inches round, the height was 7 feet 8 inches, this variety even strongly grown is certainly shorter and thicker than the type, as one of these latter, in our Weybridge wood garden, is just 11 feet, and only 3¾ inches round at the base. Another clump of three has stems all between 10 to 11 feet high, with less diameters. I still think that a really fine specimen of the type L. auratum is quite as beautiful in its flower, and in addition, more graceful than the varieties macranthum or platyphyllum, and this year, in a hill Lily-bed, we had good means of comparison. In one compartment was the fine L. a. macranthum mentioned above; when visitors got to this, they said it was the finest Lily they had ever seen, but a little farther on, higher up, was a single plant of the type—a really perfect specimen—this they admitted was still more beautiful. Our hill field of L. auratum was this year more thoroughly satisfactory than the plantation in the wood. I think this last was somewhat injured by the cold wet of last year; however, it had many beautiful flowers. When Lilies are planted near bushes (Rhododendrons excepted), or trees, unless the soil is frequently renewed, the plants will gradually dwindle away. In the garden here we have tried to avoid this by sinking a paraffin cask with the bottom out, filling up with Lily soil, and planting bulbs of L. auratum macranthum it it. These have bloomed beautifully this year, but, of course, several years will be necessary to test whether the object will be attained. I mean this autumn to try more casks. Since this note was begun, the late frost has injured the flowers of L. speciosum in the hill-beds, while those in the wood have escaped. *George F. Wilson.*

TWICKENHAM RED TOMATO.—This is the name given to a variety the seed of which was received from the Canary Isles by Messrs. Hawkins & Bennett, in whose nursery at Twickenham we recently saw some fruits. It is a good solid fruit, a free bearer, and somewhat resembles in colour and shape the well-known Perfection type. It is, however, a distinct sort, and will doubtless be largely in request when better known. The common red variety was noted as fruiting remarkably well here, one plant bearing forty good-sized fruits, and colouring well in the open air; in fact, the Tomatos indoors and out have been very successfully grown by Messrs. Hawkins & Bennett this season. *X.*

SINGLE AND CACTUS DAHLIAS.—The single forms seemed to come into fashion all at once, and will, I think, almost as quickly go out, as what tells much against them is the fugacious nature of their blooms, which are no sooner open than down come the petals, littering the ground beneath the plants, and leaving them with seed-pods staring on every stalk. When cut they are even more evanescent, unless taken the moment they are open, as they are so full of anthers, with pollen, that fertilisation takes place quickly, and then they are done. The new race of Cactus kinds is by far the more useful, and though none are, perhaps, equal to Juarezi, the first that made its appearance, there are many now that are of great value to those who have quantities of cut flowers to supply in the autumn. The finest white is Henry Patrick, which is a great improvement on all before it, as it is a pure white from the first opening, and sends up its blooms boldly on long stalks, instead of hiding them under the foliage. Empress of India is of similar habit, and produces fine large flowers of a rich dark colour

* Notwithstanding this statement, no such attacks on Potatos have hitherto been published, which would certainly have been the case had the insect been an ordinary feeder on Potatos.

that contrast well with the one mentioned above. Now that our growers have turned their attention to these Cactus Dahlias, we shall, no doubt, soon have a wide choice of varieties. Anyhow, what we have are of far more use for decorative purposes than the show kinds, which, either for borders or cutting, are too formal and heavy to satisfy present requirements. *J. S.*

CARPET BEDDING.—This method of garden decoration has been very good this season, the one great feature brought out being the remarkable beauty of the colours in most of the plants employed, which contrasts greatly with the effects produced by the other different styles of bed planting; that is, where the gardener has been mindful of the height, colour, and manner of growth of the plants. We now have in gardens many plants with beautiful foliage that are suitable, and which are able to stand wet weather better than flowering plants, and which will maintain a gay state of the beds until destroyed by frost. I have here six beds, three being on grass and two on gravel, with edgings of Box. The beds are raised in the centre, and fall gradually to the edges. The materials planted are, first edge Box; second, Echeveria glauca; then all the figures are lined-out with Golden Feather. In the centre of the bed is a plant of Retinospora plumosa, then plants of Echeveria metallica glauca, followed by Iresine acuminata, and Kleinia repens, and Alternanthera versicolor grandis, A. paroychioides, A. amabilis, A. nana aurea, A. magnifica, A. spectabilis, and A. amœna; and in the centre of each figure are planted—Echeveria Peacocki, E. metallica rosea, and Pachyphytum bracteosum. I think by making use of strong colours and plants with a dense habit, the least trouble is incurred in keeping the beds in order, and the longer they keep in beauty. For winter decoration of these same beds, I remove all the tender plants, but leave the figures with the lines of Golden Feather, and refill them with lowly alpine plants or any hardy small growing plants with varied foliage which I have, and so the beds are made to look nice all the winter. *W. Smythe, Basing Park.*

"HERBES FOR SALADE."—In the able article upon the history of English gardening, "P. E. N." mentions "Herbes for a *Salade*." Is this correctly copied from the quoted Sloan MS. written in 1450? Evelyn and Shakespeare, amongst other early writers, give *Sallet;* and Bailey, in his earlier editions of his *Dictionary*, defines Sallet, a dish of raw herbs; and in his later editions he has Salad (Fr. *Salade*), a sallet of raw herbs. What is "P. E. N.'s" authority for defining Scalacely as Solomon's Seal? Is it not rather a variety of Cicely, or Seseli? Again, Chives being already mentioned, Syves may properly mean young Onions (*Scottice Sybes*). Dragons, I see a query to (?). Will this not be Tarragon? Kymer's list, including Lettuce, is commented upon as being interesting from the fact of this not being mentioned in the foregoing list, whereas "*Setyse*" occurs in the *Herbes for Potage. William E. Dixon, September* 9.

PHLOX DRUMMONDII.—If the original form of Phlox Drummondii, introduced from Texas by Drummond in 1835, could be again brought before our notice, we could then get some idea of the wonderful improvement which has taken place in this charming flower during the last half a century. I have a coloured illustration of it which appeared in one of the gardening periodicals of the time soon after it was introduced, and it represents a small, thin, pale, rosy-purple-coloured flower, with jagged margins to the segments, and altogether unlike the large, stout, and finely-formed blossoms seen in the present day, many of them of intensely beautiful colours, and combinations of colours, of a highly attractive character. I have this season seen beds of Phlox Drummondii that presented to view a floral picture of such beauty as I have never witnessed in a bed of Verbenas, for instance, and I am often surprised to find that Verbenas are grown in flower gardens, while scarcely a plant of Phlox Drummondii is to be seen. The fact is, that while the Phlox Drummondii has been greatly improved of late years, the Verbena has deteriorated, and, it appears to me, continues to deteriorate. At the West of England exhibitions in particular, and at many country shows, prizes are offered for cut Verbenas, and a large number are staged, but I have this season seen scarcely a truss that was not inferior in quality to what was grown thirty years ago. At one exhibition, when acting as one of the judges, I wished to withhold all the prizes on the ground of the poorness in the quality of the bloom, which, under the regulations set forth in the schedule, I had a perfect right to do; but I was told that the exhibitors were members of the Society, and that there was a keen competition among them, and under the circumstances the prizes had better be awarded. But I strongly recommend that bunches of cut blooms of Phlox Drummondii be substituted for Verbenas, and I give this advice to all flower-show committees throughout the land, for the best Verbena that will be raised will not compete with the form, size, and brilliancy of that fine variety of Drummond's Phlox known as splendens grandiflora. I should therefore like to see classes made for twelve bunches of Phlox Drummondii in not less than six varieties, five trusses to form a bunch. These, if shown in tubes of water on a bed of green moss, the trusses of bloom gathered with some foliage, would be found highly attractive, and introduce an interesting and somewhat novel feature. I am disposed to limit the number of varieties, because I think the rich and bright self-coloured forms are best adapted for exhibition, and collections of twelve or eighteen varieties must include some of the striped flowers, scarcely one of which is worthy of culture. Cut Verbenas go down quickly in a close tent. I have this season seen them nearly roasted up before the judges could examine them; but the flowers of P. Drummondii are much more lasting, and stand a close atmosphere much better. Then, as bedding plants, the Phlox Drummondii makes a free growth, soon covers a space of ground, and gets into bloom early in the season; all that is required is to pick off the decaying flower trusses, and so rid the bed of anything that disfigures it. Such a bed will last until the close of the season, and it does not present such a melancholy and washed out appearance after rain, as does a bed of Verbenas. *R. D.*

THE FRUITERERS' COMPANY AT THE MANSION HOUSE.

On Wednesday evening, at the Mansion House, the Lord Mayor entertained the Master and members of the Fruiterers' Company. Before the dinner, the usual presentation of fruit was made to the Lord Mayor. The fruit, the very finest specimens of English produce, was artistically arranged on tables in one of the small drawing-rooms.

Mr. R. S. Mason, Master of the Fruiterers' Company, addressing the Lord Mayor in the presence of the guests who arrived early, said that, in accordance with the ancient custom, the Company had the honour to present to the Lord Mayor the annual specimens of fruit. This year, in accordance with the wish of the Lord Mayor, the specimens were entirely of English growth. The Company desired through him to express the appreciation they felt of the interest the Lord Mayor took in promoting the better cultivation of choice and hardy fruit. Referring to the part the Lord Mayor had recently taken in successfully settling a labour question, he said that if the cultivation of fruit and vegetables were carried on in this country to the extent that it might be, the congestion of the labour market in the great towns would be very considerably reduced.

The Lord Mayor, in acknowledging the presentation, said he had made it known that he should prefer the gift to consist entirely of British-grown fruit, because he felt there was a great necessity at the present time to offer incentives and give encouragement to the growth of fruit in this country; and he believed that if due attention were given to fruit cultivation, British fruit would be as good as, if not better than, that imported from abroad. He had, as the Master had stated, in recent years taken considerable interest in the subject of fruit-growing: he had done his best to persuade his fellow-countrymen that it was necessary and desirable, and would be very advantageous to the community, that the cultivation of fruit in this country should be regularly and systematically extended. In the course of recent researches he had met with a successful example of fruit cultivation on a small farm not far from a large town. The area of the farm was 12 acres; and the farmer gave him figures which showed that—excluding the growth of fruit under glass—the net profit, after paying rent and other outgoings, was £137 10*s.* in 1887, and in the following year, when exceptional causes were in operation, it fell to £121 10*s.* He had no doubt that others could, by perseverance, attain equally satisfactory results. He congratulated the company on the magnificent fruit which they were able to present under the limitation that none of foreign growth should be included.

At the request of the Master, the Lord Mayor then made a presentation to a successful prize essayist. Recognising the importance of fruit growing among cottagers and other small holders of land, the Fruiterers' Company, through the liberality of their then Master, Mr. H. R. Williams, early in the present year announced their intention of offering a prize of 25 guineas, to which was added a gold medal, kindly placed at their disposal by Dr. Hogg, for the best essay on that subject. In order to ensure its adaptation and practical usefulness to small growers, it was stipulated as one of the conditions that competitors must have had at least ten years' practical experience in fruit growing. Fourteen essays in all were sent in, and that written by Mr. John Wright was declared by the adjudicators, both for its literary ability and its practical experience, to be the best. The medal has a handsome ornamental border of Apples, Pears, Grapes, and various other fruits entwined, while the centre bears the words, "Presented by Robert Hogg, LL.D., F.L.S." On the reverse side is the following inscription:—"To Mr. John Wright, the successful competitor for the prize of 25 guineas offered by Past Master Mr. H. R. Williams, through the Worshipful Company of Fruiterers, for an essay on profitable fruit-growing for cottagers, 1889."

The Lord Mayor, in proposing the "Fruiterers Company," said he had made the gathering at the annual presentation of fruit larger than usual, because the Company had recently shown great interest in fruit culture. He believed their chief aim was to bring about the re-creation of homestead and cottage orchards. In all our counties, with perhaps three exceptions, there were in years gone by orchards which produced good and marketable fruit, and these orchards were now worn out, or were decaying and not being renewed. This was a disgrace to our country, which was as capable of growing fruit as America or Australia. The success of these efforts would improve the condition of the agricultural population, would keep population in this country, would relieve the glut of the labour market in towns, and so would benefit the whole country. The Company was therefore entitled to gratitude for the efforts they were making to extend fruit cultivation. The present Master of the Company had shown greater aptitude in this work than any of his predecessors; he was seeking to raise a sum of £5000 to carry on the work; and the Company was determined to go on increasing its usefulness from year to year for the benefit of the country at large.

SOCIETIES.

ROYAL HORTICULTURAL.

National Vegetable Conference.

Sept. 24, 25, and 26.—On Tuesday last the Royal Horticultural Society's great Conference on Vegetables was opened in the Chiswick Gardens, when, despite the fact that rain simply poured the whole day, there was a good muster of horticulturists of all sorts. This was the day for the committees of selection, the day when the real work of the Conference was done, and on the following days papers were read on appropriate subjects. There was no competition in the classes, the object being to get together, for purposes of comparison and identification, the varieties of various vegetables, and it is to be hoped that good will result. The Society's *Journal* will contain the full report, and we now give a comment on the chief features of the exhibits, which occupied the conservatory and a large tent besides.

Green Vegetables.

These formed a very large portion of the show, and, in many instances, the exhibits were of very fine quality. Cabbages, Savoys, Kales, &c., were very well represented. Only the most conspicuous examples are mentioned. In the collections of Messrs. J. Veitch & Sons, Chelsea, S.W., were specimens of the Rosette Colewort Cabbage, a good flavoured variety, but which does not heart well; the Hardy Green Colewort, a very serviceable variety of moderate size; Enfield Market, a large growing sort, with a selection from it named Offenham, Chou de Burghley, Winnigstadt, a variety with thick leathery leaves, and more in favour abroad than here; Little Pixie, one of the most useful of all, especially for small gardens, in which

category Early Etampes should also be named, both forming good hearts. Express was also shown; it is an early variety, and larger than Little Pixie. Some of these varieties occurred frequently in other collections, and so will not again be referred to. Messrs. J. Carter & Co. had Hartwell Marrow and Miniature Drumhead, two moderate-sized varieties, with fine hearts. As examples of French produce, MM. Vilmorin, of Paris, contributed a few very fine specimens, the best of which were seen in Early Rennes and Very Early Etampes, which had extremely solid hearts; Oxheart was also noticeable. Early Rainham was well shown by Messrs. R. Veitch & Sons, Exeter; and from Messrs. Harrison & Sons, Leicester, came two fine specimens in Victoria and Offenham. Messrs. G. Bunyard & Co., Maidstone, sent several varieties, showing Hardy Green Colewort, in fine condition; and Mr. J. Willard, who was a general exhibitor, had Little Pixie and Ellam's Dwarf. This same exhibitor had in Kales good examples of the Cottagers', and also of Dwarf Green Curled, which is a very useful sort. Mr. Wythes, Syon House Gardens, Brentford, also had a good exhibit of Kales, showing the Asparagus Kale in good form. Messrs. J. Veitch & Sons had plants in pots. A selection of the Dwarf Green Curled was very good, and Read's Hearting Kale a good late variety. Late curled is a good hardy sort, and has very curled leaves. Buda, the sprouting Kale, with fine, broad, rich foliage; and the Ragged Jack, which is more of ornamental than table value, were also seen here.

Savoys were contributed sparingly, Messrs. Oakshott & Millard had a good example of Dwarf Green Curled, a most useful sort; and Mr. Wildsmith, Heckfield Gardens, Winchfield, also had good produce. Messrs. J. Veitch & Sons sent Drumhead Dwarf Ulm, which is too much like a Cabbage, and Yellow—a pale coloured variety.

Sprouts were not of much note, with the one exception of those of Mr. McIndoe, Hutton Hall Gardens, Guisborough, who had a novelty which is likely to turn out well. It is a selection from Veitch's Exhibition, is of dwarf habit, with numerous large, long sprouts. Wroxton was shown by Mr. Deverill, Banbury, and several favourites by Mr. Wythes, Messrs. J. Veitch & Sons, Mr. M. Dunn, and others.

Spinach was shown in about half a dozen lots. Mr. Chadwick, gr. to E. M. Nelson, Esq., Ealing, had finely-grown large leaves of Prickly; and Mr. W. Poupart, Marsh Farm, Twickenham, had one unnamed—a market garden variety, much resembling it; and he sent, too, New Zealand Spinach (Tetragonia expansa), with small leaves of thick, fleshy substance. Messrs. G. Bunyard & Co., Maidstone, also had excellent samples. Mr. R. Smith had good examples of Viroflay.

Red pickling Cabbages were very good, and were fairly well represented. Messrs. Oakshott & Millard, Carter & Co., Dobbie & Co., and Mr. Smith, gr. to Hon. Lady Fletcher, Kenward, Yalding, Maidstone, were the chief contributors. Red Drumhead, a large sort with a big heart, Dutch and Large Dutch were well shown; while Mr. Wildsmith's finely-coloured, firm examples, was probably the finest for pickling purposes. From Mr. R. Gilbert, Burghley Gardens, Stamford, came two magnificent samples of Dutch Red, very large, firm, and solid—the finest of all shown; they did not arrive in time for the first day's show.

Cauliflowers were fine. Mr. Wildsmith had excellent examples of Veitch's Autumn Giant, very firm, and pure in colour; and Colonel Wingfield, Shrewsbury, sent examples every bit as good, showing the same variety—which was the most frequently shown. Michaelmas White, another good late variety, was represented by good heads from Mr. Pope, Highclere Gardens, Newberry, and also from Messrs. Oakshott & Millard.

Globe Artichokes were fairly numerous, and some specimens of the Green were excellent. Col. Wingfield (gr., Mr. Lambert), Mr. Wythes, and Messrs. Oakshott & Millard, each had large and firm heads; and Messrs. J. Veitch had both Green and Purple in good samples; but the Purple do not look so fine as the Green.

Tap Roots.

Of these which formed no small portion of the display, Beets were perhaps the most numerous, although Carrots also were plentiful. The general quality of the exhibits in this section was very high. Of Beets, both long and Turnip-rooted sorts were to be seen, and taking the whole, the old Egyptian Turnip-rooted is still about the best of its class, others being inclined to be white inside, as was clearly seen in the collections. Eclipse, another Turnip-rooted variety, was very noticeable in this respect. Has the rule of selection been sufficiently practised in this section of these roots? probably by closer attention to this, we might see an improvement in the Turnip-rooted Beets, for even the Egyptian comes at times with a bad colour. Messrs. G. Bunyard, J. Carter, and J. Veitch each had first-rate specimens of Egyptian.

Dewars Dwarf, a long-rooted sort with a fine colour was capitally represented by Messrs. J. Veitch and by Col. Wingfield. Pragnell's Exhibition, a fine-looking long root, but not possessing much table value was also largely shown; Mr. Palmer, Thames Ditton, and Messrs. Oakshott and Millard had fine roots.

Hope's Middleton Park Favourite in good form and dark colour was shown by Mr. C. J. Waite, Glenhurst Gardens, Esher.

In Messrs. J. Veitch's lot there were besides good roots of Pine-apple, a very dark-coloured, fine variety with a habit of growing one-third out of the ground; and Dell's Crimson, useful for its decorative foliage, and also for table use. From MM. Vilmorin & Co., Dwarf Red, and an ornamental foliaged table sort, with long, narrow decorative leaves, were the best.

Carrots were a decided feature, the roots being of remarkably fine quality and large size; there were about sixty lots of roots. MM. Vilmorin & Co. sent some excellent samples of Guérande, a stump-rooted, broad sort; and Chantenay, of the same style. Messrs. G. Bunyard sent a number of fine samples, including St. Valery, a long, narrow, very even root; and French Forcing, a short, almost round-rooted sort, very sweet when cooked in a young state. Messrs. J. Veitch & Sons showed even roots of Long Red Surrey, an old variety; Scarlet Model, a half-long sort; Early Dutch, and French Forcing. Under the title of Intermediate Pointed, Messrs. C. Sharpe & Co., Sleaford, had a long, tapering, smooth root; and Mr. G. Gilbert, Sennowe Hall Gardens, Guist, Norfolk, had good James' Intermediate and Scarlet Horn. A form of Altrincham, very even and smooth, was shown by Mr. J. Lye, who also had a large, long-rooted, white sort. Mr. Chettleburgh, Norwich, and Colonel Wingfield, each had good roots. It would appear that the Intermediate and the Horn forms are mostly grown.

Parsnips were numerous and fine. Mr. Poupart contributed very fine roots of Hollow Crown; and Student, shown by Messrs. Oakshott & Millard, were very fine. These two varieties were frequently exhibited, other varieties being of small note. Messrs. Carter & Co., had a Turnip-rooted variety, and were indeed the only exhibitors of that form; other varieties being long, but none so fine as those already named. Messrs. Dobbie & Co., Rothesay, N.B., and Mr. Wildsmith also showed well.

Horse Radish, Salsify, and Scorzonera, were contributed by a few exhibitors, but call for no special notice. Salsify was best shown, Mr. R. Smith, Yalding, having fine roots. Messrs. Carter & Co., J. Willard, Holly Lodge Gardens, Highgate, and Messrs. J. Veitch & Son, sent Stachys, all of equal merit.

Saladings.

The exhibits in this section were not very numerous, but the produce shown was of very good quality. Of Endives, the finest of all were those from Messrs. Vilmorin & Co., who had a compact, finely-cut variety, and also good Batavian or broad-leaved. Messrs. J. Veitch & Sons had a lot of almost equal merit; Round-leaved Batavian, more solid than the White Batavian; White and Green Curled varieties were also shown. Messrs. G. Bunyard & Co., had Imperial Curled of good substance, and Messrs. Oakshott & Millard showed good curled sorts.

Of Lettuces, a capital collection was staged by Messrs. J. Veitch & Sons; the varieties shown were chiefly of the Cabbage sort; Marvel is a good variety, but the dark red-brown tinge of the leaves operates against it to some extent. Varieties of the type of All the Year Round were numerous, and that variety is one of the best of all, giving a good heart, which, it would seem, the more curled varieties do not do. The Paris White Cos, and varieties of Lettuce grown in pans for cutting over for salads, were seen in Californian and others.

There were about forty lots of Celery, but the general quality was not of the highest; although the growth was good, the stems were frequently found to be pithy; White Gem, a nice dwarf sort, was shown by several exhibitors, and generally was of good quality; Major Clarke's Red, from Messrs. J. Veitch & Sons, appeared to be still a good sort; and from the same came White Plume, a variety also shown by Messrs. R. Veitch in good form. Standard Bearer was well represented by Messrs. Oakshott & Millard, and by Mr. F. Taylor, Cheltenham. Mr. W. G. Gilbert, Sennowe Hall Gardens, Norfolk, had a variety named Yellow, which is dwarf, pale straw-coloured, and not inviting. Messrs. Bunyard, Willard, Harrison & Sons, and J. Lye were among other exhibitors.

The best lot of Celeriac was shown by Messrs. Vilmorin & Co., who had three representative varieties, Smooth Prague, Early Erfurt, and Apple-shaped, all showing large root-stocks. Saladings, in the way of Radishes, were well represented by the same firm, who had several varieties, including Globe Yellow Turnip (winter variety), and forcing varieties. Messrs. J. Veitch & Sons, sent Witloof Chicory, Black Radish and other Saladings in the way of various Dandelions, &c.

Tubers and Bulbs.

The Potatos were placed on a table in the large Vinery, and consisted of, generally, well-grown, clean-skinned tubers. In the collections not restricted as to number of varieties, Messrs. Oakshott & Millard, nurserymen, Reading, made a fairly good exhibit, there being but few that were rough in appearance. Amongst their rounds were Reading Russet, Best of All, Early Puritan, Village Blacksmith, not attractive to look at, but good in eating qualities; Abundance, and Chiswick Favourite. The finest specimens of the kidneys were Magistrate, Ashleaf, Snowdrop, The Daniels, Early Victor, and The Bruce. Messrs. G. Bunyard & Co., nurserymen, Maidstone, had a dozen dishes, but evidently from soil which does not suit the Potato, as the samples were mis-shapen, and rough in the skin. The Society itself showed forty-four dishes and varieties grown in the garden, and doubtless the pick of the varieties. We can speak only as to appearance, and noted as being nice-looking amongst the kidneys, Sharpe's Victor, Murray Seedling, Crown Jewel, Vegetarian, Edgecote Beauty, Edgecote Early, Lavington Conqueror, and Ross' Chieftain. Of Rounds, we mention, King of Crimsons, Rector, Progress, Sharp's Standard, and Renown. A collection of American varieties, of especial ugliness, came from the same source.

There were several very superior lots of twenty-five varieties, of which we signalise that of Mr. E. S. Wiles, of Potato fame, the gardener to R. A. Cartwright, Esq., Edgecote Park, Banbury, as being perhaps, the best. All the tubers were clean, smooth, regular as to size—in fact, well selected from an exhibitor's point of view. We noted as good looking, General Gordon, a longish red tuber; White Elephant, Reading Giant, Reading Ruby, a pretty pink; Abundance, Mr. Bresee, Prolific, Snowdrop, Pink Perfection, Sutton's Seedling, do. Satisfaction, do. Reading Russett, do. Magnum Bonum, Adirondack, Chancellor, Mottled Beauty, London Hero.

Mr. J. Lye, an equally experienced Potato grower with Mr. Wiles, tabled medium-sized, clear-skinned tubers, in which, on seeing only there was not much difference except in name—and many of these we may suppose were adopted by the raiser as representing the height of goodness—we instance Epicure's Delight, Nonsuch (of Sutton), Snow Queen (doubtless in allusion to its floury look when cooked), Beauty of Hebron, Clipper, The Dean (a capital thing in spite of its colour—purple), Hughes' Purple Perfection, and Vicar of Laleham. It may be said that the varieties with the finest names were in this exhibits also the finest in appearance.

Mr. Hughes, gr. to Colonel Cartwright, Eydon Hall, Byfield, Northampton, had a beautiful lot of twenty-five varieties, well washed, and free from scabbiness, and of good form in general. Besides the three lots we have touched on, three others were shown; but each, in so far as appeareance and evidence of suitable soil and good culture, were many points behind these.

The grower of the finest twenty-five varieties was naturally the best in the twelve varieties. Here were found mostly such as Messrs. Sutton & Sons, Reading, have raised or introduced to commerce; and beside these, there were Chancellor, Mr. Bresee, Edgecote Purple, Mottled Beauty, a tuber of nice form, but unpleasing as to colour.

Mr. J. Lambert, gr. to Col. Wingfield, Onslow Hall, Salop, showed the delicate pink Reading Russet, a favourite round with most exhibitors; Abundance, Chancellor, Cole's Favourite, a fine Lapstone-like tuber; and Prime Minister.

The collection of twelve varieties from Messrs. Webb & Sons, Stourbridge, consisted of Potatos which have originated in their nursery, or which have been intro-

duced by them; and, indeed, they do differ greatly from those of the better-known South country popular varieties. Kinver Monarch, Kinver Hill, a long, white kidney; Wordsley Pride, Stourbridge Glory, Benefactor, Renown, a fine, solid, square tuber, white; and Epicure, looking like the last, but with a rougher and darker skin.

Mr. W. Wildsmith, Heckfield, showed well in the sixes, and we suppose that it is more difficult to select six Potatos for early, mid-season, and late use, than twenty-five. His selection was a good one; it was:—Early Ashleaf, Sutton's Magnum Bonum, Sutton's Seedling, rather coarse, but heavy; Sutton's Abundance, a half-round; Sutton's Early Market, a square rather than round tuber; and Reading Russett.

Mr. E. S. Wiles had Fidler's Perfection, Prolific, London Hero, Favourite, Edgecote Early, and Snowdrop, well matured, even in size, nice form, and free from scab or any roughness.

Mr. J. Lye also showed well in the sixes; he had Clipper, Giant, Vicar of Laleham, King of Russets, good, but very large, and showing great angularity.

Messrs. J. Veitch & Sons, Chelsea, showed very fine samples of Adirondack, Schoolmaster, Chancellor, their strain of Ashleaf; and Early Puritan—a prolific variety, but in this case rather coarse.

About fourteen lots of seedlings were shown, many having good form and colour (mostly white), but without further trials in growing and cooking them, nothing may be said here.

In most instances exhibitors had attached cards with particulars of parentage.

Contributions of Artichokes (Jerusalem), were also invited, but the return was naturally not large, only about four or five lots being shown. Mr. R. Smith, Yalding, and Colonel Wingfield, sending the best dishes of clean even tubers.

Of Onions there was a very great number, and many fine bulbs were shown. Messrs. Vilmorin & Co., had some exceedingly large and clean Tripoli Onions, which had been grown in the South of France; also Trebon's Yellow and White Globe, well ripened.

Messrs. Oakshott & Millard had several varieties of the Spanish section in well ripened bulbs, and also the Wroxton.

Mr. Deverill, Banbury, contributed a collection of his Onions, such as Ailsa Craig, Black Douglas, Rousham Park (one bulb weighing 2 lb.), &c., which are very good for exhibition purposes, but in culinary use are of necessity wasteful: more moderate sized bulbs, as Danver's Yellow, the various Globes, Strasbourg, &c., are of more general use. Messrs. G. Bunyard & Co. showed a collection of good useful sorts, about twenty, Giant Rocca and Danver's Yellow being very fine. Mr. Nicholas, Castle Hill, Devon, had good sound bulbs of Blood Red; and Messrs. Dobbie also had finely coloured samples. Giant Yellow was shown by Messrs. R. Veitch & Sons, Exeter. Mr. W. Wildsmith sent a selection from Reading, a half Globe of moderately useful size, and with a light brown skin. A large number of varieties was sent by Messrs. J. Veitch & Sons (about thirty), including many forms of Spanish and Anglo-Spanish. Anglo-white Spanish was a good sort, and also Giant Zittau, and White and Brown Globes. Small bulbs of the Queen were also shown. Among other exhibitors were Mr. Pope, Mr. Nicholas, and Mr. Kneller, of Nalshanger Park, Basingstoke, who had fine types of Deverill's Onions.

Shallots and Garlic were poorly represented, Mr. Fletcher alone showing Garlic; and of the former Messrs. R. Veitch, J. Dobbie & Co., Stuart & Mein, and C. J. Waite each contributed good dishes of Large Red.

Leeks, which were numerous, there being about twenty-four lots, were very fine in several instances and attracted considerable attention, The Lyon and Musselburgh being the best generally. Messrs. Dobbie & Co., had a very fine sample of one named Champion, very long and of even width throughout, and Lyon from Messrs. Stuart & Mein, were equally fine. Renton's Monarch was well represented in samples from Messrs. Stuart & Mein, and from Messrs. R. Veitch & Son, and Messrs. Oakshott & Millard had good Musselburgh. Mr. Pope, Highclere Gardens, Newbury, showed Sutton's Prizetaker. Mr. Deverill, Banbury, had Oxonian, large broad samples, and Messrs. Carter & Co., also had good roots.

Turnips were an average display, white roots predominating. The best yellow, to all appearance, was Messrs. Dobbie's Golden Ball, very dark coloured. Messrs. R. Veitch & Sons had Red Globe, Colonel Wingfield sent good roots, and Mr. Divers, Ketton Hall, Stamford, sent good roots of Snowball and Red Globe; and Mr. J. Wallis, Keele Hall Gardens, Newcastle, Staffordshire, had Golden Yellow and Early Milan. Messrs. Harrison & Sons, Leicester, also exhibited.

Kohl Rabi was a small item; the green sort was more largely shown, Messrs. J. Carter & Co., and Mr. Osman, gr. at the South Metropolitan District Schools, Sutton, sending good examples. Messrs. J. Veitch & Sons had good roots of Purple Vienna.

Fruits and Pulse.

Some Gourds and Vegetable Marrows were shown by E. M. Nelson, Esq., Hanger Hill, Ealing (gr., Mr. Chadwick), and amongst them a new Marrow—Moore's Cream×, small Indian Marrow. It is of a whitish colour, and when full grown, about 10 inches long. In form it is more narrowed towards the stalk than the English parent.

The White Bush Vegetable Marrow was shown by Messrs. Oakshott & Millard. The comparatively new Pen-y-Byd, Hibberd's Marrow, a quite small fruit, 6 inches long, and the Bush Green-fruited Marrow were noted.

Messrs. Vilmorin, Andrieux & Cie, Paris, showed amongst some Gourds of vivid colouring, the long White Bush Marrow. This collection of French varieties and foreign species of the Gourd family—chiefly North American—was interesting, as showing what a number of good things for autumn and winter use, our climate, and it must be said our prejudices likewise, hinder us from making any use of whatever. These ripe Gourds are excellent for Marmalade, for mixing with Apples and Rhubarb in tarts; and the roasted seed of ripe fruits are as good and as sweet as Filberts.

A large number of Gourds and Marrows came from Messrs. Carter & Co., High Holborn.

The Society likewise contributed about fifty species and varieties of Gourds, and Marrows (about thirty), inclusive of the white-fruited Solanum guatamalense, the so called Melon Pear.

Mr. Osman, gr. to the South Metropolitan School, Sutton, contributed the many (forty-four) species and varieties of Gourds and Marrows we are accustomed to see from the garden under his charge.

Peas were plentifully shown, and were generally of good quality for the season, and the varieties were such as have been grown for late use for many years in private gardens. The new Pea Sturdy, a variety repeatedly spoken well of by gardeners in our columns, was exhibited by Mr. Dunn, gr., Dalkeith. It is a good cropping plant, with dark green, well-filled pods, and bears successionally.

Perfection (Veitch), was shown by Messrs. Carter & Co.; Ne Plus Ultra, by Messrs. Perkins, Thornham House, Norfolk; Oakshott & Millard; Goodacre, Elvaston, &c.; Goldfinder, by Messrs. R. Veitch & Sons, Exeter; Duke of Albany, Matchless, Telephone, and Prodigy, were excellent examples from Mr. Lambert, Onslow Hall. Mr. Goodacre, Elvaston, showed a box of Peas, and gave the date of sowing for all, viz., May 6. The varieties were Criterion, Harrison's Glory, Stratagem, Duchess of Edinburgh, Ne Plus Ultra, and Champion of England. Mr. Wallis, gr., Keele Hall, showed good Peas.

French Beans exhibited nothing novel or particularly fine.

Runner Beans.—These were very numerous, and, in most instances, very large, but as we know that these vegetables differ greatly in bearing properties, we will instance only a few of the new large podders, viz., Giant (Veitch), The Czar, an extraordinary bearer; the White Runner, Giant (Girtford, Laxton's), Ne Plus Ultra, and Mammoth (Veitch).

A few Butter Beans—great favourites in Germany—were shown, of which Golden Cluster seemed the best. The Bulgarian Butter Bean is green, with black speckling. These Beans bear well in this country, and need sticks about 5 feet high.

Tomatos.—These popular vegetables were shown in large numbers, and generally were confined to smooth fruits of the Perfection type. Some fine specimens were shown by Messrs. Vilmorin, Andrieux & Co., and were named Mikado, Chemin, Mikado, and Mikado Rose, Hathaway's Excelsior, King Humbert, an oval fruit, 2 inches by 1½ inch; T. Pêche, noticed in these columns recently; Early Red, smooth-fruited, with crisped leaves.

From Messrs. Oakshott & Millard came Abundance, Reading Perfection, Chiswick Red, Golden Queen, a large yellow; and Golden Nugget, a small one.

From the Society's Garden there were twenty-four varieties, of which, among the large ones, may be noticed Ham Green Favourite, President Cleveland, Perfection, Surpasse, Reading Hybrid, and Yellow King and Yellow Queen. Of small-fruited kinds were Tennis Ball, Horseford's Prelude, Peach, King Humbert, Pear-shaped Red, Yellow Cherry, and Green Gage.

Messrs. J. Veitch & Sons sent thirty-two varieties, including Hackwood Red, Ham Green Favourite, Mayflower, Livingstone Favourite, Cardinal, Ne Plus Ultra, and others of similar characteristics. The useful small varieties consisted of Red Cherry, Chemin, King Humbert, Currant fruited, Little Gem, and Eclipse. Small-fruited yellows were Yellow Plum and Gold Nugget; and amongst large yellows, Prince of Orange.

The Society's selection of four varieties was Tennis Ball, Ham Green Favourite, Chiswick Hybrid and Perfection. Messrs. Carter & Co.'s in same class was Lorillard, Sandwich Island, Blenheim Orange, and King Humbert.

Mr. Lockie's selection consisted of Perfection, Maincrop, Dedham Favourite, and a yellow sport from Perfection.

In the one variety class, Mr. Poupart showed Perfection. Dedham Favourite, a very superior sample, was shown by Mr. C. Hart, Leyton. This Tomato was shown by several others, and was always good. Ham Green Favourite was Mr. R. Dean's choice, and Mr. Laxton chose his open air Tomato, a well-ripened sample.

The collection of Capsicums (peppers) was of not much interest, and consisted of large Spanish Capsicums, Cayenne, &c. Messrs. Vilmorin, Andrieux & Cie had the only novelty called Celestial Pepper. It has numerous pods 1½ inch high and 1 inch broad at the base, which stand upright on the branchlets, and impart a singular look to the plant. It might prove of value in winter arrangements of plants. Some good heads of Maize (three varieties) were shown by this firm. The Maize was intended for cooking in the milky stage.

There were several exhibits of Cucumbers, Messrs. Bunyard & Co. taking the lead with enormous fruits of Telegraph in a ripe state. They showed also Beaton's Hybrid Ridge, a thick fleshy fruit, 15 inches in length.

Mr. T. Laxton, Bedford, exhibited Cucumber Excelsior, Telegraph×, Bedford Ridge. The fruit is intermediate between the two, and the plant bears well at Bedford out-of-doors.

Messrs. Carter & Co. showed six fruits of Cucumber Model, about 2½ feet long.

Mr. Lockie, gr. Oakley Court, came out with his Seedling Cucumber, in eating condition. They were nice, medium-sized, dark green fruit, looking like small editions of Telegraph, but yet distinct from that variety.

Messrs. Oakshott & Millard showed Cucumber I Beat All, and excellent Purley Park Cucumber came from Mr. Lambert, Onslow Hall, Salop.

Miscellaneous.

Cardoons, well grown, were sent by Messrs. Wingfield, J. Veitch, and Gilbert, of Sennowe Hall, Guist. Ornamental Beet were finely displayed by Messrs. J. Veitch & Sons in large-leaved sorts, showing Chilian, and Silver or Seakale. Messrs. J. Carter & Co., Muir (Margam), S. Bunyard & Co., Dobbie, R. Dean, and J. Veitch & Sons, sent several forms of Parsley, moss and Fern-leaved, and the last-named firm contributed a number of flavouring herbs in great variety, as Sorrel, Thyme, Marjoram, Rosemary, Wormwood, &c., and also shoots and plants of the Asparagus Chicory, which was also sent by Mr. J. Willard, to whom is due the introduction of this as a vegetable.

The Committees of Selection, on whom no slight labour fell, and who merit the most sincere acknowledgments, were:—

Green Vegetables.—Messrs. H. Vilmorin, W. J. Nutting, Hughes, and W. Coleman.

Fruits and Pulse.—Messrs. P. Barr, W. Iggulden, J. Burnett, and R. Ker.

Potatos.—Messrs. J. McIndoe, W. Denning, Jas. Smith, P. Veitch, and G. T. Miles.

Other Tubers and Bulbs.—Messrs. J. Harrison, C. J. Waite, J. Willard, and M. Dunn.

Tap Roots.—Messrs. J. Benary, C. Silverlock, E. Hill, C. Ross, and A. Moss.

Salading and Miscellaneous.—Messrs. W. Poupart, W. Wildsmith, E. Molyneux, J. Lye, and G. Wythes.

Referees.—Messrs. A. W. Sutton, C. H. Sharman, T. Laxton, W. Ingram, and J. Douglas. Chairman, Dr. Hogg.

Certificates.

The following Certificates of Merit were awarded:—

To Cabbage Ellam's Early, from Mr. J. Willard.

To Cabbage Old Nonpareil, from Messrs. J. Carter & Co.

To Cabbage Hâtive d'Etampes, from Messrs. Vilmorin, Andrieux & Co.
To Cabbage Offenham, from Messrs. J. Harrison & Sons.
To Cabbage Hardy Green Colewort, from Messrs. J. Veitch & Sons.
To Cabbage Red Dutch, from Messrs. Dobbie & Co.
To Savoy Early Ulm, from Messrs. J. Veitch & Sons.
To Savoy Dwarf Green-curled, from Messrs. J. Veitch & Sons.
To Savoy Vertus, from Messrs. J. Veitch & Sons.
To Borecole Extra Dwarf Green-curled, from Messrs. J. Veitch & Sons.
To Borecole Cottagers' Kale, from Messrs. J. Veitch & Sons.
To Brussels Sprouts Deverill's Large Wroxton, from Mr. H. Deverill.
To Brussels Sprouts Paris Market, from Messrs. J. Veitch & Sons.
To Cauliflower Veitch's Autumn Giant, from Mr. J. Lambert.
To Cauliflower Pearl, from Messrs. J. Veitch & Sons.
To Artichoke Green Globe, from Mr. J. Lambert.
To Spinach Viroflay, from Mr. R. Smith.
To Spinach Prickly Seeded, from Mr. W. Poupart.
To Marrow Anglo-Indian, from Mr. J. Chadwick.
To Marrow Long White, from Mr. W. Palmer.
To Pumpkin Rouge de Crimée, from Royal Horticultural Society.
To Cucumber Lockie's Perfection, from Mr. T. Lockie.
To Tomato Red Chemin, from Messrs. Vilmorin, Andrieux & Co.
To Tomato Chiswick Hybrid, from Royal Horticultural Society.
To Tomato Mikado, from Messrs. Vilmorin, Andrieux & Co.
To Bean (Runner) Neal's Ne Plus Ultra, from Mr. G. Neal.
To Bean (Butter) Early Golden Cluster, from Messrs. J. Veitch & Sons.
To Bean (Butter) Fillbasket, from Messrs. J. Veitch & Sons.
To Bean (Butter) Sutton's, from Mr. R. Gilbert.
To Pea Duke of Albany, from Mr. J. Lambert.
To Pea Telephone, from Mr. J. Lambert.
To Pea Prodigy, from Mr. J. Lambert.
To Pea Sutton's Matchless, from Mr. J. Lambert.
To Capsicums or Chillies (collection), from Messrs. Vilmorin, Andrieux & Co.
To Maize Extra Early Sweet, from Messrs. Vilmorin, Andrieux & Co.
To Parsnip Dobbie's Selected Hollow Crown, from Messrs. Dobbie & Co.
To Beet Edinburgh Blood Red, from Mr. Hugh Hanan.
To Beet Dewar's Dwarf Red, from Messrs. J. Veitch & Sons.
To Beet Dobbie's New Purple, from Messrs. Dobbie & Co.
To Beet (Turnip-rooted) Eclipse, from Messrs. J. Veitch & Sons.
To Beet (Dracæna-leaved), from Messrs. Vilmorin, Andrieux & Co.
To Carrot New Scarlet Improved Short Horn, from The Novelty Seed Company.
To Carrot Long Red Surrey, from Messrs. J. Veitch & Sons.
To Celeriac Large Smooth Prague, from Messrs. Vilmorin, Andrieux & Co.
To Radish Long Scarlet, from Messrs. Vilmorin, Andrieux & Co.
To Radish Early Scarlet Forcing, from Messrs. Vilmorin, Andrieux & Co.
To Radish Early White Forcing, from Messrs. Vilmorin, Andrieux & Co.
To Celery Wright's Giant, from Messrs. Oakshott & Millard.
To Celery Dobbie's Invincible, from Messrs. Dobbie & Co.
To Celery Sandringham White, from Messrs J. Veitch & Sons.
To Celery Sutton's White Gem, from Mr. J. Lye.
Endive Ruffuc, from Messrs. Vilmorin, Andrieux & Co.
To Endive Green Curled, from Messrs. J. Veitch & Sons.
To Endive (Moss Curled) Chicorée Parisienne d'Eté, from Messrs. Vilmorin, Andrieux & Co.
To Lettuce (Cabbage) Lorthois, from Messrs. J. Veitch & Sons.
To Lettuce (Cabbage) Blonde Berlin, from Messrs. J. Veitch & Sons.
To Celery Standard Bearer, from Mr. F. Taylor.
To Celery Covent Garden Red, from Mr. W. Poupart.
To Leek Lyons, for type, from Messrs. Stuart & Mein.
To Leek Lyons, for type, from Messrs. Dobbie & Co.
To Leek Lyons, for type, from Mr. J. Lambert.
To Leek Musselburgh, for type, from Mr. C. J. Waite.
To Leek Musselburgh; for type, from Mr. J. Lambert.
To Leek Musselburgh; for type, from Messrs. R. Veitch & Son.
To Onion Giant, late White flat Tripoli, for type, from Messrs. Vilmorin, Andrieux & Co.
To Onion Queen, for type, from Messrs. J. Veitch & Sons.
To Onion Giant Madeira, for type, from Messrs. Vilmorin, Andrieux & Co.
To Onion large blood-red flat Italian, for type, from Messrs. Vilmorin, Andrieux & Co.
To Onion Giant Zittau, for type, from Messrs. R. Veitch & Son, Exeter.
To Onion Brown Spanish, from Messrs. Oakshott & Millard.
To Onion Main Crop, from Mr. Nicholas.
To Onion Deverill's Improved Wroxton, for type, from Mr. W. Pope.
To Onion Brown Globe, from Messrs. J. Veitch & Sons.
To Onion Bedfordshire Champion, from Mr. G. Wythes.
To Onion James' Keeping, from Mr. Muir.
To Onion Flat, Yellow, or Brown Anglo-Spanish, for type, from Mr. H. Deverill.
To Onion Anglo-Spanish, from Mr. W. Pope.
To Onion Rousham Park, from Mr. W. Pope.
To Onion Reading, from Mr. J. Hughes.
To Onion Anglo-Spanish, from Mr. Wingrove.
To Onion Rousham Park, from Mr. C. J. Waite.
To Onion Rousham Park, from Mr. Bowerman.
To Onion Rousham Park, from Mr. Deverill.
To Onion Ailsa Craig, for type, from Mr. Deverill.
To Onion James' Long Keeping, from Mr. Deverill.
To Onion Pinesfield, from Mr. Deverill.
To Onion Advancer, from Mr. Deverill.
To Onion Cocoa-nut, from Mr. Deverill.
To Onion James Long Keeping, for shape, Royal Horticultural Society.
To Onion Ailsa Craig, for shape, Mr. W. Pope.
To Onion Ailsa Craig, for shape, Mr. W. G. Gilbert.
To Onion Ailsa Craig, for shape, Mr. J. Hughes.
To Onion Ailsa Craig, for shape, Mr. R. Kneller.
To Onion Black Douglas, for type, Mr. H. Deverill.
To Onion Black Douglas, for type, Mr. Murray.
To Onion Blood Red, for type, Messrs. Dobbie & Co.
To Onion Southport Red Globe, for type, Messrs. J. Veitch & Sons.
To Onion Southport Red Globe, for type, Royal Horticultural Society.
To Shallots, large red, for type, Messrs. Stuart & Mein.
To Garlic, from Mr. R. Smith.
To Turnip Early Milan (Red-top), from Messrs. J. Veitch & Sons.
To Turnip Model White Stone, for type, from Messrs. Dobbie & Co.
To Turnip White Stone, from Messrs. J. Veitch & Sons.
To Turnip White Stone, from Mr. J. Lambert.
To Turnip Early Marvel, for type, from Messrs. Harrison & Sons.
To Turnip Green-top Stone, from Mr. R. Moper.
To Turnip Round Red Globe, for type, from Messrs. J. Veitch & Sons.
To Turnip Round Red Globe, from Messrs. R. Veitch & Son.
To Turnip Golden Ball, for type, from Messrs. Dobbie & Co.
To Turnip Golden Ball, from Mr. J. L. Ensor.
For Kohl Rabi Early Vienna, green for type, from Messrs. J. Veitch & Sons.
To Kohl Rabi Early Vienna, green from Messrs. J. Carter & Co.
To Kohl Rabi Early Vienna, purple, from Mr. C. Doman.
To Kohl Rabi Early Vienna, purple, for type, from Messrs. J. Veitch & Sons.

POTATOS.

To Reading Russet, from Mr. J. Hughes.
To Reading Giant, from Mr. J. Lye.
To King of Russets, from Mr. J. Lye.
To Snowdrop, from Mr. E. S. Wiles.
To London Hero, from Mr. E. S. Wiles.
To Sutton's Abundance, from Mr. W. Wildsmith.
To Reading Russet, from Mr. W. Wildsmith.
To Adirondack, from Messrs. R. Veitch & Son.
To Early Puritan, from Messrs. R. Veitch & Son.
To Favorite, from Mr. E. S. Wiles.
To Veitch's Improved Ashleaf, from Mr. J. Hughes.
To Wordsley Pride, from Messrs. E. Webb & Sons.
To Epicure, from Messrs. E. Webb & Sons.
To Renown, from Messrs. E. Webb & Sons.
To Sutton's Seedling, from Mr. J. Lambert.
To Prime Minister, from Mr. J. Lambert.
To Sutton's Abundance, from Mr. J. Lambert.
To Cole's Favourite, from Mr. J. Lambert.
To Vicar of Laleham, from Messrs. R. Veitch & Son, Exeter.
To London Hero, from Messrs. R. Veitch & Son, Exeter.
To The Rector, from Mr. E. S. Wiles.
To Edgecot Purple, from Mr. E. S. Wiles.
To Reading Giant, from Mr. J. Hughes.
To Sutton's Abundance, from Mr. J. Hughes.
To Hughes' Pink Perfection, from Mr. J. Hughes.
To Sutton's Seedling, from Messrs. G. Bunyard & Co.

For any new named seedling variety not in commerce, six tubers to be supplied for cooking:—

First-class Certificates.

To Victory, from Mr. J. Lye.
To Duchess of Fife, from Mr. J. Hughes.
To Edgecote Early, from Mr. E. S. Wiles.
To Talisman, from C. Ross.

Awards of Merit.

To Duke of Fife, from Mr. J. Hughes.
To Seedling, from Mr. R. Clive.

The above are the awards up to the time of our going to press; but we understand that additional Certificates have since been given, to which reference will be made in our next issue, while the detailed remarks furnished by the exhibitors will be printed in an early number of the *Journal* of the Society.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending September 23, is furnished from the Meteorological Office:—

"The *weather* has been in an unsettled, changeable condition very generally. Over Ireland and the north of Scotland the sky has been mostly cloudy or overcast, and the rainfall frequent; but elsewhere, although a considerable quantity of rain has fallen, several fine, bright intervals have been experienced. Thunder and lightning occurred in some parts of England on the 20th.

"The *temperature* has been below the mean in all districts. In the 'Channel Islands' the deficit is only 2°, and in 'Ireland, S.,' 3°; but in nearly all other parts of the kingdom the average value for the week has been from 5° to 7° below the normal for the time of year, while in 'England, E.,' the deficit is as much as 8°.

"The highest of the maxima, which were recorded during the earlier days of the period, ranged from 59° in 'Scotland, W.,' to 67° over eastern, southern, and south-western England. Towards the close of the week the maxima were much lower; at few stations they were below 50°. The lowest of the minima were registered either at the commencement or end of the period, and varied from 28° in 'England, N.W.,' and 29° in 'Scotland, E.,' to 34° in 'Ireland, N.,' 38° in 'Ireland, S.,' and 43° in the Channel Islands.

"The *rainfall* has been less than the mean in the east of Scotland, and in the north-east and south of England, as well as in the 'Channel Islands'; but in nearly all other districts an excess is shown.

"*Bright sunshine* has been more prevalent generally than it was last week, but has still been deficient in the north of Scotland and over Ireland. The percentage of the possible amount of duration varied from 40 to 55 over the greater part of the kingdom, but in Ireland it ranged between 26 and 31, while in the north of Scotland only 15 per cent was recorded."

[BY the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending September 23.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42° difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	4 —	33	0	+ 193	+ 4	5 +	174	29.2	15	23
2	4 —	44	4	+ 22	+ 9	3 —	140	19.0	40	30
3	5 —	50	4	+ 18	+ 11	4 —	128	17.0	51	28
4	8 —	54	9	— 14	+ 121	0 av.	133	18.7	55	32
5	7 —	54	9	— 11	+ 68	4 +	125	21.2	47	30
6	6 —	60	0	+ 28	+ 75	2 —	126	16.9	46	32
7	5 —	42	1	+ 54	— 22	5 +	149	28.8	42	31
8	5 —	53	0	+ 51	— 1	7 +	134	22.1	40	31
9	5 —	64	0	— 52	+ 88	4 +	134	24.1	44	37
10	4 —	57	0	+ 47	— 53	0 av.	166	27.2	26	26
11	3 —	71	0	+ 15	— 14	0 av.	149	26.2	31	33
12	2 —	101	0	+ 101	— 16	4 —	140	17.9	50	42

The districts indicated by number in the first column are the following :—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing, &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N. 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, September 26.

TRADE very quiet; no alteration. *James Webber, Wholesale Apple Market.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Foliage plants, various, each ...	2 0	10 0
Asters, per dozen ...	3 0	6 0	Fuchsias, dozen ...	3 0	6 0
Begonias, dozen ...	4 0	12 0	Hydrangea, per doz.	9 0	18 0
Cyperus, per dozen .	4 0	12 0	Lilium lancifolium, per dozen ...	12 0	24 0
Dracæna terminalis, per dozen ...	30 0	60 0	Marguerites, doz. ...	6 0	12 0
— viridis, per doz.	12 0	24 0	Mignonette, doz. ...	3 0	6 0
Euonymus, in var., per dozen ...	6 0	18 0	Palms in var., each	2 6	21 0
Evergreens, in var., per dozen ...	6 0	24 0	Pelargoniums, scarlet, per dozen	2 0	4 0
Ferns, in var., doz.	4 0	18 0	Solanums, per dozen	6 0	12 0
Ficus elastica, each .	1 6	7 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun. ...	2 0	4 0	Maiden Hair Fern, 12 bun.	4 0	9 0
Asters, English, bun.	2 0	4 0	Mignonette, 12 bun.	1 0	4 0
Bouvardias, per bun.	0 6	0 9	Pansies, 12 bun. ...	1 0	2 0
Carnations, 12 bun.	4 0	9 0	Pelargoniums, 12 spr.	0 6	1 0
— 12 blooms ...	1 0	2 0	— scarlet, 12 spr....	0 3	0 6
Chrysanth., 12 bun.	3 0	6 0	Primulas, double, 12 sprays	0 9	1 0
Chrysanth., 12 blms.	0 6	3 0	Roses, Tea, per doz.	0 6	1 6
Cornflowers, 12 bun.	1 0	3 0	— coloured, doz.	2 0	4 0
Dahlias, 12 bun. ...	2 0	4 0	— red, per dozen ...	0 4	1 0
Eucharis, per dozen	3 0	6 0	— Safrano, dozen...	0 6	1 0
Gaillardias, 12 bun.	2 0	4 0	Stephanotis, 12 spr.	3 0	6 0
Gardenias, 12 blooms	2 0	4 0	Sunflowers, various, per 12 bun. ...	3 0	6 0
Gladioli, 12 bun. ...	6 0	12 0	Sweet Sultan, 12 bun.	3 0	4 0
— 12 sprays ...	1 0	1 6	Sweet Peas, 12 bun.	2 0	4 0
Heliotropes, 12 spr.	0 3	0 6	Tuberoses, 12 blms....	0 4	1 0
Lilium, various, 12 blooms	2 0	6 0			
Marguerites, 12 bun.	3 0	6 0			

Orchid bloom in variety, fairly good supply.

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, Fr., per lb....	0 4	...	Mushrooms, punnet	2 0	...
Beet, red, per dozen	1 0	2 0	Mustard and Cress, punnet	0 4	...
Carrots, per bunch...	0 6	...	Onions, per bunch ...	0 5	...
Cauliflowers, each ...	0 3	...	Parsley, per bunch...	0 4	...
Celery, per bundle ...	1 6	2 0	Peas, per quart ...	1 3	...
Cucumbers, each ...	0 6	0 9	Shallots, per lb. ...	0 6	...
Endive, per dozen ...	2 0	...	Spinach, per bushel...	2 6	...
Green Mint, bunch...	0 4	...	Tomatos, per lb. ...	0 9	...
Herbs, per bunch ...	0 4	...	Turnips, per bunch, new	0 5	...
Leeks, per bunch ...	0 3	...			
Lettuce, per dozen ...	1 6	...			

POTATOS are arriving in much better condition. Trade is nominally about the same as previously reported. *J. B. Thomas.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 6	Peaches, per doz. ...	2 0	8 0
Cobs, per cwt.	...90	0-95 0	Pine-apples, Eng., lb.	1 6	3 0
Filberts, per lb.	0 10	...	— St. Michael, each	2 0	6 0
Grapes, per lb. ...	0 6	2 6	Plums, ½-sieve ...	2 6	5 0
Lemons, per case ...	12 0	21 0			

SEEDS.

LONDON: *Sept.* 25.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, describe to-day's market as inactive with regard to Clover seeds; the crops everywhere promise to be most abundant, and consequently the trade generally is waiting for a lower range of values. Small orders for Trifolium still drop in. Seed Rye and Tares are now obtainable on remarkably low terms. Blue Peas are in improved request. The new Haricots are good and cheap. This year's English Mustard is coming to market at about 10*s.* per bushel. Rape seed is firm. There is no change in bird seeds.

POTATOS.

BOROUGH AND SPITALFIELDS: *Sept.* 24.—Fairly adequate supplies, and good demand for best samples. Other grades dull, and prices rather irregular. Early Rose, 40*s.* to 60*s.*; Regents, 60*s.* to 80*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 50*s.* to 70*s.* per ton.

SPITALFIELDS: *Sept.* 25. — Quotations :— Early Rose, 50*s.* to 60*s.*; Magnums, 45*s.* to 60*s.*; Regents, 50*s.* to 65*s.*; Imperators, 50*s.* to 60*s.*; Hebrons, 55*s.* to 70*s.* per ton.

STRATFORD: *Sept.* 24. — Quotations :—Hebrons, 60*s.* to 80*s.*; Elephants, 50*s.* to 70*s.*; Regents, 55*s.* to 70*s.*; Magnums, light soil, 55*s.* to 70*s.*; do., dark soil, 45*s.* to 50*s.* per ton.

NOTICES TO CORRESPONDENTS.

ALLAMANDA VIOLACEA: *W. W.* The flower sent is not the dirty colour described by Mr. Outram in the *Gardeners' Chronicle*, p. 333; but perhaps he had seen only a poor strain, as there is some range of colour in this species.

APPLES ON CLAYEY LOAM, CROPPING, &C.: *Pomona.* The fruits will come into bearing much sooner on the Paradise Apple stock. Apple trees in the open do not, as a rule, "wear out" from excessive cropping, unless they be starved in poor soil. It is seldom that we get a succession of fruitful years, and naturally in an unfruitful one the trees regain vigour, and sometimes to an undesirable extent. Vigour in trees is mostly a matter of manuring, and, to a certain extent, of soil, but even bad soils may be made suitable. The soil you mention would suit either the Paradise or the Crab stocks, and the varieties you name will do well on either. Bismarck is a large kitchen fruit of great weight, and resembling a large Blenheim Orange. It is a free bearer, and late. It is said to have a future, but we must wait before deciding that point. Lady Sudeley is a large dessert variety, one of the best of recent introductions, is of great fertility, and the fruit of handsome appearance. Transparente de Croucelles is good for dessert or kitchen use; it is large, soft, early, and of second quality. Duchess of Oldenburg, or Borowitzky, is a Russian variety, and consequently possesses great hardiness, and this will doubtless account for its generally great fertility. It does not suffer so much from spring frost as do most Apples. Yorkshire Beauty is another pretty certain cropper, but it is not so well known as it should be.

ASTERS, GLOBE QUILLED: *Kelway & Sons.* A very pretty selection; good for small beds and pot-culture, if the habit is compact, and height moderate.

BEGONIA WITH PARTLY GREEN PETALS: *W. B. S.* It is a curiosity, but of no great beauty, and merely proves how petals may take on the colour of the leaves, and of which they are but modified forms.

BOOK—ORCHIDS: *G. N.* There are several. The best, perhaps, is Mr. B. S. Williams' *Manual of Orchids*, published by him at Paradise Nursery, Upper Holloway, N. Another, and cheaper manual, is *Orchids for Amateurs*, by Messrs. J. Britten and W. H. Gower, *Bazaar* office, 170, Strand, London, W.C.

CHAMOMILE FLOWERS: *R. W.* Enquire of some wholesale druggist. The price is very small.

FREESIA REFRACTA ALBA: *Burwell, Cambridge.* See article in present issue, p. 353.

GARDENIAS: *H.* The roots are being destroyed by the root-worm, A. Curculio, which is hatched in the bark of the root, and feeds on its substance. You can hardly destroy it, and the best policy will be to clear out the old plants and every vestige of soil, and start with fresh plants from a distance, and soil from a new source. The bed of leaves has not anything to do with the insect.

LEAVES DISFIGURED: *H. W. G.* The spots on the Dock leaves are due to the growth of a fungus. Those on the Hellebore leaves are different, and are, we believe, caused by radiation when the leaf was wet with dew, in consequence of which the tissues are destroyed as by frost.

MELON ROOTS: *J. U.* Your plants are attacked by the root-worm. Use entirely fresh soil.

NAMES OF PLANTS: *W. F. T.* Anthyllis vulneraria, and Gentiana Amarella.—*K.* Cacalia coccinea.—*G. A.* Probably Bignonia radicans.—*W. P.* Pinus excelsa. The fungus is a Polyporus.—*F. H.* 1, Populus alba; 2, P. a. var. Bolleana, if of pyramidal habit.—*J. McI.* Send better packed material. Is it a form of A. capillus-veneris?—*T. and P.* Indigofera. We do not recognise the species. Send it with fruit, and state country.—*G. S.* 1, Aster multiflorus; 2, Aster versicolor; 3, Aster diffusus; 4, Aster amellus; 5, Erigeron multiradiatus; 6, Aster novæ-angliæ.

PEACH LEAVES EATEN BY INSECTS: *E. H.* The work, doubtless, of the red legged weevil (Otiorhynchus tenebricosus), this insect being especially fond of preying on the leaves, buds, bark, &c., of the Peach, Plum, &c. The young fruits fell off in the spring either because they were directly injured by them, or indirectly, owing to the great loss of leaves. Since that time the weevils have taken to other food. This and other weevils feed by night, and may be caught at that time on wooden trays, or pieces of board, covered with tar, held under the foliage of the trees, Vines, &c., as on the approach of a light they drop from the branches or leaves, on to the ground. The tar holds them prisoners, and they may then be killed with boiling water. It must be persevered with, and several persons employed. During the day they hide under stones, or in the earth.

PELARGONIUM: *G. W. B.* Swanley Bronze Tricolor, probably, one of the best of the section.

PERISTERIA ELATA: *J. H.* Yes, in weak spirits, but glycerine is better for preserving any kind of flower.

STOCKS: *C. B.* Perfectly double flowers of Stocks have no organs of reproduction, and seeds are obtained from partly double flowers on plants grown in pots.

TOMATO DISEASED: *Tomato.* The plants are affected with Peronospora lycopersici, a fungoid growth, which spreads with marvellous rapidity, and is allied to the dread Potato rot. You can do nothing but clear out the plants, burning every part, and the soil, charring that to destroy the spores. It would not be advisable to plant the house again for some time.

CATALOGUES RECEIVED.

DICKSONS (Limited), The Nurseries, Chester—Roses.

HENRY BENNETT, Pedigree Rose Nursery, Shepperton, Middlesex—New Roses.

BRUANT, Poitiers, Vienne (France)—Plant List.

WILLIAM WATT, Cupar, Fife, and Perth — Dutch Bulbs, &c.

JOSEPH BRECK & SONS, 51, 52, 53, North Market Street, Boston, Mass., U.S.A.—Dutch Bulbs, &c.

COMMUNICATIONS RECEIVED.—Hope.—H. R.—E. A.—W. J. B.—C. J. Goldsmith.—S. Gosse.—J. W. O.—P. L. S.—H. L. —R. W. M.—H. J. C.—D. D.—E. J.—Wild Rose.—J. D.—H. W. G., next week.—W. Tuckwell.—P. S.—J. H.—J. Craghill & Sons, was answered on August 17, p. 200, photograph mislaid.—W. N.—T. H. M., MS. with thanks.—Mertens & Co.—J. U.—W. D.—J. L. & S.—J. M., next week.—J. V. V., Brussels.—Dippel.—R. B.—Br. M.—W. E.—J. S.—W. H.—J. W.—Dr. S.—A. D. W.—J. W. C.—G. H. B.—D. H.

DEATH.—We regret to announce the death, on September 5, of Mr. D. MELVILLE, Florence Villas, Birmingham, second son of Mr. W. Melville, late of Dalmeny Park, near Edinburgh.

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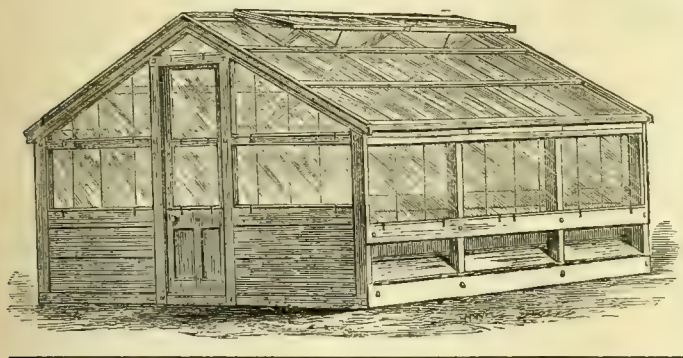
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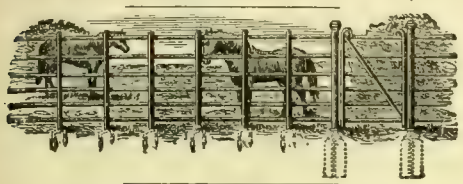
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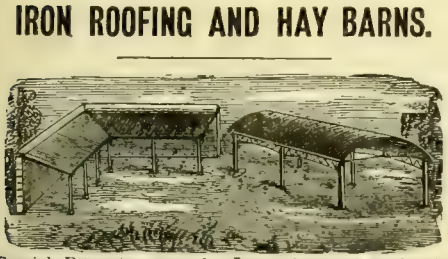
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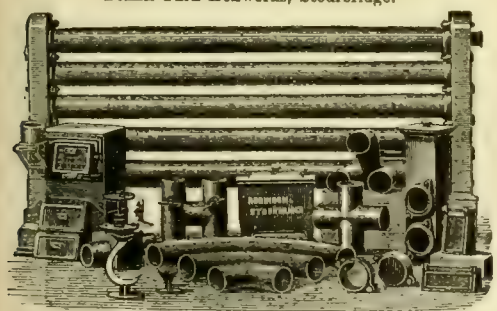


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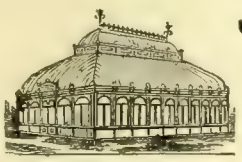
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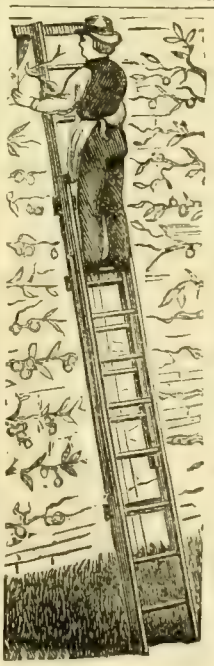
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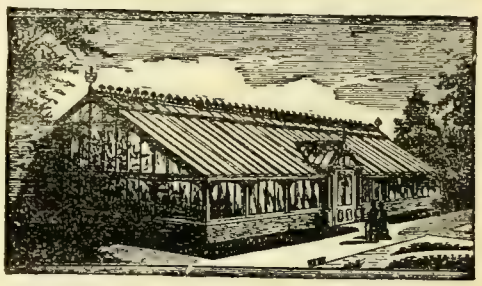
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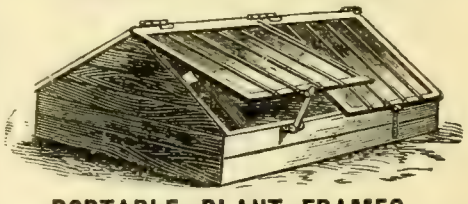
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9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
12	„ ..	0	7	0	23	„ ..	0	12	6
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STOCK SIZES	Inches.
	14×12
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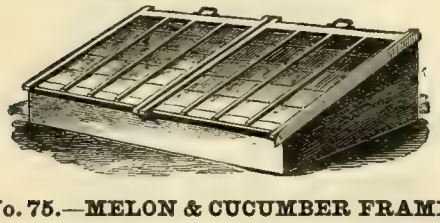
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		Length.	Width.		
1	Light Frame,	4 ft.	by 6 ft.		£2 0 0
2	„ „	8 „	by 6 „	Cash	3 0 0
3	„ „	12 „	by 6 „	Prices,	4 5 0
4	„ „	16 „	by 6 „	Carriage	5 10 0
5	„ „	20 „	by 6 „	Paid.	6 15 0
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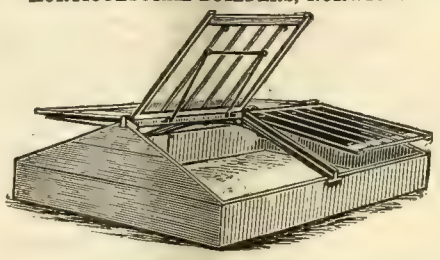
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		Length.	Width.		
1	Light Frame,	4 feet	by 6 feet ...	CASH PRICES, CARRIAGE and PACKING FREE.	£2 17 6
2	„ „	8 feet	by 6 feet ...		4 7 6
3	„ „	12 feet	by 6 feet ...		5 17 6
4	„ „	16 feet	by 6 feet ...		7 7 6
5	„ „	20 feet	by 6 feet ...		8 17 6
6	„ „	24 feet	by 6 feet ...		10 7 6

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The Nursery Floor should be regularly scoured with HUDSON'S SOAP. It will dry quickly, and the room will be sweetened and purified. Also Baths, Feeding Bottles, and all Nursery Utensils.

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And you Scrub! Scrub! Scrub!
You'll find that it's not in your power
In the old-fashioned way to do in a day
What Hudson's will do in an hour!

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Is a pure Dry Soap in Fine Powder, in 1-lb., ½-lb., and ¼-lb. packets, makes a foaming lather, and keeps the clothes a good colour.

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Is excellent for Washing Flannels and Woollen Underclothing, as well as Linen, Shirts, Collars, Sheets, Tablecloths, &c.

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For Washing-up. Hudson's is as good for Plates, Dishes, Knives, Forks, &c., as for Washing Clothes. Hudson's leaves No Smell.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, September 28, 1889. Agent for Manchester—JOHN HEYWOOD.

R. A. S. E. AGRICULTURAL COLLEGE

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2545.

No. 145.—Vol. VI. {Third Series.} SATURDAY, OCTOBER 5, 1889. {Regt. as a Newspaper. WITH SUPPLEMENT. PRICE 3d. POST-FREE, 3½d.

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THE GARDENERS' CHRONICLE, Vol. V., Third Series, JAN. to JUNE, 1889.
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THE TWICKENHAM CHRYSANTHEMUM SHOW will be held in the Town Hall on TUESDAY and WEDNESDAY, November 19 and 20. All particulars may be had of Mr. J. J. G. PUGH, Hon. Sec.
2, Heath Road, Twickenham.

UNITED HORTICULTURAL BENEFIT and PROVIDENT SOCIETY.
The ANNUAL DINNER of this Society will take place on WEDNESDAY, October 23 inst., at the Cannon Street Hotel, E.C., at 5.30 P.M. N. N. SHERWOOD, Esq., will preside.
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GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

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On view morning of Sale, and Catalogues had.

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Standard, Dwarf, and Climbing ROSES, including the best Hybrid Perpetual and Teas; choice Hardy AMERICAN PLANTS, RHODODENDRONS, and other Evergreen Shrubs; ORNAMENTAL and FRUIT TREES, and a variety of GREENHOUSE and DECORATIVE PLANTS, CARNATIONS, PICOTEES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, October 8, at half-past 12 o'Clock.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

SPECIAL SALE OF LILIES.—Important to the Trade.

3,000 Lilium auratum, special Bulbs (some of the finest ever offered), just received from Japan, also several thousands of various Lilies, including 2,000 Lilium rubrum cruentum, 1,600 Lilium album Kroetzeri, 5,500 Lilium longiflorum, grand bulbs, 200 Lilium auratum rubro vittatum and virginale, tigrinum, eximium, elegans, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 8, at half-past 11 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Woking.—Expiration of Lease.

CLEARANCE SALE of 3 Acres of general NURSERY STOCK, in consequence of the Expiration of the Lease of this portion of their Nursery, by order of Messrs. T. Holdforth & Sons.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Sander's Lane Nurseries, Woking, 1 mile from Worplesden Station, on TUESDAY and WEDNESDAY, October 8 and 9, at 12 o'Clock each day, without reserve, the whole of the unusually well-grown NURSERY STOCK standing upon this portion of their Nursery, consisting of, amongst many other items, thousands of young Conifers for growing on, 3000 Rhododendrons, 1200 Thuja Lobbi, 2 to 5 feet; 2500 Aucubas, 1 foot to 2 feet; 5,000 Deutzia gracilis for potting on, a large quantity of Pampas Grass, 4300 Portugal Laurels, 40,000 Berberis, 26,000 1-yr. Quick, &c.

May now be viewed. Catalogues obtained on the Premises, and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

Wednesday next.

400 AZALEA INDICA and CAMELLIAS, PALMS, and other PLANTS from Belgium, 300 lots of first-class DUTCH BULBS, and a variety of ANEMONES, Giant SNOWDROPS, CHIONODOXAS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, on WEDNESDAY NEXT, October 9, at half-past 11 o'clock, without reserve.

On view morning of Sale, and Catalogues had.

Southbourne-on-Sea.

About 1½ mile from Christchurch and Boscombe Stations, and 3 miles from Bournemouth.

Important to Nurserymen, Gentlemen, and Others.

Great CLEARANCE SALE of the whole of the GREENHOUSE PLANTS, NURSERY STOCK, the WINTER GARDEN, GREENHOUSES, PIPING, HORSES, CARTS, &c., by order of the Southbourne Winter Gardens Company, who are relinquishing their business.

MESSRS. PROTHEROE AND MORRIS (in conjunction with Messrs. McEWAN, BROWN, AND WYATT) are instructed to SELL by AUCTION, on the respective Premises, on TUESDAY, October 8, and three following days, viz., on TUESDAY and WEDNESDAY, October 8 and 9, at The Winter Garden, Southbourne-on-Sea, on THURSDAY, October 10, at the Boscombe Nursery, Boscombe, and on FRIDAY, October 11, at the Nursery, Christchurch, at half-past 12 o'Clock precisely each day, the whole of the extensive stock of STOVE and GREENHOUSE PLANTS, being the contents of 20 Greenhouses, including large Camellias, Ferns, Palms, and Stephanotis.

4000 Gardenias	300 Dendrobium nobile
2500 Double White Geranium (candidissima flore-pleno) for cutting	3000 White Chrysanthemums
	2300 Arum Lilies
	500 Azaleas

double white Primulas, Vallotas, Pearl Tuberoses, &c. The erection of the span-roof Winter Garden, 200 feet in length; four Greenhouses, several boilers, 2,000 feet of 4-inch hot-water piping, also the out-door Nursery Stock of the Boscombe and Christchurch Nurseries, comprising 12,000 common Laurels, 3 to 4 feet, 2,000 other Laurels, large quantities of various Conifers, 50,000 Asparagus; the erection of Show-house and piping at the Boscombe Nursery; the whole of the Farm Implements, three Cart Horses, Carts, Waggon, Harness, Rollers, corrugated iron, and numerous other items.

May be viewed one week prior to the Sale.

Catalogues obtained at the respective Nurseries, of Messrs. McEWAN, BROWN AND WYATT, Auctioneers and Estate Agents, Bournemouth, and of Messrs. PROTHEROE AND MORRIS, Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

N.B. Conveyances will meet the 11.57 A.M. train from London at Christchurch Station, on October 8 and 9, to convey intending purchasers to the Southbourne Winter Garden.

Borrowash, near Derby.

Important to Noblemen, Gentlemen, and Others desirous of obtaining beautifully grown specimen CONIFERS for which this Nursery has so long been noted.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. Barron & Son to SELL by AUCTION on the Premises, the Elvaston Nurseries, Borrowash, near Derby, close to the Borrowash Station, on WEDNESDAY and THURSDAY, October 9 and 10, at 11 o'Clock precisely each day, a large quantity of beautifully-grown NURSERY STOCK, carefully prepared for removal, including a great variety of choice and rare specimen Conifers, large ornamental Deciduous Trees, for park or street planting; many thousands of various Trees and strong Quick, and a variety of Greenhouse Plants, Ferns, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be obtained at the Nurseries; at Messrs. BARRON AND SON'S late Seed Shop, 16, Market Street, Nottingham; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Hayward's Heath.

About 1 Mile from the Railway Station.

SALE of well-grown NURSERY STOCK, the ground being required for other purposes.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Banks, to SELL by AUCTION, on the Premises, Bank's Nursery, Hayward's Heath, on THURSDAY, October 10, at 12 o'Clock precisely, a large quantity of well-grown NURSERY STOCK, carefully transplanted, and now in capital condition for removal, including a choice assortment of Conifers and Evergreens, 800 American Arbor-vitæ, 4 to 8 feet; 1000 Green Hollies, 2 to 4 feet; 4000 Common and other Laurels, 1½ to 5 feet; 7000 extra strong Quick, 900 Golden Euonymus, in pots; Standard Ornamental Trees, 5000 Gooseberries and Currants, fine bushes; 3000 Raspberries, Laxton's Noble Strawberries, and others. Also a strong, spring, Market VAN.

May now be viewed. Catalogues obtained on the Premises, and of the Auctioneers and Land Agents, 67 and 68, Cheapside, London, E.C.

Leamington.

CLEARANCE SALE of NURSERY STOCK, GREENHOUSE PLANTS, GLASS ERECTIONS, &c., by order of Messrs. Wills & Son, who are retiring from the Business.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, Milverton, Leamington, adjoining the Milverton Station, L. & N. W. Ry., on FRIDAY, October 11, at 12 o'Clock precisely, without reserve, the whole of the well-known NURSERY STOCK, including a great variety of Border Shrubs, Specimen Cedrus deodara, Hardy Ferns in variety, 3000 Herbaceous Plants; Greenhouse Plants, consisting of Ferns, Epacris, Heaths, Camellias, &c.; Succulent Plants, the ERECTIONS of 5 GREENHOUSES, PITS, HOT-WATER PIPING, BOILERS, BRICKWORK, TOOLS, 2 LAWN-MOWERS, and other Effects.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Friday Next, October 11.

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A rare and fragrant species from the Chiriqui Lagoon. Flowers 7 inches in diameter, the large expanded labellum pure white. Borne in terminal heads on short, often branched spikes; the plants are in grand order, fresh as when collected.

Also some extraordinary CATASETUMS, with very large handsome flowers, the male and female flowers very dissimilar in appearance, and other interesting species from Central America, and a few good plants of the handsome SCHOMBURGKIA LYONSII.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 11, at half-past 12 o'Clock precisely.

The Sale will also include a small collection of about 500 plants of ESTABLISHED ORCHIDS, the property of a gentleman deceased.

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTED and ESTABLISHED ORCHIDS, from Messrs. Charlesworth, Shuttleworth & Co., Heaton, Bradford, and 191, Park Road, Clapham, consisting of Oncidium macranthum in splendid condition, with fine growths; Odontoglossum Halli, O. cirrhosum, O. sceptrum, Oncidiums in variety, Masdevallias, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 11, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Sunningdale.—Without Reserve.

Six days' absolute CLEARANCE SALE of 30 Acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who has unexpectedly received from St. John's College, Cambridge, peremptory notice to quit all lands held under them. Important to Noblemen, Gentlemen, Builders, Nurserymen, and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, close to the Sunningdale Railway Station, on MONDAY, October 14, and five following days, at 12 o'Clock precisely each day, without the least reserve, about 30 acres of beautifully grown NURSERY STOCK, carefully prepared for removal, including 30,000 Rhododendrons, 1 to 7 feet, many of them handsome specimens of the best-named kinds; and 1000 Standard Rhododendrons of the finest named varieties, the whole comprising such a stock probably never before offered by Auction; 50,000 Laurels, of sorts, 1 to 4 feet; 100,000 Conifers in various sizes, including many fine specimens; Aucubas, several thousands of Ornamental Trees, particularly suitable for Avenue, Park, or Street planting; a very fine collection of 5000 Standard and Pyramid Fruit Trees, 5000 named Gooseberries, thousands of American Plants, 50,000 Berberis for cover planting, and other Stock.

May be viewed any day, Sunday excepted, prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Land Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Luncheon will be provided for intending purchasers, and arrangements can be made with Mr. Noble to lift and forward any lots to all parts of the kingdom, in respect of labour incurred and material used.

Chigwell.

CLEARANCE SALE by order of Mr. J. H. Brown, in consequence of the expiration of tenancy.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Rolls Park, Chigwell, ten minutes walk from Chigwell Lane Station, on TUESDAY, October 15, at 12 o'Clock, without reserve, the whole of the Outdoor NURSERY STOCK; a splendid lot of Orchard Fruit Trees, specially prepared for removal; large quantities of Currants and Gooseberries; Strawberries in Pots; Greenhouse Plants in variety; 300 Maidenhair Ferns; Greenhouse and Piping, Frames, the Utensils in Trade, two Carts, useful bay Mare, small Stack of Hay, a few other items of Furniture, and other effects.

May be viewed three days prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C., and Leytonstone.

The Salisbury Road and Avenue Nursery, Willesden

LANE, N.W., five minutes' walk from Queen's Park Station, L. & N. W. R., and Brondesbury Station, N. L. R.

Sale of a large quantity of GENERAL NURSERY STOCK, and 15,000 PALMS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. B. Goubert, to SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, October 15 and 16, at 12 o'Clock each day, a portion of the valuable and well-grown NURSERY STOCK, including 3000 Border Shrubs, specially suitable for the neighbourhood of London; 2000 Laurels, 3 to 5 feet; 7000 Aucubas, 5000 Golden Euonymus, 1000 large Green Euonymus, fine ornamental Trees, together with about 15,000 PALMS, of sorts, including 6000 Corypha Australis, 5000 Latania Borbonica, and others.

May be viewed one week prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Richmond, Surrey.

About 10 minutes' walk from Richmond Railway Station.

UNRESERVED SALE of well-grown general NURSERY STOCK, all carefully prepared for removal, including a large quantity of various Conifers, 2500 Laurels, 1500 Aucubas, 2000 oval-leaved Privet, 3500 Golden and Green Euonymus, 2000 Poplars, 2000 Ivies in pots, 2000 Cloves, a choice assortment of Stove and Greenhouse Plants, including Specimen Palms and Ferns, and other Plants.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the St. Mary's Grove Nursery, Richmond, Surrey, close to the Drill Hall, on FRIDAY, October 18, at 12 o'Clock precisely, by order of Mr. W. Brown.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Isleworth.

SPECIAL ANNUAL TRADE SALE of thousands of beautifully grown Golden EUONYMUS and young CONIFERS, for immediate potting, window boxes, or for growing on, by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, on MONDAY, October 21, at 12 o'Clock, 5000 of the best Silver and Golden EUONYMUS, splendidly coloured; 1000 AUCUBAS, 1 to 3 feet; 500 AZALEA MOLLIS; 1000 Standard Apples, of the best sorts; thousands of various CONIFERS for potting and planting out.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises; at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Preliminary Notice.

The well-known Collection of ESTABLISHED ORCHIDS, formed by the late C. J. Partington, Esq., of Heaton House, Cheshunt, and including undoubtedly the finest lot of Phalænopsis that has been offered for many years.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have been favoured with instructions to prepare for SALE by AUCTION, on OCTOBER 22 and 23, the above well-known Collection of ESTABLISHED ORCHIDS, including an exceptionally fine lot of Phalænopsis, the whole of the plants being remarkably well-grown, and in excellent condition. The Collection also includes a very fine batch of Cattleya Mendelii, five plants of C. Gaskelliana alba, C. Mossiæ, a splendid lot of Masdevallias, and others.

Further particulars will appear in future announcements. Catalogues are now in course of preparation.

67 and 68, Cheapside, E.C.

Exeter.

SIX DAYS UNRESERVED SALE of particularly well-grown NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co., who are relinquishing the business, to SELL by AUCTION, on the Premises, the Exeter Nursery, Exeter, on MONDAY, October 28, and five following days, at half-past 12 o'Clock precisely each day, without the slightest reserve, the First Portion of the extensive NURSERY STOCK, presenting to Gentlemen and the Trade largely engaged in planting, a splendid opportunity of securing acres of well-assorted and thriving young stock; also 15,000 GREENHOUSE PLANTS, including 3,000 well-grown Ericas, 1,500 Camellias and Azaleas, and other Stock.

May be viewed any day prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Harrow-on-the-Hill.

By order of Mr. E. Chamberlain, who is retiring from the business, valuable FREEHOLD BUILDING ESTATE or NURSERY LAND, and the whole of the STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Nursery, Sheepcote Lane, Harrow-on-the-Hill, on MONDAY and TUESDAY, October 28 and 29, the whole of the GENERAL NURSERY STOCK, in capital condition for removal.

The valuable FREEHOLD BUILDING ESTATE, of about 3 acres, with a commanding frontage to Sheepcote Lane, will be Sold on the first day prior to the Nursery Stock.

Further particulars will appear.

Eltham.

GREAT UNRESERVED CLEARANCE SALE of over 20 Acres of remarkably well-grown and thriving NURSERY STOCK, by order of Mr. Todman, in consequence of the expiration of the Leases, to be Sold by

MESSRS. PROTHEROE AND MORRIS, on the Premises of the Eltham Nursery, Eltham, Kent, 1 mile from the Eltham Railway Station, on MONDAY, November 18, 1889, and following days, at 12 o'Clock punctually each day, without reserve, the whole of the unusually well-grown NURSERY STOCK, extending over 20 acres, now in excellent condition for removal.

Fuller particulars will appear in due course.

American Nurseries, Bagshot, Surrey.

PRELIMINARY NOTICE.

EXTENSIVE SALE of SURPLUS NURSERY STOCK. Highly important to the Trade and Gentlemen engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Waterer & Sons, to SELL by AUCTION, on the Premises, the American Nurseries, Bagshot, Surrey, EARLY in NOVEMBER, an unusually large quantity of attractive NURSERY STOCK, in grand condition for removal.

Full particulars will be announced shortly.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Thursday Next, October 10.

SPECIAL TRADE SALE OF DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 10, at half-past 12 o'Clock precisely, several hundred lots of First-class BULBS from Holland, lotted to suit the Trade and other Large Buyers, comprising choice named Hyacinths, Tulips, Crocuses, Narcissus, Scillas, &c.; also Roman Hyacinths, Paper-white and Roman Narcissus for forcing, &c.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, October 17, at half-past 12 o'Clock precisely, and he will be glad if gentlemen desirous of ENTERING PLANTS FOR THIS SALE, will please SEND LISTS NOT LATER THAN THURSDAY NEXT.

Englefield Green.

ORCHIDS and ORCHID-HOUSES.—Without reserve.

MR. J. C. STEVENS has received instructions from Col. Deare, to SELL by AUCTION, on the Premises, Englefield Green, about the MIDDLE of OCTOBER, without reserve, the Collection of ORCHIDS and other STOVE PLANTS, the GLASS-HOUSES, Hot-water PIPING, BOILERS, SLATE STAGING, &c.

For Date of Sale and further particulars, see next Advertisement.

Auction Rooms and Offices, 38, King Street, Covent Garden, W.C.

Cart House Lane Nursery, Horsell.

About 2 Miles from the Woking Station on the S.W. Railway.

SALE of exceptionally well-grown NURSERY STOCK.

MESSRS. WATERER AND SONS are instructed by Mr. Richard Collyer, to SELL by AUCTION, upon the Premises, as above, on MONDAY, October 7, and two following days, at 11 for 12 o'Clock precisely each day, the well-grown NURSERY STOCK on the above Land, comprising a great variety of very fine Ornamental Evergreen Trees and Shrubs, 3000 Variegated, Green, Standard, and other Hollies, 3 to 8 feet; 80,000 Seedling ditto, 25,000 Yews, from 2 to 7 feet; 120,000 strong 3-yr. old Quick, 2000 Spruce Fir, 3 feet; 1500 Thuja Lobbii, from 4 to 7 feet; Cupressus Lawsoniana and erecta, Thujopsis picea, Retinospora, Aucuba, Laurels, Privet, Rhododendrons, Deutzia, Weigela syringa, Double Scarlet Thorns, and other flowering Shrubs. Forest Trees, Fruit Trees.

The Auctioneers draw the special attention of Purchasers requiring plants for ornamental and other purposes, to this Sale, the whole of the Stock, including the fine Specimen Trees and Shrubs, being well-rooted and in perfect condition for removal, having all been moved within two years.

May be viewed seven days prior to the Sale, and Catalogues obtained on the Premises, and of the Auctioneers, at either of their Offices, Chertsey, Weybridge Station, and opposite the Station Entrance, Walton-on-Thames.

Re John Stott, a Bankrupt.

IMPORTANT to NURSERYMEN, FLORISTS, and OTHERS.

MR. CHARLES P. PLANT begs to announce that he has received instructions from A. C. Proctor, Esq., the official receiver, to SELL by AUCTION, on the Premises, on FRIDAY, October 11, at 2 o'Clock prompt, the NURSERY, in Hogshaw Lane, Buxton, with the Greenhouses and other Fixtures, valuable Hothouse Plants and Growing Crops, and other Stock in Trade of a Nursery Gardener.

Also for the residue of a term of 5 years in the above NURSERY GARDENS, commencing from Ladyday, 1888 (renewable at the option of the tenant for a further term of 5 or 10 years), subject to the terms of the agreement of tenancy with the Landlord. A Copy of the same, and Inventory of the said Stock and Fixtures, may be inspected at the Office of the Auctioneer.

N.B. The whole will first be offered in One Lot, as a going concern, and if not sold it will be offered in Lots to Suit Purchasers.

Auctioneers Office, Nuttall Terrace, Hardwick Mount, Buxton.

Nine Elms Nurseries, Leek.

PRELIMINARY NOTICE.—Highly important UNRESERVED SALE of valuable and extensive well-grown NURSERY STOCK, the property of Mr. George Mathews, prior to removal, LATE in OCTOBER.

Full particulars in due course.

Nursery Stock.—West Wickham, Kent.

Under Bill of Sale, and by order of Trustee.

AUCTION SALE of about 40,000 well-grown FOREST and FRUIT TREES, CONIFER, AUCUBAS, specimen WELLINGTONIA, border and pot SHRUBS, about 10,000 Standard and Dwarf ROSES, &c.

MR. W. LEVENS will SELL the above, on THURSDAY, October 31, 1889, and two following days, at 11 for 12 o'Clock each day.

Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham; and also at 6, Kirkdale, Sydenham, S.E.

N.B. West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

To Nurserymen, Seedsmen, and Florists.

FOR SALE, by Private Treaty, a first-class NURSERY and FLORIST'S BUSINESS, together with ¾ acre LAND, 7 Greenhouses (containing 25,000 feet Glass), with Cottage, Out-house, &c., in principal town in Lincolnshire. Cut Flowers a specialty.—Further particulars, and card to view, apply, BOX B—37, Leeds.

UPTON NURSERY, Upton Lane, Forest Gate, E., for Sale 6 Glasshouses, Stock, &c. Lease for 21 years. Arrangements could be made for payment by instalments. No reasonable offer refused. Apply any day after 5.

TO FLORISTS.—Handsome Frontage, Green and Stovehouses at back, and large Yard, 59 by 30. Main thoroughfare, Lee, S.E. No Premium required, or Stock to be taken to. Rent, on Lease, fifteen years, £40 first year, £45 second year, and £50 for remainder.

Apply to Messrs. DYER, SON, AND HILTON, 33, Walbrook, E.C., and Blackheath (3154).

TO BE LET, on Lease, about 2 acres of productive NURSERY LAND, with Stabling, Outbuildings, and about 13,500 super. feet of Glass. About 5 minutes from Waltham Cross Station, Great Eastern Railway. Apply to E. A. H., Queen Anne's Lodge, Waltham Cross, N.

Fifty Nurseries, Market Gardens, Florist and Seed BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

The London Fern Nursery Annual Sale.

FERNS, to the Trade, cheap.—ADIANTUM, PTERIS, and 20 other saleable sorts, at 10*s.* and 12*s.* per 100, in 60's. 100,000 surplus stock to select from. Packing free. 1 large DICKSONIA ANTARCTICA, 5 feet, fine plant, cheap.—SMITH, London Fern Nursery, Brixton, S.W.

W. GORDON'S first consignment of LILIUM AURATUM has arrived. Prices, 4*d.*, 6*d.*, 9*d.*, 1*s.*, and 1*s.* 6*d.* each; per 100, 30*s.*, 35*s.*, 45*s.*, 55*s.*, and 70*s.* Liberal allowance to the Trade. Apply for CATALOGUE to The Nurseries, Amyand Park Road, Twickenham.

SPECIMEN PLANTS for SALE.—Taken 1st Prizes at Manchester, Liverpool, Cheadle, Shrewsbury, Northampton, and other Shows. For prices, names, &c., apply, C. ROBERTS, Highfield Hall, Leek, Staffs.

RICHARDIA ALBA MACULATA.—Strong Bulbs of the above-mentioned can be had at moderate prices. Apply to P. VAN TIL JZ., AND CO., Florists, Hillegom, near Haarlem, Holland.

A SMALL LOT of QUEEN PINES to be Sold, Fruiting and Succession. To be Sold in consequence of alterations. Apply to Mr. COMFORT, The Gardens, Knowle Hall, Warwickshire.

HIMALAYAN PRIMROSES.—Special Offer. Primula rosea for Spring Bedding. For price per 100, Address, F. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

RHUBARB ROOTS for SALE.—2000 very strong stools of Victoria, true, and 2000 strong stools of very early varieties of sorts.

Prices and particulars, W. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

BULBS, English grown.—SNOWDROPS, single and double, 1*s.* 3*d.* per 100.
CROCUSES, three colours, mixed or separate, 1*s.* per 100.
Winter ACONITES, 10*s.* per 1000, or 1*s.* 3*d.* per 100.
STARS of BETHLEHEM, 10*s.* per 1000, or 1*s.* 3*d.* per 100.
Pheasant-eye NARCISSUS, 10*s.* per 1000, or 1*s.* 6*d.* per 100.
DAFFODILS, single or double, 12*s.* per 1000, or 1*s.* 9*d.* per 100.
BIFLORUS, 10*s.* per 1000, or 1*s.* 6*d.* per 100.
SCILLAS, three colours, 10*s.* per 1000, or 1*s.* 6*d.* per 100.
LILIUM CANDIDUM, 1*s.* 6*d.* per doz.
TULIPS, 4*s.* per 100, or 6*d.* per doz.
POLYANTHUS NARCISSUS, 1*s.* 6*d.* per doz.
LILY OF THE VALLEY, 50 for 9*d.*, or 1*s.* 3*d.* per 100.
JONQUILS, sweet-scented, 1*s.* 3*d.* per 100.
Orange PHŒNIX, 5*s.* per 100.
ILIES: Purple, 1*s.* 6*d.* per doz.; Red, 2*s.* 6*d.* per doz.; Yellow, 2*s.* 6*d.* per doz.; Orange, 2*s.* 6*d.* per doz.; Scarlet, Martagons, 5*s.* per doz.
All free by Parcel Post, and subject to approval.
O. D'ALCORN, London Road, Spalding.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that an ADDITION will be made to the PENSION LIST of this Institution in JANUARY NEXT. All persons desirous of becoming Candidates are requested to send in their applications with Certificates and Testimonials to the Committee, on or before Saturday, Nov. 9 next, after which day they will not be received. Preference will be given to those Applicants (or their Widows), who have been on the Books of the Institution as Subscribers for Fifteen clear Years. Should there not be a sufficient number of these Applicants to fill the Vacancies, then the claims of those who have not subscribed so long, or not at all, will be taken into consideration. By Order,

EDWD. ROGER CUTLER, Sec.,

50, Parliament Street, London.—October 1, 1889.

P.S. Printed Forms of Application and all information can be obtained from the Secretary.

FOR SALE, 10,000 GENISTAS in 3-inch pots, good plants, 8*s.* per 100. Bushy plants in 40-pots 5*s.* per dozen.

Cash with order, by postal order made payable at High Street, Leyton.

T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.

DELIGHTFUL GROUNDS, with prettiest FRUIT ORCHARDS, in Kent, 9 miles from London, and charming detached RESIDENCE. Drawing-rooms, dining, library, kitchens, &c., all on ground floor; nine bedrooms and bathroom. Hot and cold water. Abundance of choice fruit and flowers; conservatories, extensive stabling, &c. Gardener's cottage. Only £140 per annum, with Premium.

Apply immediately, A., Woodville, Welling.

The New Early Dessert Apple.

COOLING'S BEAUTY OF BATH should be added to every collection. It is the best flavoured and handsomest early Apple yet introduced, and will be indispensable as an early Dessert Fruit when it becomes known. Strong Maiden Trees, 2*s.* 6*d.* each, 24*s.* per dozen; 2-yr. Trees, 3*s.* 6*d.* each, 36*s.* p. dozen; Pyramids, 5*s.* each; Dwarf Trained, 7*s.* 6*d.* each.

Full description in Fruit Tree LIST, free by post.

GEO. COOLING AND SONS, The Nurseries, Bath.

BULBS—BULBS—BULBS.—Our early importations are now to hand in first-rate condition. Roman Hyacinths, splendid, 14*s.* to 16*s.* per 100. Polyanthus Narcissus, Paper White, 5*s.* per 100; Early Roman, 6*s.* per 100; Grand Primo, 6*s.* 6*d.* per 100. Garden Hyacinths, 10*s.* per 100; Pot kinds, 2*s.* 6*d.* per dozen; first size, finest quality for show, 4*s.* to 6*s.* per dozen. Garden Narcissus, a specialty, most of the varieties Home-grown. Iris hispanica, this lovely gem, 1*s.* 6*d.* per 100. CATALOGUES free.

Orders despatched promptly.

J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

SPECIAL OFFER of FERNS for CASH.—Extra strong, in thumbs, for immediate Potting, in the following varieties:—Pteris cretica, tremula, cretica cristata, albo-lineata, hastata, serrulata, cristata compacta, A. cuneatum, and an extra fine lot of Lomaria gibba and Doryopteris palmata. Also a fine lot, in 48's, Pteris cretica, cretica cristata, serrulata cristata compacta, Polypodium, Dicksonia antarctica, Greville robusta, and Aralia Sieboldi.

Price for thumbs per 100 or 1000, and 48's per 100 on application.

Inspection invited by

R. PENGELLY, Dyson's Lane, Upper Edmonton.

LARGE IRISH BEACONSFIELD YELLOW PRIMROSE SEED, for naturalisation and exportation. New crop, 1889, just gathered, in fine condition, per lb., 50*s.*; ½ lb., 27*s.* 6*d.*; 4 ounces, 15*s.*; ounce, 5*s.* Also rare Daffodil seed and Glory of the Snow, in trade packets, 2*s.* 6*d.* and 5*s.* each.—WM. BAYLOR HARTLAND, Old-established Seed Warehouse, 24, Patrick Street, Cork.

*** Trade offer for his "Soleil d'Or" Sunflower, and immediate orders for spring delivery in strong Stuff. The character of this plant is now fully established. See Advertisement in "H. A." next *week*. *A box of specimen blooms for six stamps.*

"GEMS"—"GEMS"—"GEMS" of Choice Stove Plants.

OXERA PULCHELLA—dense clusters, 8 to 10 inches across, of pure white, funnel-shaped flowers, about 2 inches long and 1 inch across. Flowers in winter very lasting, graceful and beautiful. 5*s.*

SCHUBERTIA GRANDIFLORA—flowers white with delightful, almond-like fragrance, produced in large trusses, similar to Stephanotis. Excellent for cutting. 2*s.* 6*d.* and 3*s.* 6*d.*

STEPHANOTIS FLORIBUNDA—the finest variety in cultivation, and freest bloomer, flowering at every joint, and blooms in a lower temperature than any other variety we know. 1*s.*, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*; and fine specimens, 21*s.*, 31*s.* 6*d.*, and 40*s.* each.

STIGMAPHYLLUM CILIATUM (Golden Vine)—flowers rich orange, similar to the lovely Orchid Oncidium flexuosum. Very distinct. 2*s.* 6*d.* each.

TOXICOPHLÆA SPECTABILIS (Winter Sweet)—large dense sprays of white flowers, sweetly perfumed. Beautiful winter-flowering plant. 2*s.* 6*d.* and 3*s.* 6*d.* each.

GLONERA JASMINIFLORA—one of the most beautiful white-flowering plants for either cutting or decoration. Blooms in the winter or early spring, and worthy of a place in the most select collection. 2*s.* 6*d.* and 3*s.* 6*d.*

CATALOGUES of these, and all you want for a Garden free, by post from

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

PANSIES!—PANSIES! From my unrivalled stock of Gems, which can be had from 4*s.*, 6*s.*, 9*s.*, and 12*s.* per dozen plants. Cuttings half the price. NOTE.—The varieties I shall send are such as I have gained several Gold and Silver Medals throughout the United Kingdom, and also secured the 1st prize for the best twenty-four blooms at Glasgow Autumn Show, September 4, 1889. Pansy Cuttings in finest colours for bedding, 24 for 2*s.*; 24 rooted plants, 4*s.* This season's Seed, 1*s.* and 2*s.* 6*d.* per packet. My Treatise on the Pansy, 7*d.*; cloth, 1*s.* 1*d.*

ALEX. LISTER, Pansy Specialist, Rothesay.

SUTTON'S NAMED HYACINTHS,

From 3s. per dozen.

"I think your Hyacinths beat all others."
Mrs. Stericker, *Danby House.*

SUTTON'S BULBS
GENUINE ONLY DIRECT FROM READING.

All Bulbs Carriage Free
(except Orders under 5s. value).

FRUIT TREES—FRUIT TREES.

HUGH LOW & CO.
Offer of good quality, and will esteem favour of Orders:—
APPLES.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Standards.
CHERRIES.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.
PEARS.—Dwarf Maidens, Dwarf Trained, Pyramids, Standards.
PLUMS.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards.
DAMSONS FARLEIGH PROLIFIC.—Dwarf Maidens, Pyramids, Standards.
PEACHES and NECTARINES.—Dwarf Maidens, Dwarf Trained, Standards, Standard Trained.
Quantity Large.—Quality Good.—Prices Moderate.
Inspection Invited.
Bush Hill Park Nursery, Enfield.

CANT'S NEW ROSE CATALOGUE.

The Best and Most Reliable Descriptive List ever published.
Post-free on application to
BENJAMIN R. CANT, Colchester.

NICE, CLEAN, HEALTHY,
GARDENIA PLANTS,
for Winter Flowering,
in 32-pots, 12s. per dozen, packing free.
CASH WITH ORDER.

MARSHALL BROS. & CO.,
BARNHAM, BOGNOR.

JARMAN'S
BULBS,
ROSES,
FRUIT TREES, &c.
Illustrated Catalogue post-free on application.
JARMAN & CO.,
CHARD, SOMERSETSHIRE.

ISAAC DAVIES & SON'S
NEW CATALOGUE of GENERAL NURSERY STOCK
Is now ready, and will be forwarded gratis on application.
Their HARDY RHODODENDRONS are unusually fine bushy plants, covered with flower-buds. The SWEET-SCENTED RHODODENDRONS, and other Greenhouse varieties, are also well-budded. The AZALEA MOLLIS, and other choice kinds, are a mass of flower-buds. Early orders are respectfully solicited.
ORMSKIRK, LANCASHIRE.

DUTCH AND ALL OTHER **FLOWERING BULBS**
HYACINTHS, TULIPS, CROCUSES, SNOWDROPS, NARCISSI, LILLIES, &c.
IN GREAT VARIETY.
☞ *Best Qualities only.* ☞ *Prices most moderate.*
Descriptive Priced Catalogue (No. 362)
POST FREE ON APPLICATION.
DICKSONS (Limited), **The Royal Nurseries and Seed Establishments Chester.**

HARTLAND'S GOLDEN QUILLED DOUBLE PERENNIAL SUNFLOWER.—Now is the time to ask for a sixpenny box of Specimen Blooms, to prevent any hitherto implied imposition, and get orders booked for November delivery. Within the entire range of hardy perennials. There is nothing finer. Its colour and floret-formation in appearance like an immense bloom of Madame Domage Chrysanthemum, or the very finest form of orange African Marigold. Quite distinct.
Plants at fall, 1s. 6d. each, with 3d. extra to cover postage.
W. BAYLOR HARTLAND, Seedsman, Cork.

DUTCH BULBS.

HYACINTHS, TULIPS, CROCUSES, SPIRÆA, LILY OF THE VALLEY—all *strong* clumps, and GLADIOLUS Brenchleyensis and Gandavensis, first size bulbs—all very low prices.

Apply to P. van TIL Jz. & CO., Florists,
HILLEGOM, near HAARLEM, HOLLAND.

ROSES IN POTS;

all the best New and Old English and Foreign sorts, from 18s. to 36s. per dozen.
Descriptive LIST Free on application.

RICHARD SMITH & CO.,
Nurserymen and Seed Merchants,
WORCESTER.

FRUIT TREES. IMMENSE STOCK of remarkably well-grown Trees. Inspection invited. New descriptive CATALOGUE on application.

DICKSONS THE NURSERIES, **CHESTER.** (LIMITED).

JERSEY FRUIT TREES AND ROSES.

Carriage Paid. Strong healthy trees, the finest that money can buy. Roses wonderfully cheap. Cordons a spécialité. Before ordering be sure to write for our Illustrated CATALOGUES.
JOSHUA LE CORNU AND SON, High View Nurseries.

DUTCH BULBS CHEAP!
FRENCH BULBS CHEAP!
ENGLISH BULBS CHEAP!
See our Special Wholesale Catalogue of Bulbs,
Containing List of all the best varieties of HYACINTHS, TULIPS, CROCUS, LILIUMS, DAFFODILS, SNOWDROPS, IRIS, &c., &c., free on application.
Please compare our Prices before sending your Orders abroad.

WATKINS & SIMPSON,
SEED AND BULB MERCHANTS,
EXETER STREET, STRAND, LONDON, W.C.

STRAWBERRIES.

Strong Roots, 4s. per 100. Plants in small pots, 16s. per 100; ditto, in large pots, 25s. per 100. Descriptive LIST free.
RICHARD SMITH AND CO., Nurserymen and Seed Merchants, Worcester.



For Market and Private Growers.
ORNAMENTAL TREES, SHRUBS, ETC.
Descriptive CATALOGUES Post-free.
J. CHEAL & SONS Crawley, Sussex.



STRAWBERRY PLANTS.

We have a grand stock of Strawberry Plants now ready, including all the choicest varieties, which we offer in strong prepared runners, Carriage Free.

	Per 100. s.	d.
LAXTON'S NOBLE, the superb new early, the best variety yet sent out ... per doz., 3s.	20	0
A. F. BARRON, splendid new mid-season variety ... ... per doz., 5s.	30	0
COMMANDER, very fine, new sort, of splendid flavour ... ... per doz., 5s.	30	0
WATERLOO, superb dark crimson ... per doz., 1s.	7	6
THE CAPTAIN, fine new prolific .... per doz., 1s.	6	0

The following at 9d. per doz., or 5s. per 100:—
AUGUSTE NICAISE, PRESIDENT, BRITISH QUEEN, LOXFORD HALL SEEDLING, DR. HOGG, THE AMATEUR, JAMES VEITCH, FROGMORE LATE PINE, and many others.
100 in 10 choice varieties, our selection, 5s. 6d.
1000 in 10 ,, ,, ,, ,, 35s.

LILIUM HARRISSI (the Bermuda Easter Lily). Long pure white deliciously scented trumpet flowers, superb variety for forcing. Potted now may be had in bloom at Christmas and the new year.
Fine selected bulbs, per doz., 7s. 6d.; per 100, 56s.
Extra fine bulbs, 7 to 9 inches in circumference, per doz., 10s. 6d.; per 100, 80s.
Our CATALOGUE of Dutch Flower Roots, Roses, Fruit Trees, &c., is now ready, and may be had free on application.

DANIELS BROS.,
TOWN CLOSE NURSERIES,
NORWICH.

VINES.

"LE FRUITIER."—The Celebrated Vine Manure for producing in excellence, size, colour, and flavour.

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The only Fertiliser sold under Dr. Voelcker & Son's Guaranteed Analysis—showing 100 parts.
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 5, 1889.

HALTON.

IF an inquiring traveller were in search of a good specimen of a small English country town in an agricultural district, we do not know that he could do better than pay a visit to Tring. Scarcely more than an hour's distance from London, it is as rural as if it were an indefinite distance "down in the shires." The contrast, too, between the green—monotonously green—clay-lands of Middlesex, through which the traveller passes, suggestive of little but hay, and the rich calcareous soil of the Chiltern Hundreds, with their bold undulations, fertile valleys, and rich diversity of woodland and arable, affords a change as remarkable as anything of the kind that can be seen within so short a distance from the Metropolis. Through this scenery, and through the little town we have mentioned, lies the road to Halton, the palatial seat of Alfred de Rothschild, Esq. Where the main entrance to this fine domain may be, we do not profess to know. Our conductor, for purposes of his own, which will presently be made apparent, led us up through woods and plantations, gradually ascending, till at last botanical instincts could bear the confinement of the carriage no longer, for was not Gentiana germanica in full bloom there, growing in company with the humbler G. Amarella, and forming a plant amply handsome enough for the rockery if it could be induced to grow on one? For our first knowledge of this plant we were indebted to our friend, the late Rev. H. Harpur-Crewe, who first made the plant known as an English resident. Since his time it has been found elsewhere, but it is not common anywhere. Chlora and Erythrea, Eyebright, and Wild Thyme, and a score of characteristic chalk plants, were there to charm the present, and recall pleasant memories of past rambles over Kentish hills and Sussex downs. A brown eccentric plant was at first

glance mistaken for an Orobanche, but turned out to be the Bird's-nest (Monotropa). A similarity of appearance is consequent on a similarity of habit, and a Heath may mask in the guise of a Scrophularia till the touch of the dissecting-needle reveals the truth. Both are idle rascals, stealing their food from other plants, and not only stealing it—Mistleto does that—but not even taking the trouble to prepare it, elaborate it, as the botanists would say. No healthy green leaves adorn these plants, but only brown scales, incapable of doing any "elaboration," if it were needful. The theory is, that these "Broomrapes" and "Birds'-nests" were once respectable members of the Scrophularia and the Heath families respectively, and earned their own sustenance, as other straightforward plants do; but somehow, somewhen, they tasted the illicit joys of feeding upon ready-made and ready-cooked provisions, and declined to work any longer. Their leaves became then no longer of any use to them, so they gradually disappeared, till now the stigma and brand of parasitism is too deeply ingrained on them to be mistaken, and their brown scales indubitably mark them as the cads and loafers of the vegetable world, willing to feed at some one's else expense, but not at all inclined to work for their own living. For all that, the botanist has some thing more than a "sneaking sympathy" for these interesting members of society—for interesting they most decidedly are. They furnish an excellent illustration of "degradation"—the antithesis of evolution and progressive advancement. Of course, some people might argue that these plants were struggling to rise, indebted for the nonce to the friendly help of other plants, but by-and-by destined to gradually achieve their emancipation, develop leaves in due course, and become self-dependent. It may be so, but the other guess fits the facts best, and is therefore the more probable.

Before, however, we had time to discuss these weighty matters with our conductor, we had emerged from the Beech woods, and found ourselves almost suddenly on a lofty plateau, and now it became apparent why we had been led slowly through those woods. Those woods, delightful and interesting as they were, certainly were not on the direct way to the house, but they were designed, on this occasion at least, to act as blinkers do to a horse; in other words, to prevent the eye from wandering in this direction or in that till the right time should come, and when the right time did come on that breezy plateau, what a prospect was unfolded! Right and left, close at hand, rich Beech-clad lines of hills; opposite, but far away, other wood-clad ranges, between a vast plain mottled with golden Corn and intervening hedges, dotted with trees and church towers, thin films of blue smoke from the cottages, or trails of white steam from a distant train. In the centre of the plateau is a châlet, simple and unpretentious externally, but fitted up with a sumptuous luxury within which one does not generally find even in the best appointed Swiss châlets. It might be thought that the prospect alone was worth the climb, and that nothing but a rest and be thankful kind of shelter was needed in so glorious a situation. But tastes differ, and weather is not always propitious, even on the Chilterns. Under such circumstances, the varied allurements of the châlet and its *dépendance*, in the shape of a glass-covered corridor serving as a bowling alley, are no doubt duly appreciated. But on the occasion of our visit the breezy atmosphere, the clear sky, the noble prospect, the curiosity to see more, were sufficient inducements to break away even from such luxuries.

Going to the edge of the plateau and looking down, one is reminded of an alpine pass—green slopes become visible, dotted with Juniper and Furze, and fragrant with wild Thyme, shrubs and Austrian Pines creep gradually up the hill side, bold sweeps trend now in this direction, then in that. In one bend is a second châlet of smaller size, to add to the resemblance to a Swiss mountain pasture, and low down near the base of the hill is the mansion, with its *tourelles* and its porch, its centre and its wings, in the style of a French château. The domed winter garden glistened in the sun, behind it bright patches of colour revealed the flower garden, its bounding shrubberies gradually melting into the middle distance.

After staying a few moments to breathe the delicious air, and take in the main features of the prospect, we commenced the descent of the pastures of the Simplon—we mean of the Chilterns—appreciated the easy slopes, and admired the way in which the roadways have been so engineered that while ready passage is afforded for a horseman, or even for a carriage, from the base to the summit, there are no ugly scores and gashes in the turf, but green rides, indistinguishable from below from the rest of the hill-side. Great art must have been exercised to produce such a result, for nought but great skill could so effectually have concealed the art.

Lower down we come to plantations and shrubberies where the very prodigality of planting has been exercised by Messrs. Veitch to whom the construction of the garden and plantations has been entrusted. The shrubs and trees are planted thickly partly for protection's sake, and at the express wish of Mr. de Rochschild The subjects selected are those which have been found to thrive on the chalk—Austrian Pines, Abies Pinsapo, Pinuscembra, Yews in variety, Lawson's Cypress, Retinosporas, Junipers, Boxes, Berberis, Veronic a Traversi, Laurels, Garryas, Escallonias, relieved by white Poplars and Negundo, purple Nuts, and Golden Elder — and we know not what beside. Near the entrance front of the mansion are shrub beds filled with golden Yews, with Aucubas, with Hypericums, with Mahonias, with the golden Diplopappus. Here and there great beds have been formed for the benefit of those plants which evince a distaste to lime, but all so densely planted that mother earth shall be fully draped, and not a speck be left uncovered.

Passing round to the garden-front of the house, we find ourselves on a terrace-walk, but here again the skill of the landscape architect has been called into play, for in spite of the changes of level, no steps are to be seen. Indeed everything is so planned and arranged that the proprietor can drive, not only from end to end, but in every direction of his grounds, and from the base of the hill to the plateau on the summit. The lawn slopes gently away from the house, its green carpet diversified by numerous beds of large size. These are filled not only with the usual occupants, amongst which tuberous Begonias are well to the front, but others are devoted, as it were, to experimental purposes, wherein varieties such as Begonia castaneifolia alba, B. Carrierei, B. Sedeni—now not easy to obtain—and many others are put upon their trial, to be discarded, or to be employed in greater profusion next year according to circumstances.

In addition to beds of the ordinary character, there are several others of a fanciful nature, which give pleasure, and afford variety, but which a landscape-gardener would hardly hold up as models for imitation elsewhere, such are a cushion-bed planted to represent a huge ottoman with cords and tassels, two large vases covered with succulents and other plants, just as a Dresden China vase may sometimes be seen studded with shells. The profusion of the plants employed, their harmonious colouring, and the order and neatness in which they are kept, betoken no little skill in selection, no little labour and attention in maintenance. The plants employed to form the vase are Echeveria Peacocki, a pretty grey rosette-like species; Pachyphytum Hookeri, various Sedums, Herniaria glabra, Mentha pulegium gibraltarica, Sempervivum tabulæforme, and as a termination at the top, a plant of the variegated American Agave. The bed in which the vase stands is prettily filled with a variety of carpet-bed plants.

Another bed is planted to represent a large basket, (see fig. 55, p. 383), the idea seems to be that a basket full of flowers has been placed on the lawn, and that in the case of the lower part of the basket, many of the plants have taken root and thrust themselves between the interstices of the wicker-work. These consist of Echeveria metallica glauca, E. Scheerii, Sempervivum tabulæforme, Golden Pyrethrum, and, on the sides, Alternantheras—all planted in upright lines, with a view to a contrast of colour, and sufficiently far apart not to hide the wicker-work of the basket itself. The top of the basket is filled with a mixed bouquet of white Marguerites, Cannas, and Chrysanthemum carinatum.

The so-called German beds are mixed beds, full of Cannas, red and yellow-flowered; Abutilons, Eucalyptus, scarlet Begonia tuberosa, B. castanæfolia alba, Nicotianas, Chamæpence cassabonæ, Perilla, a pretty flowered Fuchsia named Try me-o! the whole carpeted with various dwarf bedding plants, the object being to completely hide the soil.

(To be continued.)

New or Noteworthy Plants.

LÆLIO-CATTLEYA × AURORA, *n. hyb.*

This is the latest of Mr. Seden's successes, and there can be no doubt that it is an exceedingly beautiful hybrid, as its form and colour are exquisite, and the flower is of great substance. It was obtained by crossing Lælia pumila Dayana with the pollen of Cattleya Loddigesii, the seed having been sown in 1882. A two-flowered raceme has just reached me from Middle Green Farm, Langley, Slough, whither the Messrs. Veitch have removed their seedling Orchids—out of the range of the London fogs, let us hope. The plant is dwarf, as the five pseudobulbs which it at present possesses are said to range from 1 to 5 inches long. Thus it takes the character of the mother plant. Some of these pseudobulbs are one-leaved, also like the mother, while others have two, like the pollen-parent. The raceme is two-flowered, and this character again comes from the Cattleya, for Lælia pumila produces solitary flowers. But in shape and general character of the flower, including the recurved tips of the segments, the influence of the mother plant altogether preponderates, the modified colour and yellow of the disc being the most obvious of the characters derived from the other parent. The segments are of a beautiful light purple-rose; the side-lobes of the lip much infolded, and passing almost imperceptibly into the front one; the throat sulphur-white, with the front of the disc light yellow, and behind this a few rosy nerves extend to base. The front lobe and the apex of the side lobes are deep purple-rose, a little paler in the centre, where also the nerves are more conspicuous. The colours are tolerably intermediate between those of the two parents, and remind me of those found in Cattleya Lawrenceana. The pollinia, as in all hybrids between Cattleya and Lælia, are very unequal. It is a splendid acquisition. *R. A. Rolfe.*

Lissochilus speciosus.

A showy, warm greenhouse species, native of South Africa, and, in common with others of the genus, terrestrial, succeeding well in a compost of light fibrous loam, leaf-mould, and sand, with a good drainage, and plenty of water during growth, giving less as growth matures, until, when completely at rest, water may with advantage be entirely withheld for a short time, but the plants should always be placed where they can get a maximum of light and air. We have grown the species under notice most satisfactorily at the coolest and airiest end of an intermediate-house without much shading. This species has a tolerably large fleshy pseudobulb or root-stock, from which a tuft of about half-a-dozen bright green, arching, narrow, plicate leaves arise. The

flower-scapes, which are produced from the base at the sides of the pseudobulbs, are from 2 to 3 feet long, growing erect, and of course flowering centripetally, usually developing from thirty to forty flowers. The flowers are somewhat anomalous for an Orchid, inasmuch as instead of the large petaloid sepals common to Orchids, here they are small and green; the petals, however, are comparatively large—about an inch long and three-quarters of an inch broad—of a soft but clear yellow colour, bluntly pointed, and ovate-cordate in outline, the venation being very prominent, almost ribbed; the lip is about the same size and colour, only it is slightly marked with minute reddish-brown spots, particularly about the base of the shallow saccate spur, which is somewhat saddle-shaped, and deeply ribbed on the face, notwithstanding that the generic name means smooth lip. The small, nearly round column stands up prominently in the centre of the flower. The flowers are borne on pedicels rather over an inch long. The subject of this note was in flower in July, and has still over a dozen flowers. *F. R.*

MARKET GARDEN NOTES.

Although the market growers around the great metropolis have had not at all a bad time, yet they have been far from finding salvation. The later portion of the season has not equalled the promise of the summer, and lamentations now are heard over the very poor prices prevalent. We seem to be living amidst a regular glut of vegetables, or else ordinary consumers, of whom there are several millions in London and its vicinity, have become vegetable surfeited. To assume that the Dockers' strike affected prices appreciably would be too absurd, because, whilst the produce of the open ground rules so low, fruit has been selling well, prices having been satisfactory; that result is due to the fact, however, that the crop is of moderate bulk, and is fast being utilised. We have of late been having some severely trying weather for Apples and Pears, almost the only hardy fruits found in the orchards and gardens. Glorious as the unusual warmth and drought have been to lovers of pleasure, they have told with considerable effect upon the tree fruits, and with early defoliation there has been also material falling of the fruits, a considerable percentage apparently being pierced by insects, or attacked by maggots. Not only is there a large percentage of rot-windfalls, and of heatfalls, but fruits which seemed sound enough when gathered, have been found two or three days later half decayed.

It is not a matter for wonder if those favoured with Apples and Pears should be found gathering and running them into market as rapidly as possible, so as to secure some return whilst the fruits are apparently sound. Pears not being of any considerable consequence for winter sale, a dearth of the fruits may be looked for, unless favoured with ample supplies from America. Those who so enthusiastically urge the wider cultivation of hardy fruits in this country should remember that were our growers but favoured with ordinary good crops, proportioned to the breadths of trees under cultivation, there would be no lack of quantity for the million, and prices would bring the produce within the reach of all. It is not so much wider fruit areas as favourable seasons which we need. Anyhow, the present autumn has favoured beyond almost all precedent the development of stout well matured fruit-buds and spurs, and so far the foundation is being laid for what may prove next year to be the finest fruit crop of the decade.

In reference to vegetables, the recent heat, to some extent, checked the rapid and almost unwonted growth found in all forms of the Brassica family, and made aphis plentiful. The Brussels Sprouts breadths are this season wonderful for evenness and robustness. A huge breadth of some 20 acres near here is so good that a defective plant cannot be seen over the entire field. Autumn Giant Cauliflowers are early, plentiful, and fine. Coleworts are early, also, and will be none the worse later for the recent check. Cabbages of all kinds are very abundant and strong. A night's rain, with cooler temperature, will soon make all this vast area of green stuffs look as vigorous as ever, and then we shall find such a glut in the market, that the returns will not repay cost of culture and marketing. A big crop of anything always seems to be a misfortune for the growers, although the public should reap the benefit. Potatos, in spite of some disease, are so good and plentiful, that myriads of tons have sold at £3, or 1*s.* 6*d.* per bushel. Just now that is thought to be a very good price, but with land and labour at their present rate, it is impossible, with ever so good a crop, that any profit can result. There is no prospect whatever that Potatos will be dearer this side of Christmas, and probably not then. Runner Beans, a very popular vegetable, nevertheless, seem to be so plentiful, that they can hardly be sold at any price. The heat has somewhat discoloured the pods, and affected prices, so that the returns are absurdly out of all comparison with the cost of growth, gathering, and marketing.

Vegetable Marrows are popular vegetables also, and sent to market in enormous quantities. These have now become a drug; indeed, very fine fruits—and they have been unusually fine this year—now returning 4*d.*, 6*d.*, and 8*d.* per dozen, the latter esteemed a good price. Marrows pay very well early in the summer, but towards the autumn the public taste seems to be satiated with vegetables; or novelties are looked for in other directions. When Cauliflowers are plentiful and very cheap, Marrows have a poor chance of profitable sale.

Spinach and white Turnips, favourite succession winter crops, look very well, but need rain, as also is a heavy downpour needed to cleanse all the Brassica family from aphis. That all kinds of hardy vegetables will be very plentiful, and consequently cheap, this coming winter, seems to be certain. The vocation of market vegetable growing is a heavy and laborious one, gives employment to myriads of workers, yet, on the whole, yields very indifferent returns to the grower. *A. D.*

THE ORIGIN OF CULTIVATED PLANTS.

Most of the late travellers in the Khanates of Central Asia agree (contrary to the general notion) in saying that the fruit of the silk Mulberry plays an important part in the diet of the natives, either fresh or dried. For my own part, I found it sometimes in Asia Minor a delicious fruit, smaller (it is true) than that of the black Mulberry, but quite as juicy and much sweeter; but as there they are grown for the leaves, the plants are not selected on account of the fruits, and there is as much difference in the fruit of two neighbouring trees as between a crab Apple and a Newtown Pippin. But is Morus alba properly named? For more than half a century I have had a black and rose fruited variety of it, and in the Island of Yesso (Japan) I found wild a black fruited Mulberry which looked very much like the wild ancestor of it. My doubts are confirmed by the fact that it came over to Europe as a plant already cultivated for centuries, and I could quote several instances of (in my opinion) similar mistakes.

Anemone japonica.—I never saw this wild, but we know that R. Fortune brought it from Chinese gardens, and it was not long before it returned to what I consider the typical Anemone japonica elegans. My reasons for supposing this are, that the older variety is much weaker, the flowers have a tendency to duplication, and their petals are very irregular in shape, number and size, while A. j. elegans and Honorine Joubert are much larger plants, stronger growers, with regular flowers, and perfectly similar in both varieties.

Spiræa palmata has just the same history. The pink variety is a garden form, which returned to a larger, coarser, paler type as soon as we tried to propagate it by seedlings, and here I can add that I saw millions of the white Meadowsweet in Japan, but never met the pink one except in gardens.

Chænomeles (*Pyrus*) *japonica* was also brought over from gardens in China. I have made extensive and sometimes well-rewarded sowings of it. Not two of its offspring are alike, either in colour of the flowers, shape and size of the leaves, habit, prickliness, &c. A larger proportion of them incline to P. Maulei (Masters), which I take to be the type, as I found it undoubtedly wild in Japan, but the P. japonica never.

The Single Camellia, we take for the type, has also been deeply modified by culture, so that in our own seedlings it never reverts at once to the original wild Camellia, with flowers scarcely more expanded than those of Lapageria rosea. *J. van V., Brussels.*

ORCHID NOTES AND GLEANINGS.

DENDROBIUM LINEALE, *Rolfe, n. sp.*

Once more I have had to hunt up the New Guinea Dendrobiums, and again without success, as the present one is different from anything I can find described. It has just flowered with Messrs. James Veitch & Sons, Chelsea, and was imported from Eastern New Guinea, probably from the neighbourhood of the Owen Stanley range of mountains. It belongs to the Stachyobium group, and bears a considerable resemblance to D. canaliculatum in many of its characters, though a larger plant altogether, and otherwise different. It is a very pretty, if not a grand species. The name lineale (consisting of lines), is given in allusion to the numerous lines on the lip. The pseudobulbs are about 2 feet high, swollen to an inch thick near the base, but elsewhere much more slender, especially above the middle, where are situated from five to eight racemes, though whether these are developed simultaneously I cannot say, for the basal portions alone remain to show what has been before the plants were imported. One fine raceme, however, has developed at home over a foot long, and bearing twenty-two flowers, the segments pure white, and the lip beautifully marked with purple, on a light ground. Bracts lanceolate-linear, one-third of a inch long. Sepals linear-oblong, obtuse, 6—7 lines long. Petals narrowly subspathulate-linear, obtuse, three-quarters of an inch long. Lip three-lobed; front lobe elliptical-oblong, obtuse, undulate; side-lobes broadly rounded, obtuse; colour palest green, the front lobe and margins of the side-lobes purple, the fleshy disc with longitudinal purple lines, and the side-lobes with numerous radiating ones of the same colour. There are three raised calli on the disc, which terminate abruptly about the centre of the front lobe in three short, elevated plates, the central one being the largest. The chin is three-eights of an inch long, narrowed towards apex. The column is short, obtuse, and with acute angles, light purple on the face, and the anther-case yellow. A young growth bore a few leaves, far too young to describe satisfactorily, but ranging from elliptical to oblong and obtuse. *R. A. Rolfe.*

Cattleya Dowiana.

We sometimes hear of varieties of C. labiata spoken of as the "true autumn flowering variety." However far this statement may hold good when strictly applied to the type forms, and on that account give them increased value in the opinion of orchidists, I think there can be no doubt that C. Dowiana is one of the most beautiful and the truest autumn flowerer in the great labiata section, and now that its cultivation is well understood generally, it should be as common as C. Mossiæ. Of course C. Dowiana requires more heat than C. Mossiæ does, but as it seems to be always more or less on the move, protracted periods of rest (drier treatment) are not beneficial, if they are not actually injurious. Of this I have been more fully convinced during the past year in the behaviour of a small specimen in a basket. Last autumn this plant had one flowering head which in due time bore three flowers, at which time two fresh growths were made,

which subsequently produced two more, and three out of the four growths are now flowering—the last two having four flowers each—the one which had flowered of the first two growths produced, having only three flowers. All the flowers are of good size, and fully developed, as also the pseudobulbs, which have plump, prominent eyes, and are all again showing signs of starting, thus indicating that the vigour of the plant is not impaired by its continuous growth; indeed, we have noticed that plants subjected to a severe course of resting, start weakly, and the young growth is liable to damp off, and possibly in such cases the plan recommended by some growers, of slitting open the outer sheath, might be useful, but I think such an artificial process should not be employed by any good cultivator, excepting in cases of emergency, as the necessity for it is a sign of something amiss in the culture of the plant. I may mention that the plant under notice has been grown in a basket suspended close to the glass, in a low-roofed, moist, and rather warm, intermediate-house. Gorgeous as Cattleyas are, there is a richness about the colouring of Dowiana which is not met with in others; the fawn or nankeen-coloured sepals and petals contrast finely with the rich velvety purple lip which is itself beautifully streaked with golden lines, and shaded with violet-rose; the petals are also slightly marked with purple. The petals are twice as large as the sepals and are, as well as the labellum, finely crisped at the margin. The plant is a native of Costa Rica, and although discovered in 1864, it was not till a year or two later that it was successfully introduced by Messrs. J. Veitch & Sons, Chelsea. Since its introduction, several varieties have appeared, but that known as C. D. aurea, is probably the best, and an advance on the type. *F. R.*

Cattleya Loddigesii.

This grand old Brazilian Orchid is in bloom at present at Trevince, one of the pseudobulbs 15 inches long, bearing a spike of nine superb flowers, and two others are carrying five and six respectively.

I allude to the above fact because Mr. B. S. Williams states in his *Orchid Growers Manual*, that three to four flowers on a spike are the usual number; my plant is not a large one, and occupies a 10-inch pot, still it will be quite obvious from the strength of the pseudo bulb that the plant is in vigorous health, and if treated well, it will eventually make a fine specimen. *S. Grose, Trevince, Cornwall.*

Odontoglossum crispum.

It is often remarked that beginners in Orchid culture get more than their share of grand varieties among their purchases of imported plants, and well it is that it should be so, for out of their ranks must the large collections be recruited, the small establishment soon growing to a large one when the plants are well cultivated and fine new forms appear. Among the well-grown plants which F. G. Arbuthnot, Esq., has lately got together at Bridgend Place, Bexley, one of these prizes is now in bloom, a noble, broad-petalled form of Odontoglossum crispum with snow-white sepals and petals, the two lower sepals, each having a reddish-brown spot, and the large labellum decorated with irregular oblong blotches, just within and following the margin, a large crimson blotch being in the centre, and bright yellow at the base of the lip; there are also some red lines about the column. Altogether it is a very distinct and beautiful variety.

Cypripedium Ashburtoniæ ×.

This hybrid is evidently a plant of considerable variability. During the time that I have been collecting material for a monograph of the genus Cypripedium, and making drawings of the various forms, I have had several specimens of C. Ashburtoniæ through my hands, and I find a very great amount of variation in the floral details, whilst the general appearance of all the forms is very similar, so that the differences do not attract the attention very readily. The upper sepal is sometimes flattish, but usually with recurved margins in the upper part, and the nerves vary from nineteen to twenty-five in number; they are sometimes spotted only to about half-way up, sometimes for three-fourths of their length. The petals are sometimes spotted both above and below the midline, sometimes only below the midline, and sometimes there are no spots at all! The lip sometimes has the auricles rather widely spreading, and sometimes but very little wider than the rest of the lip. Finally, the notch in front of the staminode varies very much in depth.

A few days since Mr. A. Gorton, of Maida Vale, brought to Kew a specimen of C. Ashburtoniæ from an unusually vigorous plant; the leaves measured from 12 to 14 inches in length, but did not differ in coloration from the ordinary state of the plant. The peduncle was two-flowered, both flowers being open at the same time; they were quite typical, except that the upper sepal and the petals were a little more freely spotted than is usually the case. If the vigour of the plant is due to culture only, these features will probably change, but if it is an individual characteristic, it will be a plant worth possessing. *N. E. Brown, Kew.*

Orchids in Flower at Mr. Bull's.

Among Orchids in flower at Mr. Bull's are Cypripedium Spicerianum, Catasetum callosum, a dull-coloured species, but one of much interest; Vanda cœrulea, in several shades of colour; Catasetum Bungerothi, Peristeria elata, Odontoglossum splendens, grande, Krameri, Oncidium bicallosum, O. tigrinum, Habenaria militaris, with its scarlet lip, Angræcum Chailluanum and Scottianum, Aërides Lawrencianum, and many others, showing even at this comparatively dull season that the Orchid-grower has much to charm him. The famous Lælias in this establishment are thriving vigorously, strict cleanliness and watchfulness, combined with a relatively low temperature, forming the principal features in their cultivation.

CABBAGE TRIALS AT MESSRS. J. VEITCH AND SONS'.

The collection grown on trial at the Turnham Green nursery of the above firm consists of sixty-nine varieties; and as the season has been favourable for development, and the varieties were planted together as nearly as possible, according to their earliness, it has been a work of interest to note the progress made from time to time.

One fact which came out in a striking manner at the trial was the great stride which has been made in early Cabbages by the introduction of some French varieties which are earlier than our own Little Pixie—larger in size, and of excellent quality. Early Etampes is a very good selection, but Veitch's Extra Early was certainly finer, being a little earlier, with large, solid, rather broadly conical-shaped hearts; this variety formed a compact level lot of plants. Early York rapidly succeeds the above, and is too well known to need comment. Large York is considerably later, and, having a tall stalk, it has not a nice appearance, and is not such a fine sort as the Enfield type. Little Pixie is an excellent little Cabbage, very early, with solid, compact, little roundish hearts; a capital variety for small gardens, and for winter planting as Collards. Atkins' Matchless is distinct, but it is much in the way of Nonpareil, and not earlier.

Ellam's Dwarf Early, spring sown, does not show its true character, or come in early, but is rather rough, and is a little too leafy; whereas sown in autumn it comes into cutting very early, and has very few loose outside leaves. Nonpareil is still one of the best sorts, several stocks were growing here, such as Heartwell, Cocoa Nut, and Dwarf Barnes; but a good selection is all that can be desired for a garden variety. It is early, with conical-shaped solid hearts of excellent quality. Wheeler's Imperial is of the Nonpareil stock, only somewhat larger, and a trifle later. Hill's Incomparable is a very fair main crop variety.

Of the Enfield market type, we now have a large number of selections or varieties, that vary but a little from it, such as Battersea, Reading Defiance, Offenham, Early Market, Stuart & Mein's No. 1, &c., showing once more how a good stock of Enfield is still the best large main crop variety for garden or market use.

Denning's Early is a distinct low growing sort, but of no use when sown in the spring. Winnigstadt is an excellent variety to stand heat, and comes into use after Enfield Market. St. John's Day is a nice little Drumhead, and does not get large and coarse like the ordinary Drumhead, and is also tolerably early. Roseth Colewort is a very fine selection here, and was sown again in June, and will shortly come into use. Sugar-loaf, of very distinct upright appearance, has almost gone out of cultivation. Drumheads, of which there are about six different stocks here, remind one more of Cattle Cabbages than of anything else; but one of them—a dwarf form—is the best for garden use in cold districts. *X.*

NURSERY NOTES.

MESSRS. JOHN WATERER & SON.

Alighting at Bagshot station, the visitor at once recognises that he is in a land of Conifers. He has had indeed more than a slight indication of this fact as the train has rushed through plantations of Scots Firs, with which the heaths are now plentifully covered; but these are only the rank and file. On Bagshot platform the officers are arranged in parade dress—some all gorgeous in golden yellow, some gleaming with silver, others in rich hues of green; in fact, Retinosporas of various kinds, Junipers, and Lawson's Cypresses of the most attractive kinds. "Waterer's nursery?" "Turn to the left after you get out of the station-yard, and go straight through the village—you cannot miss it—ten minutes' walk," and it is quite true, that no one save a blind man could miss it. The village itself, one of those quiet pictural, placid places, whose existence the Cockney, immured in his office, is apt to forget the existence of. It has even fountains and lamps in its streets, and a fine new "Institute;" and it is, in appearance at least, altogether a charming place. But this is not the object of our visit. We have come to-day to see the Rhododendrons at home—to see the preparations for next year. At the end of August one cannot expect to see them in bloom; but it is almost, if not quite, as interesting to the plant-lover to see them in the various phases of their family life as to witness them when in full dress. Well, here they are in their tens and scores of thousands; seedlings in the seed-beds beyond computation; newly-grafted plants under glass in numbers that cannot be mentioned without fear of exaggeration (grafted low down, so that the graft is covered when planted); others, whose early troubles are over, turned out to shift for themselves in the quarters, and to all appearance, shifting for themselves in the most satisfactory manner; others, again, a few months older, covered with bloom-buds; then there are grown-up plants, big fellows, some as standards, others used as stools for layers; others enjoying protection and honour as the parent of kinds of renown. Some of us find it no easy task to discriminate between certain varieties, even when in bloom; but the practised eye of the foreman picks them out from the drifts and quarters wherein the sorts are mixed with as great facility as if they were his own children, as in a sense they are. How one envies this marvellous power of instantly seizing upon differences, and still more marvellous memory; but just as the shepherd has the members of his flock constantly under observation, so the nurseryman has his *protégés* under daily supervision. The difficulty, it would seem, must be enhanced by the constant influx of new faces. It may be interesting, by the way, to mention how the novelties are obtained. The plants it is desired to cross are lifted, placed under cover, and forced, so that they come into bloom in March, and can be artificially crossed before any insects are about to spoil the proceedings. Unfortunately, no record is kept of the sorts used, and the crossing is done somewhat at haphazard; nevertheless, the workmen can tell by the inspection of the offspring, almost by instinct, what kinds have been employed in its production. If such results have been obtained by hap-hazard measures,

what may not be expected if the proceedings were more scientifically undertaken. For us, as visitors, there is not much more to be said about the Rhododendrons at this season. We have already said that their numbers are prodigious, and their condition excellent; we may say the same of the Ghent Azaleas—the same of those of the mollis strain. Let us pass on, and note a few other things which struck us—one was the large quantity of Skimmia Fortunei grown for the sake of its cheerful berries—we hope we may be excused for calling it Skimmia Fortunei, for a multiplicity of names are, in a measure, overcome. Let us pass from these dry questions of nomenclature to one of physiology, and a very interesting one it is. Some few years ago, it will be remembered, a salt spray passed over a considerable tract of country in the south and south-east of England, inflicting much damage on the trees subjected to its influence. It even extended as far inland as Bagshot, and among the trees there affected was a Japanese Maple (Acer palmatum); one side of this tree was exposed to the blast, the other not. Since that time flowers and seed-vessels have been freely produced on the side that was injured, while few or none have been produced on the other side. The difference between two sides is still very obvious. The branches are shorter, the leaves at the time of our visit in August had already assumed a rich autumnal tint, while they were still green on the other side—and, surely enough there were plenty of keys or *samaræ* on the one side, few or none on the other.

The seedlings from this plant are largely used as stocks whereon to graft or bud the Japanese Maples. Of these the number grown in this establishment is very large, the elegance and variety of their form, the delicacy of their colouring, and their perfect hardihood being likely, in Messrs. Waterer's opinion, to make them among the most popular plants of the future. Osmanthus ilicifolius and its variegated forms are also grown here in immense quantities, the plants being reproduced from cuttings. This, together with the Skimmias, and the comparatively new Phyllirea decora (Vilmoriniana) form, as we can testify from experience, three of the very best shrubs for growing in smoky localities.

It was not astonishing to find Hollies of all sorts and sizes here, for the nursery is famous for them, but it was rather a surprise to come across, in one corner of the ground, a fine "drift" of the old,

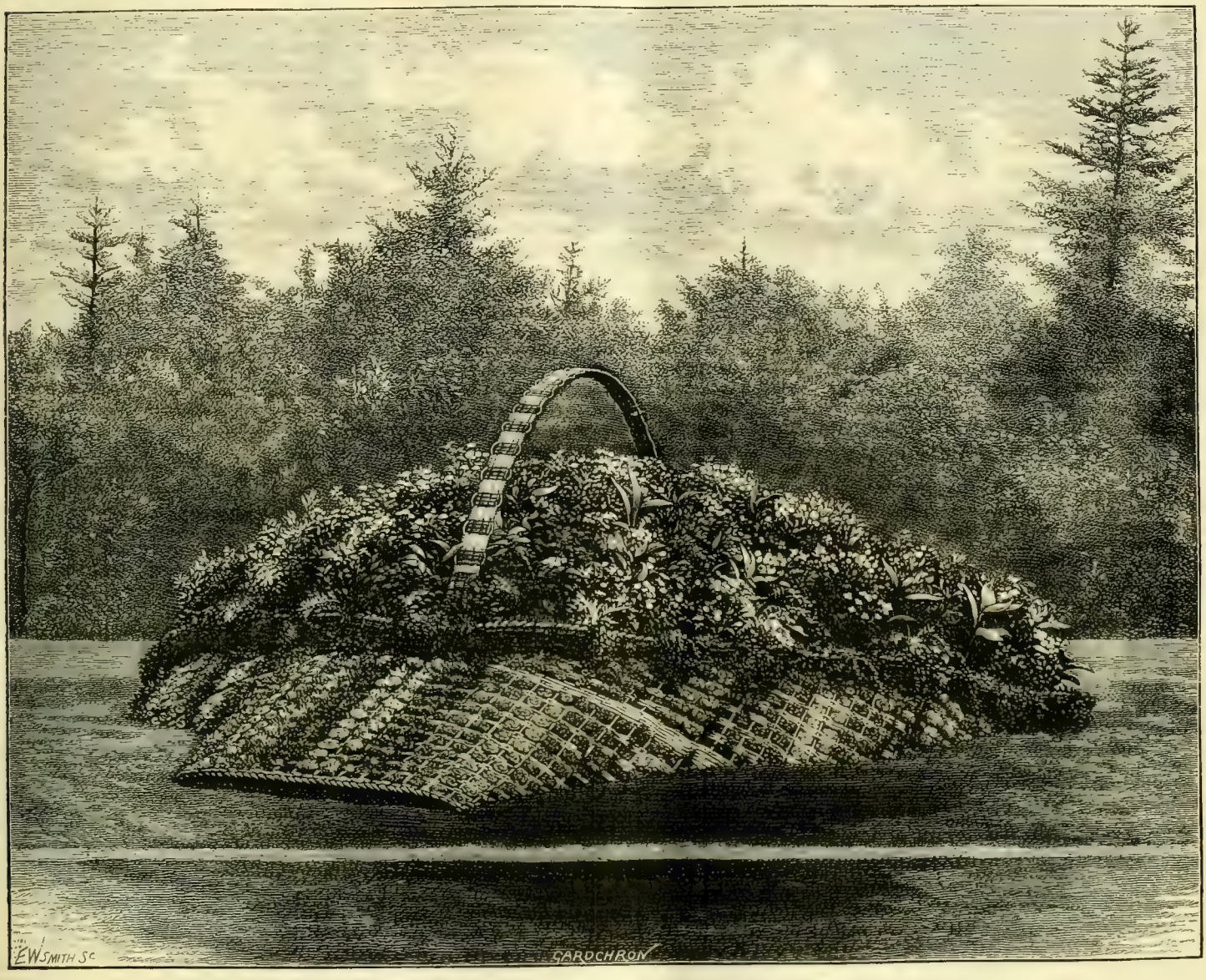


Fig. 55.—The basket bed at Halton. (see p. 380.)

it is decidedly not japonica, as was proven in these columns some time since. But it is one thing for students to endeavour to rectify nomenclature, quite another thing for nurserymen to adopt the revised version. Nor, indeed, is this to be wondered at, the confusion and embarrassment created by changes of name are more serious in commercial than they are in scientific matters. Among botanists, if Jones gives one name, Brown another, and Robinson a third, to what eventually turns out the same plant, the inconvenience, no doubt, is great; but, with a little trouble it is always possible, owing to the system of registration universally employed among botanists, to ascertain precisely what either, or all three of the students just mentioned meant, and so the evils of double white Camellia. The plants are growing as freely as Laurel-Cherries, than which they prove much more hardy. Some 500 were lately despatched to France from this nursery, which seems rather an inversion of the ordinary course of things.

Another plant largely grown in this nursery, and deservedly so, for it is one of the handsomest of its kind, is the Andromeda japonica, which we saw in all stages—countless hosts in the seed frames, any quantity in the quarters just coming into bloom. Viburnum plicatum, too, finds favour among deciduous shrubs, and no wonder, for there are few more effective plants. Hydrangea paniculata grandiflora is also quite at home. We had never seen it treated as a standard before, but, as may readily be

imagined, it forms a very effective one. While the Hydrangea is lifted up, Cotoneaster Simonsi is kept low. Used as an edging in lieu of Box-edging it answers admirably, either cuttings or seedlings planted thickly may be used, and very little attention is necessary.

The collection of Coniferous plants is very large, Golden Retinosporas, Cypresses, Thuias, Junipers, and Yews, being especially abundant. The broad belts of glowing colour afforded by the Golden Lawson Cypress, the Golden Retinosporas and others, reminded one of a field of Buttercups, "the field of the cloth of gold," with the great advantage of permanence throughout the year. In the sun and air of Bagshot there is nothing sickly or unwholesome looking about the Golden Conifers. Nearer towns their colour is not so rich, it is true, but that is the case with Roses and flowers of all kinds as well. The Retinosporas are propagated by cuttings, and the big bushes are trimmed in almost too formally, but it is stated that the colour is more persistent when this pinching in is freely resorted to.

Something will have to be done, and the sooner the better, for the nomenclature of Retinosporas. What label will be big enough to contain, or what memory retentive enough to remember such names as Retinospora pisifera nana aureo-variegata? It would be too much, perhaps, to expect that the name Retinospora should be abolished; but, as a matter of actual fact, there is no such genus, what are so-called being merely particular stages in the growth of some species of Thuia Chamæcyparis and Juniper. So much for the generic name; as to the specific, is it not now well known that squarrosa and plumosa are both only stages in the growth of Thuia pisifera, and that others are similar stages in the history of R. obtusa or of Thuia occidentalis and of the Eastern Arbor Vitæ. And of these there are subsidiary variations according to stature, habit, and variegation. But why attempt to express all this variation in one name? Better far adopt some arbitrary vernacular appellation easily written and readily remembered, and leave the botanists to settle the question what the forms really are, and what position they hold in the social scale of vegetable life.

To revert to our subject, we may mention that in this nursery many of the varieties of Retinospora are grown as standards, and very striking they look when so grown. The quaint formal Retinospora leptoclada is propagated both by seed and from cuttings, and it is noticed that those plants grown from seed do not produce cones so freely as those grown from cuttings. The plant in question is remarkable for the freedom with which it produces its little rugged cones, and is probably a growth-sport from Chamæcyparis sphæroidea. The perplexing variations that occur in this group of plants are, as every one knows, well illustrated in the case of Cupressus Lawsoniana, or of the Douglas Fir; but almost equally striking variation occurs in the Abies, known generally as lasiocarpa, Lowiana, or Parsonsi. It is by no means always easy to distinguish this from Abies concolor or from A. grandis. This tree is commonly called A. lasiocarpa in the nurseries, but it has no right to that appellation. That should be reserved for the Fir known as A. subalpina or bifolia, a species which is the true lasiocarpa of Hooker, and remarkable for the ashy-grey tint both of its bark and of its foliage. This species also varies greatly in habit, and length, and colour of foliage, as was pointed out to us at Bagshot, where we picked specimens raised from the same parcel of seed varying very markedly one from another. When examined at home under the microscope, the structure of the leaf was found to be the same in all; moreover, the little fragments as they lie before us as we write, do not by any means look so different as they did on the plants in the nursery. The difference is, therefore, principally in habit—a most fallacious thing as regards the discrimination of species. Abies firma is a very fine species, resembling A. Nordmanniana or Webbiana, but the foliage is even bolder; the form called bifida is only a growth-variation of the same species. A. brachyphylla, another of the Japanese Firs, and one of the handsomest and hardiest, is here grown as A. Veitchii, it having been sent out erroneously under that name.

Most of the stock is of course of moveable size, but there are some noble specimens that will delight the visitor interested in these plants. There are numerous specimens of lasiocarpa (wrongly so-called in gardens), and very handsome they are. There is an Abies nobilis, the largest we ever saw, and which must be over 70 feet in height. It must be one of the first plants in the country, and was grafted high up on the silver fir to make the most of it when young. It now forms a tall, slender, loosely-branched pyramid. Another grand specimen is a variety of the Corsican Pine—a noble pyramid with a clear bole some 9 feet round at 4 feet from the ground—a noble specimen.

But if we filled the *Gardeners' Chronicle* we could not hope to give an exhaustive report of what may be seen in the way of hardy trees and shrubs in this nursery, and especially of those which are most generally popular. The soil is a light sandy loam in which the shrubs seem to flourish, and from which they are readily removable. Here and there the soil is almost pure sand and pebbles. One interesting point we cannot forbear to mention, is that the presence of Ulex nanus is found by experience to be indicative of good soil. There is nothing in the aspect of the soil itself to show this, but we were assured that the plant in question was so good an index of the goodness of the soil, that it was turned to practical account by taking the soil from the places where it grows, when something extra good in the soil-way is needed. Nor can we quite omit all mention of the magnificent prospect over hill and dale, moor and Pine wood to be obtained from various parts of the nursery. It is almost superfluous to say that the cultivation is excellent, and the keeping of the nursery, considering its extent, 300 acres in all, highly remarkable.

Apples at Messrs. Backhouse's.

The Apple crop having been almost a failure in the locality of York, it occurred to me that it would be worth while calling to see what kinds were cropping best in the fruit tree quarters of these nurseries. It will be noted that some of those named are not usually classed in fruit tree catalogues; they have been selected by the firm from various sources, mostly in the North of England, and are the names under which they were grown when selected. The trees on which the best fruits were growing are worked on the Paradise stock. Personally, I was for some time prejudiced against trees on this stock, save in a few instances; but I now think that in the majority of places it is the best stock.

The following were the kinds bearing good crops of fine fruit on the Paradise:—Northern Dumpling, Kentish Fillbasket, Cellini, Winter Queening, Potts' seedling, Rymer, Ringer, Rose Hill, Nancy Jackson (a fine local kitchen Apple), Warner's Pippin, Lane's Prince Albert, Long Apple (an American kind), Worcester Pearmain, Tower of Glamis, Beauty of Hants, Small's Admirable, Betty Geeson, and, "last but not least," Ribston Pippin, of which there were rows of trees loaded with fine fruits. The soil of this part of the nursery is a sound, sandy loam, all the trees were in very healthy growth, and were studded with incipient bloom buds, which promised well for an abundant blossom (and let us hope fruits) in another season. There were large quarters of young pyramidal and bush-shaped trees worked on the crab stock, some of which were well fruited also, but not so freely as the above-named. *H. J. C., Tadcaster.*

The Tonquin Mulberry.—M. Godefroy, in a recent number of the *Garden*, makes mention of a new Mulberry important to silk producers. The plant does not exceed 4 to 5 feet in height, and the stems die down every autumn. Four crops of leaves can be obtained from the tree in one season. The plant is evidently of importance to the silk industry, and it is of importance that it should be botanically determined, as it seems hardly likely it can be a true Morus.

Colonial Notes.

Adelaide.

Dr. Schomburgh reports that in the year 1888, only 15·5 inches of rain fell, 6·4 less than the average of forty-nine years. During the last two months of the year only 2·4 inches of rain fell. The temperature rose to 170° and 177° in the sun, and to 109° in the shade. The drought ceased on January 1 of the present year, when 2·2 inches fell within twenty-four hours. The drought afforded an opportunity for testing the merits of certain forage plants under such conditions. Our Poa pratensis is one of the grasses that withstood the evil effects of the drought. Sainfoin and Tagosaste (Cytisus proliferus), are well spoken of. Japan Clover (Lespedeza) and Comfrey are not suited to the country. In the appendix is given an account of certain specimen trees in the garden, such as Ficus rubiginosa, planted in 1860, and which has now attained a height of 48 feet. The stem at 1 foot from the ground is 17 feet in girth. From this the tree branches out into seven main stems. The Jubæa spectabilis of Chile is twenty-nine years old, and has grown to the height of 27 feet. The stem at 2 feet from the ground is 13 feet 4 inches in girth. The Pepper tree (Schnus Molli), is 64 feet in height, with a spread of branches of 54 feet, the girth of the trunk being, at 3 feet from the ground, 9 feet 9 inches. Coloured lithographs of some of these trees are given.

Victoria: Wattle Bark.

The reckless felling of certain species of Acacia for the purpose of their bark has led the Victorian Government to appoint a committee of inquiry as to what regulations should be adopted to remedy the evil. The commissioners show that the value of the leather exported from Victoria in seven years was no less than £1,532,703, exclusive of that required for home consumption. The export of Wattle bark in one year amounted to 9724 tons, while the quantity used in the Victorian tanneries ranges from 12,000 to 15,000 tons per annum. The commissioners visited the Wattle-growing districts, and were eye-witnesses of the reckless waste that takes place owing to the wanton carelessness of the strippers. They recommend the culture of the trees in various localities well suited for the purpose, though so poor as to be practically valueless for other purposes. The soil in some districts is reported to be full of Wattle seed, which is capable of remaining dormant for a long period. After bush-fires, young Wattle trees come up in profusion, so that there is no doubt but that under proper regulations the culture could be largely extended. The three species of most importance are A. pycnantha, known as green, golden, or broad Wattle; A. decurrens, black Wattle; and A. dealbata, silver Wattle; the latter being least valued. Much of the waste bark could be worked up into "cutch," or terra-japonica, which is now imported at £20 a ton. The wood of the Wattle is also very useful. Baron von Mueller's *Iconography of the Australian Species of Acacia* will be of great service in calling attention to other species besides those named. The report of the Board is replete with interesting information, and shows what profit is likely to accrue from the systematic cultivation of Wattles. We append a few of the more important conclusions of the Board:—

"That, in the opinion of the Board, the indiscriminate and reckless stripping of bark, as carried on in years past, will, if continued, cause such a reduction in the annual supply as will materially check the progress of the tanning industry and export trade.

"That regulations can be so framed as to conserve and encourage the growth of the Wattle trees on Crown lands, in sufficient numbers to ensure a continuance of the supply required for local wants, as well as the maintenance of the supply required for foreign markets.

"That the principle of Wattle cultivation should be adopted by the State, and also by all local govern-

ing bodies having the control of reserves or tracts of unoccupied land. Wattles should be grown on the main roads, along all the lines of railway, and on all lands which are not available for other purposes.

"That stripping Wattle bark on Crown lands shall only be permitted from the 15th day of September to the 15th day of January next following. Any stripping carried on out of the season so specified shall be considered illegal; and the offender shall be adjudged guilty of a breach of these regulations.

"That each license shall be issued on the following [among other] conditions:—No trees of less than 5 inches in diameter, when of the black or feather-leaf species; nor less than 4 inches, when of the golden or broad-leaf species, shall be stripped of their bark; the measurement to be taken 2 feet at least from the ground."

Cape Town.

The report upon the Botanic Gardens and Government Herbarium, Cape Town, for the year 1888, a copy of which has just been received, states that the income of this garden for the year 1888 has consisted of a grant from Government amounting to £500, subscriptions to the amount of £45 4*s*. 6*d*., and profits of a seed and plant business undertaken by the commissioners at their own risk. The total working expenses for salaries, labour, stock-purchases, &c., amount to £1434 15*s*. 11*d*. Assuming that it is an advantage that there should be a garden of this kind as a health resort and breathing space in the heart of Cape Town, it would appear that the advantage costs £1434, and is supplied to the public for £545. The balance is earned by the garden itself.

[We have before now commented on this, and on the strange ignorance, or apathy, which prevents the authorities from developing their garden to useful purposes, while they spend money in phylloxera regulations which are worse than useless, but lately rumours have reached us that a better state of things is in prospect.]

Forest Department of the Straits Settlements.

Mr. Ridley's annual report deals, among other things, with the extirpation of Lalang, a grass (Imperata cylindrica), which is injurious, not only by the obstacles it offers to cultivation, but also by the circumstance that it is very inflammable. Waste or cleared ground speedily becomes covered with this grass. The only effectual bar to its progress is to plant trees, the shade of which prevents the growth of the plant. Of course, this is likely to be a slow and expensive process, but eventually a sure one. Mr. Curtis, the Assistant Superintendent of Forests, Penang, gives an account of his successful search for Cypripedium niveum, of which he secured a large supply.

Though only a few hours distant from Penang, the vegetation is very different, being more Burmese than Malayan, and Mr. Curtis obtained several novelties for the garden at Penang, where they will be available for exchange.

Trinidad.

The annual report of the Botanic Garden for 1888, contains some "ink photos" of remarkable plants in the garden, such as Ravenala madagascariensis, a noble Corypha, a giant Bamboo, the Palmyra Palm, and Borrassus flabelliformis. Speaking of American visitors, Mr. Hart remarks that, "the amount of energy and enthusiasm shown by this class of our visitors from the North is something surprising, certainly eclipsing anything seen from the European side of the world. In fact, Europeans must indeed look to their laurels in these matters." Mr. Hart does not expressly specify wherein the superiority consists.

The gradual diminution of the most showy kinds of native Orchids for trade purposes is shown to be such as to cause apprehensions of their total extinction. O. Lanceanum is mentioned in particular, and a tax on exports of this plant is proposed.

An elaborate series of meteorological tables is appended, from which we learn that the maximum temperature for 1888 was 91° in September, the lowest 66° in February, the mean temperature for the whole year being 78°. The total rainfall was not more than 65·4 inches, which is as nearly as may be the same as the average for twenty-five years. The greatest fall is in July and August (9·37 and 10·6 inches), the least in February, March, and April, months in which less than 2 inches is recorded in each month.

The report is full of information useful to the colonist and planter, and is highly creditable to the zeal and energy of the curator.

Plant Notes.

CISTUSES.

Many plants are more beautiful than these shrubby Rock-roses, but few that we can at present call to mind dispense their beauties over a longer period of time, or give such a wealth of blossoms. Nearly every one fights shy of the Cistuses, on the plea that they are not hardy, getting killed every few years. We have long suspected that cold was not the only cause of large handsome bushes dying off as they do. The Cistus, whatever it may be in a wild state, appears to be a short-lived plant under cultivation, and must be renewed every few years; but this may be easily done, as they all strike readily enough in a cold frame, and soon make fine bushes. Another cause of failure is too good treatment, as we find when planted in poor, shallow, sandy soil, and left alone to get moisture the best way they can during late summer and autumn, they weather the winter better, and though growth is not so luxuriant, they last longer, and flower just as profusely, as those in a richer border. Cistuses are amongst the best rock-shrubs we know, and there is now such a variety, both in habit and colour of flowers, as to give a very large choice. The plant sent out as C. lusitanicus, and which we believe is a hybrid between C. ladaniferus and C. monspelienis, is one of the best; its large white, rich purple blotched flowers, have been till lately as good as they were four months ago, though, of course, fewer. The same may be said of C. longifolius (= florentinus of gardens), a really handsome white-flowered species, with neat compact habit, and always pretty in its abundance of rich green wavy foliage. C. crispus, a fine rich purple species, we had in flower a few days ago. Others may be had with equally long flowering seasons, and useful on account of their variety of shades, such as C. villosus, C. eriocephalus, C. monspeliensis, &c. *D. D.*

Clematis Davidiana.

This beautiful herbaceous Clematis belongs to the non-climbing section, and is closely allied to C. tubiflora, which is described as being erect, with growths from 2 to 3 feet long. C. Davidiana is not erect, but has a tendency to rest on the ground, and its shoots grow from 3 to 4 feet in length. The flowers are numerous, and crowded together at the base of the petioles, the individual blossoms resembling those of the Hyacinth, and are sweetly scented. The leaves are divided into three dark-coloured, egg-shaped, pointed leaflets; the upper portion of the margins of the blade is toothed. It is a much admired plant, and very suitable for the mixed border. It is readily increased by taking cuttings just when the plant is commencing to grow, which will be in the beginning of the year, and put under a cool frame or bell-glass, where they are sure to root in due season. *W. Harrow, Botanic Garden, Cambridge.*

The Herbaceous Border.

HELIOPSIS.

The genus Heliopsis extends from Canada to the Andes of Peru, without varying much within itself in botanical characters. De Candolle, in his *Prodromus*, recognizes four species. H. lævis (Persoon), on which the genus was founded, and H. scabra (Dunal), both North American; H. buphthalmoides (Dunal), and H. canescens (Humboldt), South American. The authors of the *Genera Plantarum*, reduce these four to three. Torrey and Gray, in their *North American Flora*, recognise only one North American species, which is called H. lævis, and Asa Gray, in his *Handbook*, published in 1876, makes only this one. We find two portraits of the genus, one in the *Botanical Register* of 1821, t. 592, of H. canescens: the other in *Bot. Mag.*, 1834, t. 3372, of H. lævis, with many synonyms. We formerly had several names and forms in gardens, perhaps more prominent than ornamental, as some of them grew at least 8 or 9 feet high, flowering only on the top. About five years ago, I received some seed collected in Minnesota, from which I raised some comparatively dwarf plants, with bright orange-yellow flowers, and flowering from June to October. Though these had very rough leaves, I followed Asa Gray's *Handbook*, and called them H. lævis, and have distributed the seed widely under that name. I have since found that Asa Gray, in his *Flora of North America*, divides this species into four, so that the name, H. scabra, to which he gives back specific rank, ought to be given to forms of H. lævis, with rough leaves. These undoubtedly include the best forms of the genus; the flowers of those which I raised are vastly superior, both in substance and colour, to either of the portraits mentioned above. *C. W. D.*

Aster pyrenæus.

This plant, named and described by De Candolle, is not uncommon in English gardens under the name of A. sibiricus, given to it by Lamarck, through an error as to its habitat. It is known as a wild plant only in the Val d'Esquierry, a few miles from Luchon in the French Pyrenees, and in one or two spots on the Catalonian side. A continental catalogue of plants announces that it is now extinct in these places, and known only in cultivation. It is, however, very easily cultivated, and, except that its merits as an ornamental plant are not very great, it would be in no danger of being lost. It grows about 18 inches high, and flowers very freely at the end of July. The flowers are large, and are pale blue, spoilt by a slight suspicion of red in the colouring. It ripens seed freely, and is worth a place, though inferior in merit to Aster Thomsoni and A. spectabilis, which flower at the same time. *C. W. D.*

A Good Late Rudbeckia.

Three or four years ago, I received a plant named Rudbeckia lævigata from Messrs. Smith, of St. John's Nursery, Worcester. It answers to the description of R. lævigata (Pursh), in Asa Gray's *North American Flora;* that botanist considers it to be a variety of R. laciniata. From a gardener's point of view, however, the two plants are quite distinct. R. lævigata begins to flower after R. laciniata has finished, and continues until quite the end of flowers. It has broader rays, more evenly arranged, and flowers more freely, besides being of a richer colour. It grows about 6 feet high, and is a good companion to the taller Michaelmas Daisies. *C. W. D.*

Rudbeckia purpurea.

As a border or rock plant, this charming flower has at the present moment few equals. It has a noble habit, and except in very exposed places does not require staking, a process to be dispensed with in all possible cases. It thrives best in a deep rich soil, and should be occasionally divided, as it has a tendency to mass and dwindle. We find our plants at any rate always produce larger and better shaped flowers after division, though perhaps the best results are to be obtained from systematically raising from seed. It is described in the synoptical flora of North America as Echinacea purpurea, and we have also seen it called Echinops and Rudbeckia serotina. It has a very charming purplish colour, and is a splendid subject for massing. *D. D.*

Preservation of Leather. — Californian papers announce the discovery of a substance which has an extraordinary effect upon leather, rendering it waterproof, pliable, and almost indestructible. The discovery is alleged to have been made in the laboratory of the State University of California. Some combination of fatty matter and sulphur is hinted at as the ingredient which is to revolutionise the leather trade, preserve shoes, and turn old boots into new ones. Assuming a certain amount of truth in the statement which reaches us, it would seem that our Californian friends have hit upon something like our Gishurstine.

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Oct. 8 — Royal Horticultural Society: Fruit, Floral, and Scientific Committees.

WEDNESDAY, Oct. 9 — National Chrysanthemum Society: Floral Committee.

SHOW.

THURSDAY, Oct. 10 — Crystal Palace: Fruit Show (three days).

SALES.

MONDAY, Oct. 7 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

TUESDAY, Oct. 8 — Nursery Stock, at Holdforth's Nursery, Woking, by Protheroe & Morris (two days). Clearance of Greenhouse Plants, Greenhouses, &c., at Southbourne-on-Sea, Boscombe, and Christchurch, by Protheroe & Morris (four days). Lilies, at Protheroe & Morris' Rooms. Plants, Roses, &c., at the City Auction Rooms, by Protheroe & Morris.

WEDNESDAY, Oct. 9 — Dutch Bulbs, at Stevens' Rooms. Nursery Stock, at Borrowash, Derby, by Protheroe & Morris (two days). Plants and Bulbs, at Protheroe & Morris' Rooms.

THURSDAY, Oct. 10 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at Banks' Nursery, Hayward's Heath, by Protheroe & Morris.

FRIDAY, Oct. 11 — Established and Imported Orchids, at Protheroe & Morris' Rooms. Nursery Stock, at Wills' Nursery, Leamington, by Protheroe & Morris.

SATURDAY, Oct. 12 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—52°.5.

Potato Sets, and Planting.

It has become a matter of common belief that to ensure good returns from land cropped with Potatos, the seed should be changed occasionally. Of course, if the sets of all the varieties of the tuber grown in a garden are not well matured, so far, at least, as regards those intended to be the sets of the following year, and if they are not laid out thinly to get green on the outside, but are huddled away in heaps in unsuitable places, there will follow loss of vigour in the sets so maltreated, but not loss of the varietal characteristics. Another circumstance which leads to poor returns, but which is not due to weakness in the set, comes from the too common practice of putting the set into the ground with all its eyes or buds. This was recognised long ago by observant cultivators as a mistake; still, planting sets with most of the eyes cut out is rarely practised on a large scale. In the ordinary course, nearly all the buds produce stems, and at the expense of the crop of tubers. It is, therefore, good practice to allow the set to push its buds about a quarter of an inch in a temperature not higher than 40°, and then rub off, or, still better, to cut out all the buds but two or three at the crown end. With the earliest croppers this is now a common practice with the gardener, but he does not carry it out generally to its logical conclusion by treating the sets of the late garden or field crops in a similar way.

In these pages, August 17 last, an excellent paper was communicated by Mr. J. J. Willis, Harpenden, which embodied the conclusions arrived at by Professor Girard (*Comptes Rendus*) in his investigations on the various methods adopted with the sets. We will here, at the risk of being thought tiresome, repeat what is there stated:—

	Yield per acre.
Tubers divided in their length	5 tons
Whole tubers planted	7½ ,,
Crown half of tubers planted	9¼ ,,
Whole tubers, eyes other than crowns removed	11½ ,,

These results are so remarkable that they must appeal to the understanding of all cultivators of the tuber. At this season, when the crop is being everywhere lifted, it would be well to select with care sound, medium-sized sets, allow them to lay in a light place—not necessarily in the open air, spread out thinly, so that the skin becomes of a light green tint by exposure to the light, and then put away in a cool, dry place, not accessible to frost—at the most, not more than two deep. The sets of late and field crops, usually not required for planting before April, will be preserved in good condition in heaps of small size or narrow ridges, left open at the top until November, sunk as regards the floor, not more than 8 inches below the surrounding level, and made on the north side of walls or hedges, or in sheds open to that point. The soil covering these heaps need not be more than 6 inches thick, and will usually consist of the soil thrown out in making the hole or trench. In such positions the sprouting of the tubers takes place very late in the winter, and seldom proves injurious; and if hard frosts prevail, or appear imminent, some light stable litter or dry tree leaves should be put over them for the time being to prevent freezing of the tubers.

There is one precaution which must be taken, and that is, not to allow heat to be engendered by bulking too many tubers in one heap or ridge, or by keeping them unduly warm by extra coverings after the frost has passed. As a measure of discretion, the heaps, &c., should be examined once or twice in mild weather during the winter, and decayed tubers taken out; and more especially is this needed if disease was prevalent in the autumn.

There is, we think, but little truth in the statement that a variety loses vigour by being grown repeatedly in the same garden, if rotation of cropping is carried out; for in that case the Potato crop, except in small gardens, would come on the same piece of land but once in three or four years. We have known certain varieties of Potatos grown in one and the same garden for twenty-five years without it appearing that any change of seed was called for. In that garden a quarter of the land was trenched annually, no manure beyond leaf-mould was ever put round about the Potatos, but the crop was one that usually followed another which had received a heavy dressing.

The gist of the matter seems to be that whole sets should be planted, and these should be denuded of all eyes but a few of those at the crown; and the plants allowed ample space, so that the roots may have a large feeding area, and then the Potato crop will be far greater than we are accustomed to have, and the number of sets required, fewer. As an instance of planting prepared sets at wide distances apart: we once saw planted Potato Prinz Friederic Carl, a good cropping white, round, on ground simply dug, and when dug up at the end of August, in no case was the quantity much less than 1 peck per root, or at 40 lb. per bushel, a quantity equal to 20 tons 12 cwt. 16 lb. per acre. The sets were put into shallow basins scooped out with a heart-shaped draw hoe at 3 feet apart, over the whole area, and when moulded up, each plant had a circular mound to itself, thus allowing light and air to reach the plants on every side, and had the disease attacked them, the spores of the fungus falling from the leaves would have fallen mostly in the depressions between the hillocks, and the tubers would have suffered but little.

The Vegetable Conference.—Taking up the parables of the Conference dropped last week on Wednesday afternoon, we have to report a further gathering of a very well attended and successful kind on the following day, over which Mr. Shirley Hibberd presided. Mr. J. Wright opened the ball with a lengthy and somewhat abstruse paper upon the "Food of Vegetables," a theme that requires handling by a chemist or physiologist. Of course the food referred to was found in divers manures. After Mr. Wright had shown that the plants ate the manures, others showed that we ate the plants or their products, and thus nothing is lost to the world. Mr. Laxton, of Bedford, who freely admitted that he had sinned in the direction of raising more new Peas than anyone else, very naturally dealt with the subject of "Improvements in Peas during the Past Twenty-five Years," but somewhat tacking to fill his sails with the winds of cross-fertilisation, with which topic no man is, perhaps, more familiar. It was rather hard upon him that Mr. R. Dean should have given it as his opinion that, in spite of all which had been done with Peas, yet that Champion of England, Ne Plus Ultra, and Veitch's Perfection were still the most widely grown of Peas, although very old ones. All the same, it must be admitted that we have far finer and even more prolific Peas than these—notably, Telephone, Duke of Albany, Satisfaction, Triumph, Sturdy, &c., but none excel the old ones in quality. Probably no Peas ever will. Mr. Laxton's lungs were barely strong enough to keep his large audience together, but Mr. A. Dean's voice brought them back again whilst he dilated upon the "Improvements in the Potato during the past Twenty-five Years," and allowed little room for dissent. It was a short, crisp paper, and was much appreciated. Mr. Smith, of Mentmore, as might be expected, was severely practical. His paper on the supply of vegetables for a family all the year round, was an admirable condensation of instruction as to the best times of sowing and cropping and cultivating vegetables to secure that *desideratum*, including an enumeration of the best varieties to that end. It was just such a paper as will be useful to the young gardeners upon whose shoulders are placed the grave responsibility of doing that which the paper was intended to illustrate. It would be well worthy reproduction in every seedsman's list. The discussion on these papers was unimportant and the Conference was brought to a close by a cordial vote of thanks being given to the readers of the papers. This was proposed by that excellent Scotch gardener, Mr. Malcolm Dunn, whose steadfast adherence to the Conference merits all praise, and who expressed a strong wish that the papers, as well as the report of the jurors, should be made public as speedily as possible. In responding to one part of the vote, Mr. A. Dean protested strongly against the results of the labours of the readers being rewarded by immuring the papers in a closet at Victoria Street, and said that in common justice to the compilers, copies should be sent to all the gardening papers at once. If left till the beginning of the coming year, all interest in the Conference would have passed away. He urged the chairman to represent this protest to the Council, not a member of which unfortunately was present to hear it, but which Mr. Hibberd, in responding for himself, promised to do, as he entirely agreed with its purport. Not only, then, did the



VIEW IN THE FLOWER-GARDEN AT HALTON.

audience dissolve, but the various vegetable exhibits soon disappeared also. There can be no doubt whatever but that, in spite of some drawbacks, the Conference proved to be enjoyable, and held together those who had come from near and far in close and pleasant intercourse to an unwonted degree. As a purely social gathering the Conference was eminently successful. It was not less so educationally, and as a mere spectacle it merited high praise.

Vegetable Conference Juror. — Mr. A. Watkins, of Messrs. Watkins & Simpson, was accidentally omitted from our list given last week. Mr. Watkins worked on the tubers and bulbs (except Potatos). It appears he had not arrived when the official list was made.

Progress in Peas. — Mr. Laxton, in his paper on the improvements amongst Peas during the past quarter of a century, contended that in this period great improvements had been effected, especially in the direction of earliness, of handsome, large, and well-filled pods, and of dwarf later sorts, but stated that there is scope for further advance in hardiness and fertility, more particularly in the production of hardy market varieties; and he holds that continued and constant attention will ever be necessary to preserve the acquired earlier and dwarf character of Peas, as the stocks are especially liable to deteriorate in these respects, chiefly from the repeated shelling out, previous to and in harvesting, and to the destruction, by birds, &c., of the earlier and dwarfer portions of the stocks, before the bulk can be secured. Mr. Laxton also alluded to the two modes of improvement resorted to by growers—selection, following natural or insect cross-fertilisation, which, contrary to the general belief, he considers does take place, although rarely, in the Pea, through the instrumentality of thrips and similar small insects. The presence of "rogues," as the stragglers in a crop of Peas are termed, is more often due to this cause than has been suspected, but mostly to the natural tendency of the cultivated Pea to sport and revert to the original type. Artificial cross-fertilisation was described as another plan more recently adopted by raisers for the obtaining of new and improved varieties, and as the mode of procedure practised by Mr. Laxton. From the flower of the Pea becoming naturally fertilised in an early stage of its formation, and some two or three days before it is fully expanded, the operation, which has frequently been considered a difficult one, although in reality very simple, must precede this. Mr. Laxton divides garden Peas for shelling green into three gastronomic classes, as follows:—

1. *Lamb Peas*, consisting of the small early sorts, frequently eaten young with lamb in the early season, in this country, and answering to the *petits pois* of the French.

2. *Ham or Bacon Peas*, those usually consumed with ham or bacon, and which are generally round-seeded and of a more farinaceous character, and which are eaten in a somewhat more mature condition.

3. *Marrowfats or Quality Peas*, consisting chiefly of the larger main-crop or later wrinkled sorts, and which are sweet in flavour, and of a buttery texture when cooked green.

That in order to meet the requirements for these purposes, and to suit the various soils, positions, climates, and seasons for which the gardener has to provide, he holds that a larger number of sorts of Peas than are generally considered necessary must be maintained. Comparative tables are also given of the best sorts in cultivation twenty-five years ago, and of those now in general use.

Sale of Nursery Stock at Sunningdale. —We call attention to an advertisement relating to a large sale of nursery stock at Sunningdale, which will take place under exceptional circumstances. The ground to be cleared belongs to St. John's College, Cambridge, and was held on a twenty years' lease by Mr. Charles Noble. When the lease expired he did not press for a renewal, having been a tenant for twenty-six years under three different bursars, without complaint of any kind. He was surprised, therefore, to find that the college authorities had resolved to sell the ground, containing valuable nursery stock. He has to give up possession immediately. The details of this large sale may be gleaned from the advertisement.

The Exotic Nursery, Chelsea.—Horticulturists who are old enough to remember this establishment when it was in the hands of Joseph Knight, and still more, those who enjoyed the hospitality of James Veitch, will read with interest that the old dwelling-house has been removed for the purpose of erecting new offices. If those old walls could have spoken, what histories they might have detailed. In these days of phonographs such records come within the range of possibility.

Homestead Orchards.—The Lord Mayor of London has consented to read a paper on "Homestead Orchards" to the members of the Kendal Agricultural Society shortly after the completion of his Mayoralty.

Memorial to Roezl. — A project has been started to raise a memorial at Prague to Benedict Roezl. We wish the project all success, but hope that the claims of such men as Douglas, Fortune, Lobb, and many others, may be similarly met.

The Leeds Paxton Society.—The above Society intends to hold an exhibition of Chrysanthemums on November 12 and 13 next.

Double-spathed Arum. — Mr. Tailby, of Wellesley, Mass., sends us a photograph of a case wherein the leaf next adjoining the spathe has assumed a spathe-like character. Such cases are not uncommon, and some have been figured in these columns.

Lælia Measuresiana.—A fine plant of this is now in bloom at Mr. Bull's nursery, no fewer than fifty-four flowers being open together, and others are still to follow. The rich violet lip forms a curious contrast to the olive-coloured segments.

Tillandsia Lindeni.—The dwarf form of this species is now in flower in Mr. Bull's nursery. The compact habit, slender dark olive-green leaves, and broad flat spikes, with rich pink bracts and bright blue flowers, render the plant very desirable.

Amasonia punicea is one of the most useful of Messrs. Veitch's introductions, and is remarkable for the long time (two to three months) in which it continues in flower.

Coloured Leaves.—Our decorative florists are taking advantage of the gay tints of the autumn foliage, and are making it up into effective sprays and bouquets for ladies' dresses. There is no denying that coloured leaves judiciously put together are quite as artistic as many more pretentious arrangements, and are far less costly. For the modest sum of 2*d.* a spray can be had composed of brightly tinted Bramble and Virginian Creeper leaves, made up with the golden shoots of Asparagus, Berberis fruits, and a yellow Composite with white woolly leaves. The idea seems to us a good one, and capable of much development.

United Horticultural Benefit and Provident Society. — The annual dinner of this Society will take place on Wednesday, October 23rd inst., at the Cannon Street Hotel, E.C., at 5.30 p.m. N. N. Sherwood, Esq., will preside.

Ealing District Gardeners' Mutual Improvement Society.—The autumn session of the above Society began on Wednesday last by the holding of the annual general meeting of members, when a very satisfactory report and balance-sheet were presented. The opening address will be delivered in the Victoria Hall, Ealing, on Wednesday, the 9th inst., at 8 o'clock, by Shirley Hibberd, Esq., and some interesting exhibits will be staged. This will be followed by addresses by the Rev. Percy Myles, and Messrs. R. Dean, J. Hudson, A. Dean, Geo. Gordon, L. Barron, and J. Fraser. On Wednesday, October 30, a concert and musical entertainment in aid of the Gardeners' Orphan Fund will take place in the Victoria Hall.

Amaryllids. — Scarcely is Mr. Baker's book published, than Dr. Pax, of Breslau, issues a paper wherein the Amaryllids of the Argentine Republic are detailed, and several new species described, including some handsome Bomareas, which may, we hope, be seen in cultivation.

Eucomis punctata.—It will be news to many to hear that this plant is hardy. The excellent secretary of the Royal Horticultural Society tells us, not only that this plant is hardy in his garden, but that self-sown seedlings have sprung up, and this year produced flower.

Chiswick Gardeners' Association.—On October 11, Mr. Shirley Hibberd will deliver an address on "Green Leaves," in the place of meeting at the Royal Horticultural Society's Gardens, Chiswick.

Orchid Nomenclature Committee.—It is proposed that the first meeting be held in the Lindley Library, Royal Horticultural Society, 117, Victoria Street, on Tuesday, October 29, at 2 p.m. Gentlemen having suggestions to make for the consideration of the committee, are requested to communicate with Dr. Masters, at the above address.

Cornflowers. — Messrs. Haage & Schmidt have favoured us with a bunch of flowers of their new strain, which are novel, pretty, and effective. They are called "double," but it is only by a rather violent extension of meaning that the term can be rightly applied in this case. The outer florets of a Centaurea, the florets of the ray, as they are called, are irregularly tubular, with a dilated trumpet-shaped, somewhat two-lobed limb, dividing into five or more unequal lobes. Internally they contain neither stamens nor pistils, unless in an abortive condition. The central or disc florets are also tubular, but the limb is regularly divided into fine linear segments. These florets are less conspicuous than the others, but contain both stamens and pistils. In Messrs. Haage & Schmidt's flowers, what has happened has been the increase of the ray florets at the expense of those of the disc. The beauty of the flower is undoubtedly enhanced, but if the process is to be developed, the production of seed will be correspondingly diminished. The distribution of colour in Messrs. Haage & Schmidt's flowers is remarkable; some are blue, others white, others have the petals deep violet tipped with white, producing an effect like a Scabious. They are excellent for cutting purposes, so that wide popularity may be safely predicted for them, especially as Messrs. Haage & Schmidt assert that a large proportion—60 to 70 per cent.—will come true from seed.

Berkhamsted Horticultural Society.—The fortieth show of this Society was held on September 23 at the Town Hall, when for the first time prizes were offered for groups of plants, and a capital competition took place. Mr. Lucas (gr. Mr. Higgings) took 1st place with the usual exhibition plants; Mrs. Lucas (gr., Mr. Lush) gaining 1st place in the competition for smaller groups. Fruit was well shown, Grapes and Apples being exceptionally fine. Cut flowers were shown in fine condition by Mr. E. Mawley, who had also a beautiful bank of cut Roses in many varieties, but the Teas formed the principal part. Messrs. Lane & Sons showed a fine collection of fruits, including Gros Colmar Grapes and their Prince Albert Apple. The cottagers of Berkham-

sted, who have much allotment ground in cultivation, contributed a very good lot of vegetables, the size, variety, and finish being much superior to what is ordinarily observed in similar exhibitions; in fact, gardeners by profession must look to their laurels in this district.

Nepenthes at Messrs. Veitch's. — The Nepenthes-house at the Royal Exotic Nursery is well worth a visit at this time, as a large number of the species have produced their pitchers profusely. Among the most remarkable are the new hybrid N. Dicksoniana×, the form of N. Curtisi known as superba, an improvement upon the original type. N. Mastersiana× maintains its ground for the profusion in which its pitchers are formed, and for their brilliant colouring. N. Burkei, the latest of Messrs. Veitch's introductions, is a handsome form, presenting some exceptional characteristics. No doubt it will attain larger dimensions under cultivation, and perhaps develop new characters.

The British Fruit Growers' Association (President, Lord Brooke, M.P.) intends holding a meeting and Conference at the Crystal Palace, on the first day of the Hardy Fruit Show, Thursday, October 10, at 3 p.m. Papers on fruit culture will be read by Mr. T. F. Rivers and other eminent authorities. The Hon. Secretaries are Mr. L. Castle, Merton, Surrey, and Mr. W. Earley, Ilford, Essex.

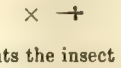
Food from Flowers.—Previously to the publication of the last number of the *Kew Bulletin*, the only flowers with which we were familiar, as yielding food products, were those of the Mahwa (Bassia latifolia). Considering that the flower has only a temporary purpose to serve, it is not surprising that what stores of food there may be within it, should be generally exhausted in the ripening of the seed. Indeed, as a rule, the seed gets its food rather from the leaves than directly from any part of the flower. The *Bulletin* before us contains a digest of of all that is at present known concerning another food product, also derived from flowers. It appears that under various names, such as "balanja," "phok," &c., a shrub allied to the Docks (Rumex) is known in parts of North-Western India, and the flowers of which are collected from the ground, and used largely as food by the natives. This shrub is the Calligonum polygonoides of botanists, the flowers of which are noted for their "strong pleasant odour, as of over-ripe Strawberries." Through the mediation of Mr. Duthie, the Director of the Botanical Department, North-West India, specimens of this have been received at Kew, and a portion has been analysed by Professor Church, who finds the flowers peculiarly rich in nitrogenous compounds, there being no less than 16 per cent. of albuminoids, or in the proportionate ratio to the starchy ingredients of 1 to 4·8, that of Rice being 1 to 10·8. The amount of sugar, 46 per cent., is also large. Analysis therefore supplies an excellent illustration of the value of this article of food.

Horticultural Club.—The first monthly dinner and *conversazione* for the session 1889—1890 will take on Tuesday, October 8, at 6 p.m. The subject for discussion will be "Dressing Roses," to be opened by Mr. T. W. Girdlestone.

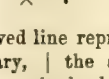
Garden Notes.—The Duke of Buccleuch is staying at Drumlanrig, entertaining the Duke of Fife and other distinguished guests.

Arbor Days.—At Adelaide (South Australia), the successful initiation of Arbor Days has been signalised by the members of the city and suburban schools having planted 800 trees upon the Park Lands adjacent to Adelaide. Many private persons also planted trees on that day in various parts of the colony, and no less than 35,000 trees had been applied for at the Forest Office on the day before Arbor Day. Additionally, a number of District Councils, schools, and Corporations intended to initiate Arbor Days in their various districts. The City and Suburban Schools Arbor Committee forwarded a recommendation to the Ministry to provide for the proclamation of an annual holiday, to be called Arbor Day, when every colonist of South Australia should be invited to plant at least one tree, and they suggested that the first Friday in August each year would probably be the most suitable day.

Satyrium coriifolium.—For a flower-spike of this Cape terrestrial Orchid we are indebted to Mr. O'Brien. It is a stout spike bearing at its summit a many-flowered dense cluster of ochre-coloured flowers, flushed with deep orange. Each flower is about an inch long, and is hooded above like a Monkshood. Two long spurs project from the back of the hood, while in front three strap-shaped segments emerge, as it were, from under the hood—two to the side, one central. The column is entirely concealed within the hood. Such are the main features of the flower, as seen at a superficial glance; but the whole arrangement is so peculiar, and if we may say so, so admirably contrived for the purpose it has to fulfil, that, at the risk of being tedious, we enter into fuller detail. In the first place, the ovary is not twisted, as it is in most Orchids, the consequence is that the lip or hood occupies the upper part of the flower. Next, the three sepals are unequal, the two side ones bigger than the mid or lower one. The two lateral petals are of the same form as the side sepals, the mid petal as before said, forms the hood. Within this hood is the column, not straight, but curved forward like a swan's neck, and bearing on its summit, at the back, a rounded, feathered, erect stigma. In front of the stigma projects horizontally a three-lobed "rostellum," the lobes of a triangular form, and directed forwards. On the under or front surface of this rostellum, is the two-lobed anther. Each lobe contains one pollen mass with a stalk and a crescent-shaped gland, by which it is attached to the rostellum in such a way that the gland occupies the space between two lobes of the rostellum. One result of all this hood-like formation, this curvature, this displacement, this substitution of one form for another, is to compel the insect who visits the flower for the sake of the honey in the nectary, to make itself useful. The state of matters may be explained by the following diagram:—



where ⊣ represents the insect in its passage to × the nectary, prevented from wandering to right or left by the hooded petal ⌒, and by the rostellum ⌒, and when it must needs remove the pollen masses o o. These adhere to the back of the insect's back by means of the sticky glands, and when it visits another flower the pollen of necessity strikes against the stigma, as shown in the plan—



where the upper curved line represents the hood of the lip, × the nectary, | the stigma, and ⊣ the insect with the pollen on its back.

Begonia Scharffiana and B. Haageana—These two plants have been confused with each other. They have both been in flower at Kew, are perfectly distinct, and the names for each have been decided as follows:—In 1887, Messrs. Haage & Schmidt sent three kinds of Begonia to Kew for name, and they appear to have sent them also to Dr. Regel for the same purpose. These Begonias had been introduced from Brazil by Dr. Scharff, and Messrs. Haage & Schmidt desired that one of them should bear his name. The plant selected for this compliment at Kew, however, was not the same as Dr. Regel had chosen, but as his description of B. Scharffiana was published before that of B. Scharffii appeared in the *Bot. Mag.* Dr. Regel's name must stand. B. Scharffiana of Regel is described in the *Gartenflora*, 1888, p. 127. It has large fleshy leaves black-green above, crimson beneath, and covered with hairs; the stipules are very large, and the flowers are clustered on long drooping peduncles. This is the plant which Messrs. Laing & Sons have distributed as B. Scharffiana. B. Haageana of Kew is the plant figured in *Bot. Mag.* under the name of B. Scharffii. It was exhibited under the former name at one of the meetings of the Horticultural Society in July, 1887. It is one of the very finest of the evergreen flowering Begonias, and is certain to become a popular garden plant. A third plant received along with the above has the habit of B. Scharffiana, but it has smaller leaves and flowers, and is a much less ornamental plant. It is called B. Scharffiana var. minor.

New Conifers.—The *Revue Horticole* for September 1, contains figures and descriptions of three new forms, as follows:—

Pinus Strobus excelsa zebrina.—A form with the leaves marked with a narrow transverse band of white.

Pinus silvestris columnaris compacta is a slow growing form with dense flame-like *contour*, resembling that proper to P. cembra in the young state.

Picea excelsa capitata.—A singular variety of the Spruce, in which the bulk of the plant forms a globular mass, from which project, like pins from a pincushion, relatively long branches, each bearing a head-like mass of leaves at the top. These three new forms are exhibited in Paris by M. Croux, of Sceaux, and are certainly very curious; but why burden them with such cumbrous names?

The Disappearance of Native Plants.—At the recent meeting of the British Association at Newcastle, a report of a committee formed for the purpose of collecting information as to the disappearance of native plants from their local habitats was read. The attention of the committee had been in the main directed to the threatened extinction of rare plants, and the report also spoke of the injudicious action of botanists themselves and of botanical exchange clubs, as being potent factors in the changes which had taken place. The committee observed that the dealer and collector figured largely in the disappearance of Ferns, and in conclusion, suggested to natural history societies and field clubs the advisability of keeping careful guard over any rare plants to be found within their respective spheres of action. Canon Tristram referred to the disappearance of plants in Upper Teesdale. All these plants which they found disappearing could be procured by those who wished them from nurserymen, and the collectors who wished to grow them could get plants far more likely to survive and flourish from the dealer than by collecting them themselves.

Surrey Chrysanthemum Society.—This Society's exhibition has been postponed for one week, and will, therefore, take place on Monday and Tuesday, November 11 and 12 at the Public Hall, Peckham.

Biographical Index of British and Irish Botanists. (By James Britten, F.L.S., and G. S. Boulger, F.L.S.)—In the *Journal of Botany* for July and August, we find the following:—

"Justice, James (fl. 1754). Of Edinburgh. *British Gardeners' Director*, Edinb., 1754, F.R.S. (?) *Pritz.* i., 136. Justicia, L."

"Kennedy, Lewis (fl. 1775—1818). Nurseryman, of the Vineyard, Hammersmith. Father-in-law of H. C. Andrews. Wrote much of *Bot. Repository*, 1799—1804; author of Page's *Prodromus* (?) (*c.f.* Johns. *Dict. Gardening*, 301). Rees, Add. *sub.* Kennedia. Loud. *Arboretum*, i., 78; Ventenat, *Jard. Malm.*, tab. 104, 1804. Kennedia, Vent."

"Kent, William (d. before 1828). Gardener, F.L.S., 1813. Accompanied Reinwardt in Indian Archipelago. Blume, *Fl. Jav.*, i., 71; *Rumphia*, ii., 94; Kentia, Bl., *Fl. Jav.* = *Melodorum*. Kentia, Bl., Rumphia."

"Ker, John Bellenden (*olim* Gawler): (d. Cannes, 1871. Edited *Bot. Register*, 1815—1824; *Strelitzia*, 1818; *Iridearum Genera*, 1827; *Trans. Linn. Soc.*, x., 166; *Gard. Chron.*, 1871, 1589; *Journ. Bot.*, 1872, 32; *Pritz.*, 162; *Jacks.*, 565; *R. S. C.*, iii., 639. Bellendena, Br.

"Ker, William (d. 1814): d. Ceylon, 1814. Kew gardener and collector. Canton, 1803; Java and Philippines, Superintendent, Peradeniya Bot. Gard., 1812. *Gard. Chron.*, 1881, ii., 570; *Trans. Linn. Soc.*, xii., 154; *Lambert, Pinus*, ed. 2., ii., 111, Kerria, *D.C.*

"Kingston, Robert Creaser (1846 (?)—1872: b. Yorksh., 1846 (?); d. Kew, 21st June, 1872. Assistant in Herb., Kew. *Journ. Bot.*, 1872, 224; *Gard. Chron.*, 1872, 876. Kingstonia, Hook. f.

"Knight, Joseph (fl. 1809—1836 [1854]). Gardener to Hibbert, afterwards nurseryman at Chelsea. Author of *Protéeæ*, 1809; *Coniferous Plants*, 1850, *Pritz.*, 166; *Jacks.*, 141, 408; *Journ. Bot.*, 1886, 296.

"Knight, Thomas Andrew (1759—1838): b. Wormsley Grange, Ludlow, 12th Aug., 1759; d. London, 11th May, 1838; bur. Wormsley. Balliol, Oxon. F.L.S., 1807, F.R.S., 1805. Pres. Hort. Soc., 1811—1838. *Pritz.*, 166; *Jacks.*, 69; R.S.C. iii. 687; *Gard. Mag.* xiv., 303; 'Selection from . . . papers and life,' 1841; *Gard. Chron.*, 1841, 351; 1877, 1, 169, with portr.; *Cott. Gard.*, vi., 43; *Journ. Hort.*, xxi. (1876), 428, with portr.; *Athenæum*, 1838, 358. Portr. at Kew, and Royal Horticultural Society. Knightia, Br.

"Knowlton, Thomas (1692—1782): b. 1692; d. Londesborough, Yorks, 1782. F.L.S., 1795. Gardener to Sherard at Eltham, and to Earl of Burlington at Londesborough. Letters to Brewer in Bot. Dept., Brit. Mus., Ait. Hort., Kew, x.; *Pult.*, ii., 239; Rich. Corr.; *Linn. Letters*, i., 77. Knowltonia, Salisb.

"Lambert, Aylmer Bourke (1761—1842): b. Bath, 2nd Feb., 1761; d. Kew, 10th Jan. 1842. St. Mary Hall, Oxon, 1779. F.L.S., 1788; V.P., 1796. F.R.S., 1791. 'Cinchona,' 1797. 'Pinus,' 1803—1829; ed. 2, 1832; vol. iii., 1836. Contrib. to *Eng. Bot.* (1359, 2562, &c.). Herbarium in part in *Herb. Mus. Brit.* Partly bought by Delessert, Lasègue, 75. Discovered *Carduus tuberosus*, 1813; *Pritz.*, 174; *Jacks.*, 569; *R. S. C.*, iii., 812; *Proc. Linn. Soc.*, i., 137; *Gard. Chron.*, 1842, 271, 439; *Athenæum*, 1842, 1137; Veitch, *Manual of Coniferæ*, 180; Oil portr. by Russell at Linn. Soc. Portr. at Kew. Aylmeria Martius Lambertiana, Sm.; Salix Lambertiana, Sm.

"Langley, Batty (fl. 1729—1808). Of Twickenham. *Pomona, or the Fruit Garden;* illustrated, 1729 (figures by author). *Pritz.*, ed. i., 148.

"Lawrence, Miss Mary (fl. 1790—1810). Of London, *Teacher of Botanical Drawing, A Collection of Roses from Nature*, 1799; *A Collection of Passion Flowers*, 1799—1800; *Pritz.*, 177; *Jacks.*, 142.

Tiptree Hall Farm. — The late Mr. J. J. Mechi's farm, we learn from the *Agricultural Gazette*, is in the market. It seems but the other day that the genial farmer of Tiptree Hall, still enamoured of his lath-floored cattle-boxes, his irrigation, and his thin sowing, was showing us round his beloved domain. And what a cheerful faith the "old man eloquent" had in himself and his theories, in spite of all his misfortunes. It was not farming that ruined him, though he must have lost a good deal by his costly improvements, in spite of his balance-sheets, which partook of his own sanguine character. Tiptree Hall has long ceased to attract attention, but it will always be associated with the bold farmer who attracted world-wide attention twenty years ago.

Sad Accident.—A most distressing accident occurred in the Clyde on the night of Saturday, September 28, when the yacht belonging to Mr. White, of Ardarroch, was run into by a steamer. The captain was saved, but Mr. White's Orchid grower, Mr. R. C. Fraser—who had previously been in the employ of Mr. Measures, at Streatham—and Mr. Hall, a florist of Tulse Hill, were drowned. They had been to see the Orchid collection of Mr. Gair, and were on their return when the accident occurred. Both Hall and Fraser leave widows.

Holland.

DUTCH HORTICULTURAL SOCIETY.

The Dutch Horticultural Society has resolved to follow the example of similar societies in England and elsewhere, and to award at meetings, the date of which will be fixed beforehand, Certificates to growers of products belonging to the vegetable kingdom, flowers, plants, vegetables, and fruits which are remarkable for their novelty or exceptional qualities.

For this purpose, it has formed committees entrusted with the task of examining such products as are submitted to them. One is especially devoted to plants and flowers, another to vegetables and fruits. The third is a scientific committee for the examination of interesting and abnormal peculiarities which may be valuable to botanical science.

Each committee has the right to deliver Certificates of First and Second Class, according to the merits of the products. The meetings will this year be held on October 23 and December 3. W. Baron van Goltstein is the President; H. C. Zwart, the Secretary.

June 27.—First-class Certificates were awarded: 1st to Messrs. Zocher & Co., at Haarlem, for a collection of branches and leaves of new or recently introduced trees and shrubs, among which were the Pinus strobus zebrina, Acer pseudo-platanus atropurpurea, A. negundo aureo-marginata, Viburnum tinus fol. aur. var., Castanea japonica and Kelsey Plum; 2nd, to Messrs. Jac. Jurrissen & Son, at Naarden, for their Cupressus Lawsoniana Westermannii, of very remarkable size and colour; 3rd, to Mr. C. G. Overeynder, at Apeldoorn, for his Dimorphantus mandschuricus fol. aur. var. elegans; 4th, to Messrs. E. H. Krelage & Son, at Haarlem, for their large collection of cut flowers and bulbs, among which there were some Gladiolus Incomparabilis, Madame Blanche Bourdin, and Palmyre; and among the Iris Kæmpferi, the varieties Alexander von Humboldt fl.-pl., Rainbow, with pure white flowers; and Princess.

Second-class Certificates were given:—To Messrs. E. H. Krelage & Son, at Haarlem, for their Albuca Nelsoni, a novelty introduced in 1886; and for the new variety of the Iris Kæmpferi, W. Cochrane, with large and wholly white flowers. The same firm also sent a nearly complete collection of the varieties of the Lilium elegans, and of the Allium sphærocephalum atropurpureum, newly introduced in 1888.

The Zoological Garden of Rotterdam sent some flowering plants of the Cycnoches Loddigesii, Cattleya nobilior, C. gigas, and C. Gaskeliana.

The Scientific Committee.

Messrs. E. H. Krelage & Son, at Haarlem, submitted to the examination of the committee some dormant bulbs of Fritillaria persica. According to a communication from Mr. M. C. Parke, Stretton Hall, Leicester, some bulbs of a species of the Fritillaria commenced to grow after having lain dormant for thirteen years. The committee decided that some of these bulbs should be planted in the Botanical Garden at Amsterdam, in order to ascertain how long their rest would last. The same firm sent a branch of Maclura aurantiaca, which came from Hungary, where that shrub, originally from North America, endures the winter in the open air.

Professor de Vries sent some specimens of Dipsacus silvestris, with stalks distorted in the form of a spire, which abnormal growth had already been perpetuated during three generations.

Floral Committee, September 10, 1889.

First-class Certificates were awarded:—1st, to Messrs. E. H. Krelage & Son, at Haarlem, for their new plants Crocosma aurea imperialis and Nerine excellens, Moore; 2nd, to Mr. J. J. Jansen, gr. to Mr. Beckeringh, at Driebergen, for his new variety of Anthurium, with wholly white spathe; 3rd, to Mr. J. F. van den Berg, at Jutfaas, for his collection of cut flowers of Begonia tuberosa gigantea and of Begonia tuberosa gigantea duplex; 4th, to Messrs. Zocher & Co., at Haarlem, for a collection of Begonia tuberosa, with single flowers and double ones; 5th, to Mr. H. J. van Heyst, at Wyk by Duurstede, for a very interesting collection of Ferns grown in the open air; 6th, to Messrs. Groenewegen & Co., at Amsterdam, for seven varieties of dwarf Canna, with large flowers; 7th, to Messrs. J. Mater & Son, at Leyden, for some plants introduced from Japan.

Second-class Certificates were given:—1st, to Messrs. Groenewegen & Co., at Amsterdam, for four new varieties of Cactus Dahlia, with gigantic flowers; and for a new variety of the autumn Chrysanthemum, Mr. Burrel; 2nd, to Messrs. E. H. Krelage & Son, at Haarlem, for a collection of cut flowers from bulbous and tuberous plants. The same firm sent a collection of cut flowers from varieties of Montbretia and Kniphofia, among which the varieties of Kniphofia aloides grandiflora gigantea (Krelage), and Max Leichtlin were the most remarkable. Among this collection were some cut flowers from the Alstrœmeria peruviana, Ostade (Krelage), remarkable for their red dark brown colour.

Ornamental Plants Committee.

A First-class Certificate was awarded to Mr. K. Wezelenburg, at Hazerswoude, for a new variety of Cupressus Lawsoniana filiformis glauca (Wezelenburg). Second-class Certificates were given:—1st, to the above-mentioned Mr. K. Wezelenburg, for his new Cupressus Lawsoniana Souvenir de Leide; 2nd, to Mr. A. M. C. Jongkindt Coninck, at Dedemsvaart, for his Cupressus Lawsoniana robusta, recently brought into trade, and remarkable for its power of resistance to the winter cold.

Fruit Committee.

A Second-class Certificate was given to Messrs. Booy & Crans, at Elden, near Arnhem, for the Peach Antoinette. This variety is recommendable for its fertility and excellent fruits, and still more remarkable for its volume and its beautiful colour.

Scientific Committee.

The Botanical Garden of Amsterdam sent a Beschorneria multiflora, with a large number of young plants in the inflorescence.

Messrs. Krelage & Son sent some plants derived from seed of Agave filifera, but with different appearance. It is not likely that they are hybrids, as there were no others in the neighbourhood that bore flowers at the same time. *H. C. Zwart, Secretary.*

Berlin.

A rockery is to be constructed in the Berlin Botanic Garden, under the direction of the new Director, Professor Engler.

On Sunday, September 29, M. Jühlke, the Director of the Royal Gardens, at Potsdam, spoke at the grave of the late Director Lenné, and alluded to his work as a landscape gardener. All the parks in the neighbourhood of Potsdam, the Charlottenhof, the Neue Garten, the Pfingstberg, the Marley, and the Nordische Garten, are the work of Lenné, as well as the improvements in the Thier Garten.

On October 1, M. Späth celebrated the Jubilee of the establishment of his nurseries at Rixdorf, one of the largest nurseries in the world, occupying no less than 355 acres.

A novelty in the flower-shops consists in the use of the leaves of Begonia rex, as a substitute for the lace usually employed.

Orchids are gr own here more and more. This may be, in a me asure, due to the auction sales of Messrs. Seeger & Tropp, of London.

A large sale of Palms, &c., by Mr. Winter, of Bordighera, will shortly take place here. Amateurs may then follow the example of Mr. Köhler, at Altenburg, who cultivates in the open air, with slight protection, Palms such as Livistona, Phœnix, Pritchardia, Chamærops, Cocos Weddelliana, Cycas revoluta, various Agaves, and Yuccas.

The Brazilian species of the order Bromeliaceæ have been worked up for the *Flora Brasiliensis* by Dr. Mez. Unfortunately the supply of living species in the Berlin Botanic Garden is small, and Dr. Mez would be grateful for fresh specimens of these plants. *Berlin Correspondent.*

FORAY IN EPPING FOREST.

Following within a fortnight of the Hackney Society, the Essex Field Club held their annual Foray in Epping Forest on Friday and Saturday, September 27 and 28, in search of fungi. The excursion on Friday was taken in the woods north of Epping, and on Saturday around Theydon Bois. The company was not so large as in many of the preceding years, but the weather continued fine and agreeable. This was the tenth annual foray of the Essex Field Club for this purpose, but the soil was so hard and dry, notwithstanding recent rains, that all kinds of fungi were very scarce. The total number of species determined as having been seen during the two days was 138, being less than last year, which also was unfavourable. Although the total was small, it included one species, Paxillus Alexandri, new to the British Islands, and five species additional to the Essex list, viz., Agaricus (Clitocybe) gallinaceus, Fr.; Russula Linnæi, Fr.; R. incarnata, O.; Lycoperdon saccatum, Fr.; and Diachæa leucopoda, Bull.

In the evening, after a substantial tea, the usual meeting was held in a large room at Rigg's Retreat, and when the business matters were disposed of, the exhibition of fungi duly inspected and commented upon, the results of the excursion were detailed by Dr. M. C. Cooke, and comparisons instituted between the Essex list of fungi and those published by other counties, notably that of Herefordshire. The whole number of Agaricini found in Britain now reaches 1335 species, of which 483 have been recorded for Herefordshire, and now about 410 for Essex. This was considered to be a very favourable result, seeing that continuous excursions of four days each have been held by the Woolhope Club for the past twenty years, that a variety of localities have been explored, that a greater humidity and variety of soil characterise the Herefordshire districts, and a larger number of experienced workers have every year been associated with the excursions.

Following upon these remarks, allusion was made to the life and labours of the late Rev. M. J. Berkeley, especially in connection with mycology, and a sympathetic audience listened for some time, with manifest interest, to reminiscences of the twenty-five years of intercourse between the speaker and the deceased.

In conclusion, young and active members of the club, efficient in the use of the microscope, were urged to direct their attention to the microscopic fungi of the forest hitherto almost unknown. It was urged that there were two or three compact groups which might be taken up independently by different individuals, and explored with advantage. Such were the Myxogasters, the Discomycets, and the Uredinous fungi, for all of which handy and recent text-books were available at a cheap rate; so that there was no longer excuse for leaving so many of the minute fungi of Essex without investigation.

A complete and revised list of the larger fungi of Essex has already been prepared, and it is hoped will soon be published, and in the hands of the members. Mr. J. T. Powell also read an interesting paper on "The Existing Flowering Plants of Epping Forest," illustrated by a series of specimens. *M. C. C.*

A CATTLEYA-HOUSE.

The accompanying illustration represents a new Cattleya-house, which has been built for T. W. Hollington, Esq., Forty Hill, Enfield. The structure is 150 feet in length, and 24 feet broad, and is built of Pitch Pine and iron. The bars are 2 feet 6 inches apart, so as to allow plenty of light, and the roof is low-pitched for the same purpose. A feature of the house is seen in Tredon's staging, which Mr. Ayling, the gardener, states "is an economiser of labour, for if filled with water once a day, it keeps a nice moisture about the plants, and at the same time admits of a free circulation of air." The illustration displays the nature of the staging, which holds water in the channels, and allows air to play through the whole of the ridges. Under each of the stages there is a tank for rain-water.

PLANTS AND THEIR CULTURE.

Plants that Flower in the Autumn. — The last few days of September were cold, with frost at nights, and it is well that everything that is tender should be housed forthwith. Where the fruit-houses have to be used for the harbouring of the plants, great care should be taken to see that only clean plants be taken in; especially is this necessary if mealy-bug is known to infest them.

Poinsettias which may be growing in frames will require to be watered with care, or the plants will lose their lower leaves, and others that have completed their growth will require less stimulating food, many plants being often lost by too rich manuring after growth is finished.

We have just removed our plants to a dry and warmer pit, and will use a little more heat in cold weather, but still airing freely. A few of the most forward plants should be introduced into the stove if early effects are desired. Euphorbia jacquiniæflora requires much the same kind of treatment as Poinsettias in regard to watering, and should be put in a sunny position near to the roof glass. Eranthemum asperum should be placed similarly near the light. This plant and E. pulchellum, both good decorative stove plants, have made nice plants from the cuttings that were struck in spring, having been grown in a cool frame throughout the summer months, and they will be given a warmer house in which to bloom.

Plumbago rosea should get a light place near the glass, and it does well tied to strings, and its blooms are more lasting in a cut state when grown in this way. The easily grown Justicias will now be found of service, also Pentas carnea; and to have nice flowering plants young stock is much the best. It can be grown on throughout the summer in frames, the plants requiring but a small amount of attention if watered regularly, and the shoots kept stopped to induce compact growth. Pentas rosea is a useful variety, and should be grown with P. carnea.

The Gesneras, if they have been potted up as previously advised, will now be showing their flower spikes, and will be benefited by occasional watering with weak liquid manure. These plants must be kept free from damp, or their beautiful foliage will soon be disfigured; and they should never be syringed or watered overhead. A few of the strongest plants may be shifted into larger pots, and so form a succession. The late sown Gloxinias now in bloom in a moderately dry house must get full light, and some weak liquid manure twice weekly, and they will continue to bloom freely for some time yet. The blooms last a long time if kept free from damp. *G. Wythes, Sion, Isleworth.*

THE ORCHID HOUSES.

Potting Vanda tricolor, suavis, and insignis.— The present is the best time in which to repot any of the above Javanese Orchids, and to lower any which have become what is called "leggy"—a condition generally due to excessive heat, or some sort of bad cultivation. If repotted in the spring, the flowering season following closely on, together with the hot summer sun, the strain upon the disturbed plants is too great, and degeneration invariably ensues; whereas, if shifted now, the whole of the winter and spring is before them, in which to re-establish themselves before the flowering season. When properly potted and established, Vandas should only be disturbed when actually requiring a shift, for if grown healthily in a suitable temperature, many of them do not require repotting every year, and some may well go two or three years without being disturbed in their pots or baskets. The ordinary garden pot answers well for these plants, as for most other Orchids when otherwise properly treated, and these should be crocked two-thirds of the way up, some of the naked stems and straggling root being worked in during the process of crocking. For surfacing material, good living sphagnum moss is by far the best.

Temperature, however, is the main point; and on the observance of a low temperature more depends than on all the other points connected with growing the Vanda. At no season of the year is a hothouse necessary for these plants, and it may be said that if a night temperature of 55° to 60°, and a day temperature of 65° were observed all the year round, we should hear little of Vandas being difficult to grow. Of course, such a low temperature could not be got in summer, but the nearer to it the better for the plants. In winter, however, it is to be attained, and as that is the season when a high temperature is the most injurious, the observance of the low temperature perfectly meets the case; and the good results, such as we see with Veitch, Williams, Bull, Thomson of Clovenfords, and others, is in that manner to be attained with less trouble than would have to be taken to ruin the plants with heat. The same remarks apply largely to the East-Indian

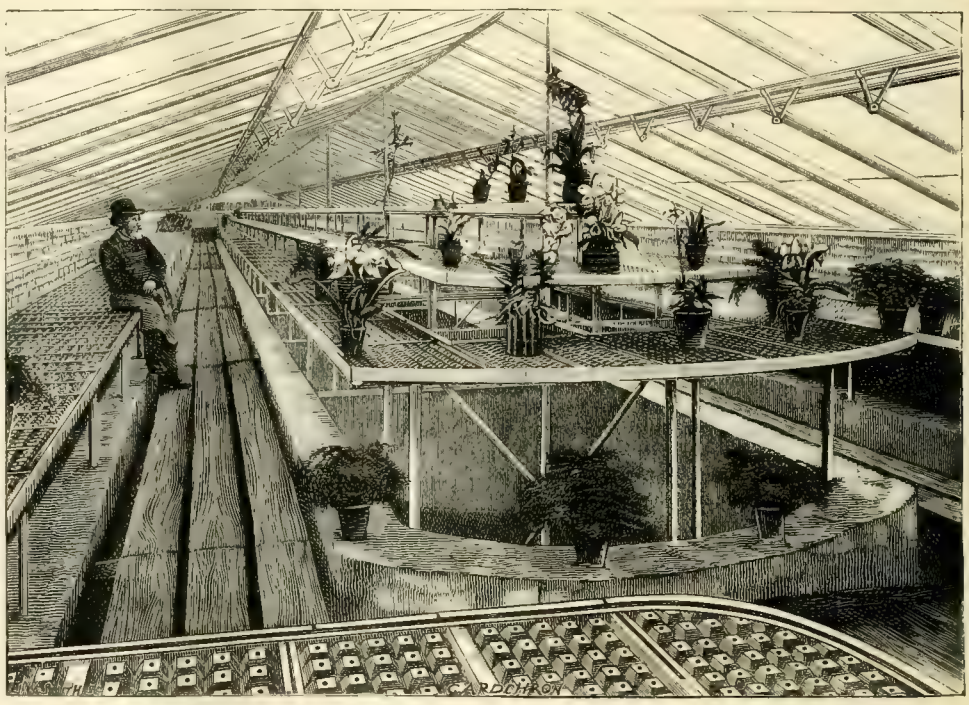


Fig. 56.—Mr. Hollington's Cattleya-house, Forty Hill, Enfield.

Aërides, Saccolabiums, Vandas, &c., in whose destruction a too high winter temperature, especially at night, works nine-tenths of the mischief, which make them the reverse of ornamental in many collections. I have grown the varieties of V. tricolor, &c., to perfection in a temperature which would fall to 40° Fahr., at night; but it is not well to aim at extremes, even if these be on the right side, for differences in the form or aspect of the houses may make what would be a low temperature safe in one house a cause of injury in another. In the matter of water, Vandas like a good watering with rain-water at long intervals, rather than a small quantity frequently. They do not require absolute drying off, but the supply of water should be regulated by the condition of growth indicated by the centre leaves and the tender points of the air-roots when the plant is growing actively, and requiring the largest supply of water; and at other times by the want of evidence of the formation of young leaves and the sealed points of the roots, indicating the season's growth is over, and less water is required. Syringing, or watering overhead should be avoided. Grown cool, few of the Orchids keep freer from insects than do Vandas; and when grown too warm, none become more infested with them, and chiefly by the little hard brown scale—or are more certain to be injured when cleaning them off. The temperatures for October should be:—Warm-house, 70°—75°, by day, 65° at night; intermediate-house, 65°—70° by day, 60° at night; cool-house, 60°—65° by day, 55° at night. *James O'Brien.*

The Flower Garden.

Flowers and the Frost.—Although we have registered as much as 5° of frost, nothing has suffered, owing to the position of this garden, which is high and dry, plants of most kinds being still gay. This circumstance teaches a valuable lesson, namely, that, when arranging plants in beds that are on a low-lying land, and which may be close to a river or lake, care should be taken to use plants of the hardiest description, then, it may reasonably be expected that such plants will continue in beauty quite as long as tenderer plants, in gardens that are higher and drier. Up to the present time the only plants which have faded are Hollyhocks, and these would still be in good blossom, but for the great ravages of the Hollyhock disease. For the past two seasons Hollyhocks have been free from its attacks, and this freedom may be attributed to the greater care that was taken in preparing the station for the plants by deep digging and heavy manuring when digging the ground, and also as a mulching; but this carefulness has not saved them, and again I have decided to discontinue growing them for a time. Change of ground, and of stock, have been tried in former years, but without avail, and the only thing now to be done is to give up growing them for a year or two. I wish those that disparage the cultivation of single Dahlias, could but see these plants here at the present time (October 1); I think the sight would dissipate their prejudices. Shelter, good soil, and an abundant supply of water during the summer months are the essentials necessary for a good display. There is, I admit, a dark side to the picture, and that is that any morning now, we may wake up, and find that frost has settled them; this is, however, true of many other plants besides Dahlias, and preparation for such a collapse should be made forthwith, by labelling all plants requiring it, or rather such as it is intended to save for replanting next year, or for propagation.

Roses.—The long continued drought, and our inability to afford water them artificially, have blighted our hopes of a good autumnal display of Roses, and unfortunately we have much mildew on the plants; hence, as soon as the rain falls in sufficient quantity to ensure the soil working kindly, transplantation of the Roses will at once be commenced. This is the best check which I know of for mildew, and as in our light soil it is necessary to lift the plants and renew the soil in the beds each alternate year, the bloom will be all the finer next year by reason of such early removal. The trouble attendant on the removal of suckers (that are very freely produced in our light soil) from plants grafted on the Brier and Manetti stocks, has caused me to discontinue planting worked plants at all, and hitherto the results have been very satisfactory, there being hardly any variety which fails to do well on its own roots. When replanting is finished, a heavy mulch of some kind of material is desirable, to prevent injury from frost or drought, with a view to inducing the early formation of roots. I give preference to well-decayed manure, pressed down firmly, and over this, for neatness sake, as also to baulk the birds, a thick layer of cocoa-fibre.

General Work.—To preserve the gaiety of the flower beds for the longest period, carefully remove dead flowers and foliage. Take off all the cuttings that are wanted of Pansies and Violas; the small or sucker growths that at this season are to be found in plenty springing from the base of the plants, are those that should be selected, after which lightly peg out the flowering shoots, as these may be expected to continue to flower till the frosts become severe. It is also time that Calceolarias, Gnaphalium, and Leucophyton were propagated; the last-named is perhaps the most beautiful of all white-foliaged plants for summer bedding-out, and one is surprised that it is not more generally planted. I expect one reason is, that it is bad to propagate; or rather, I should say, it is considered to be so, but in reality it is not. It is most impatient of heat, and only cold-frame treatment suits it. The cuttings, when made, are put into one of these, and pass the winter there when struck, with only sufficient covering to keep the mercury above 20°, as a dozen degrees of frost do no harm. Thence they are planted direct to the beds, so that the labour they require is of the smallest. I ought to have said that the cuttings require to be well pressed into the soil, which should consist of two parts loam and one of sand. Arrangements should now be made to get all newly-struck bedding-plants under cover. Pelargoniums, if kept on the dry side, will winter in any light structure from which actual frost is excluded; but most other soft-wooded plants like a little heat, and these we place in vineries, Peach-houses, Pine pits—in fact in any such place that there may be to spare. Layers of choice Carnations and Picotees should be lifted and potted, and afforded a frame till the spring. Pinks are hardier, and will winter out-of-doors. *W. Wildsmith, Heckfield Place, Hants.*

Fruits Under Glass.

Cucumbers for the Winter Supply.—These, where just planted, should have good ventilation, and not an excess of atmospheric moisture, so that the plants may be kept short-jointed—a temperature of 70° by night, and 75°—80° by day, with sun and air, is high enough at this time of the year. Pull off any female or male blooms that may appear, the supply of Cucumbers being kept up from other houses. By removal of flowers now, the strength of the plants is reserved for the winter fruits. Top-dress the plants when the roots appear on the outside of the hills, putting on just sufficient chopped turf to cover the roots thinly. I mention this again, as by an error last month I was made to say, "not too thinly." Afford clear water when the plants require it. Plants in bearing, whether in houses or heated pits and frames, must have the shoots stopped with regularity, the wood and foliage well thinned out, and a genial, moist atmosphere kept up, of 75° by night, and 80° by day, giving manure-water when the plants seem to require it, and a damp down on fine afternoons. I generally keep a few strong plants in pots, and as the late Melons are cleared out of the houses, &c., I plant them in their place, treating them liberally with heat and moisture; these plants bear well till Christmas, when the houses are prepared for their usual occupants.

Pines.—If, as was advised last month, the plants were arranged according to their different ages and sizes, their treatment will be much simplified, and succession fruiting rendered more certain. Suckers may still be potted as they get large enough, and plunged in a bottom-heat of 90° in a moist atmosphere, till they are rooted. Those suckers which were potted last month should now have more air afforded them, so as to keep them dwarf and sturdy, and the temperature of the pit should be gradually lowered, and the atmospheric moisture lessened.

The plants intended for starting early next year should be kept quiet, with a night temperature of 60° to 65°, and 70° to 75° by day with air when the weather is bright. Under these conditions, and with the bottom-heat at 75°, very little moisture will be necessary, and scarcely any water at the root. When well and solidly plunged in the bed, I have kept Pines without water for three months. Any suckers likely to get pot-bound should be shifted into somewhat larger pots, and leaving plenty of space between the plants. A genial growing temperature should be maintained in houses where the fruit is swelling, and the plants should be occasionally syringed on fine bright days, and the paths and the plunging material between the pots damped down. Manure-water may be afforded the plants when required. That made from deer or sheep dung with a little soot-water added, is very good. A day temperature of 80° to 85° with sun-heat, closing up early; and a night temperature of 70° to 75° and bottom-heat 90°, will be suitable. Fruit beginning to ripen should be kept in a dry and airy house and fully exposed to the sun, so as to secure excellence in flavour and colour. Very little water should be given the plants. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Transplanting and Root-pruning.—This being the best month of the year for the above kind of work, it should be pushed on with all dispatch, so that it may be brought to an end before the whole of the foliage falls from the trees. Those trees which may be growing with too great vigour to be fruitful, and which may not have been planted a long time, should have a trench opened around them at a distance commensurate with their spread of branches. If this be large, so should the distance from the stem, so as not to cut through important roots. Keep a clear trench, so as to be enabled to undermine the roots, and cut off, or bring up all roots trending downwards. Let all cuts be made clean, so that healing may readily take place. If the soil be good enough, no fresh material or manure need be employed, but when the work of lifting the roots is done, the staple may be returned over them. In lifting large trees, the roots should be brought up at various depths, and some may be placed as near to the surface as 8 inches, and some moderately enriched soil should be placed about them. In some cases of too vigorous growth, the roots of Peaches, Nectarines, and Pears, may be lifted, and entirely replanted; but when the trees are large ones, it is preferable to perform the work of lifting piecemeal, that is, one half of the roots may be disturbed this season, and the rest next autumn. After the roots have been covered, and the soil tramped to a moderate degree of firmness, it should have a thorough watering; and should the weather be bright and warm, the trees may be syringed daily.

Fruit gathering and storing will now require almost daily attention. Very late varieties of Apples and Pears will be better left hanging so long as the weather will permit. When gathering, care must be taken to prevent the bruising of the fruit; and the small fruits should be kept separate from the finest. Store Apples in a cool place where the temperature is regular—and the cooler the better, so long as frost does not enter the place. Pears must be kept somewhat warmer, otherwise the flavour will be poor. *H. Markham, Mereworth Castle, Kent.*

The Kitchen Garden.

Potatos.—Look over the stores of sets and remove all decayed tubers. All Potatos should now be removed from the ground. Prior to lifting, the stems should be all pulled up, and carefully burnt to destroy any germs of disease. Choose dry weather for lifting and storing if possible. Potatos in full growth should have frames or other protection placed over them for another month or six weeks, as the drier the soil is now kept around the tubers, the better will be their quality.

Cauliflowers and Autumn Broccoli.—Means must now be taken to protect these crops in case of a sharp frost. A very little bracken or litter will be sufficient to protect them from 10° of frost; or the leaves of the plant may be gathered up and tied up over the head. Only this method entails a good deal of labour, and the heads are not open to inspection. Where too many are turning in at once they may be lifted, and hung head down in a dry shed with all the soil possible still adhering to the roots. Young plants should now be got in under handlights. The handlights, if 2 feet square, will hold four plants for remaining permanently, and five for removing and planting out in the spring. Prick out later sown batches into cold frames, 3 inches apart each way. *W. M. Baillie, Luton Hoo, Luton.*

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

THE SWEET PEA.—What is there so pretty to look at and of such delightful perfume, as the Sweet Pea, and when arranged in a vase with its own foliage, it is both useful and greatly appreciated. From the early part of May up to the present time our Sweet Peas have been covered with bloom. To prolong their flowering season, the usual plan is to sow in succession, but for several seasons past I have successfully adopted a different plan. About six weeks ago we clipped the rows with the garden shears, just as any one would a hedge, and the result was so good, that, I am sure it is well worth the doing by any one who, like myself, has to meet a large demand for fragrant flowers. The rows to-day (September 17), are covered with healthy foliage, flowers, and flowerbuds, and I hope to continue gathering flowers for some weeks to come. *P. Spye.*

THE FRUITERERS' COMPANY.—At the City Mansion House last week, there were great functions performed by this Company, a very costly offering of fruit being laid at the feet of the Lord Mayor, as some sort of tribute for municipal favours. It was whispered to me by one who was there, very much as though it were a terrible secret not to be told in Gath, but still as evidence of the noble patriotism of the Fruiterers' Company, that the whole of the fruit was of home growth. No doubt Lord Mayor Whitehead, who is favourable to the extension of fruit culture at home, regarded this rigid exclusion of all foreign fruit as a compliment; but the new Lord Mayor, oddly enough, whilst a member of the Company, is one of the largest dealers and brokers in foreign fruits in the city, and next year the present will hardly assume to Sir Henry Isaacs the form of a compliment, but would rather be a rebuke to him were the customary gift limited to home-grown productions. The cheap patriotism of to-day would be esteemed narrow or insular exclusiveness then, and merely so because the city of London is the greatest commercial centre of the world, and thrives in common with the rest of the kingdom on our commerce with the whole world. It may be patriotic to help improve our home supplies of fruit, but it would be absurdly unpatriotic to endeavour in declining to consume foreign fruits to cripple that commerce on which at present lingers the prosperity of the community. Were it not for foreign fruits, millions of our people would hardly know the taste of fruit. That so much comes from abroad should lead us to rejoice that so much of wholesome pure food is available and cheap for the masses, whilst it should also stimulate us to beat the foreigner, if possible, by growing better at home. *A. D.*

GLADIOLI.—There is a difference which I should like to point out between the plants raised by Mr. Leichtlin and those exhibited by me. Mr. Leichtlin crossed G. Saundersianus with some varieties of G. Gandavensis, and obtained a large collection of seedling varieties, giving tall vigorous spikes of large flowers, which were not distributed to the trade, but which went to a French nurseryman, who sold them to a large American firm, after having offered them to English specialists. The Gladioli which I called Nanceianus, were raised from a cross between the same G. Saundersianus and the most hardy and the most blotched varieties of the Lemoinei series. In this way I retained the fine spotting and markings of the Saundersii section, adding greater brilliancy as well as hardiness. *V. Lemoine, Nancy.*

INTERMEDIATE-HOUSE CLIMBERS.—You were kind enough, two or three weeks ago, to answer some inquiries of mine about climbing plants for an intermediate-house, and, in giving me a list, you said, none would do well in pots. I am, therefore, arranging a border for them, but I should like just to say that at Weston Birt, Mr. Holford's place near here, where the gardens are amongst the finest in the country, and where there are between thirty and forty different houses full of the choicest plants, all in the most exquisite order, I see many climbers, and amongst them several Bougainvilleas (which I cannot get to grow properly), growing in the most luxuriant manner, and of large size, full of flower, and the picture of health, in pots of about 16 or 18 inches diameter at the top of the pots; and the gardener, Mr. Chapman, tells me that he has no difficulty whatever in growing them in that way. *E. C. L.*

THE EMBLEMATICAL FLOWER OF THE U.S.A.—I note that the American florists at their meeting discussed the question of a "national flower." Does that refer to a national emblem similar to the Shamrock, Rose, and Thistle? [Yes.] I was surprised to see the panicled Phlox advocated; that would be shockingly tame for a go-a-head nation like America. I would suggest the Kentucky Hemp as a better; its affinities to our Nettle would afford such men as Mark Twain the opportunity of making a good joke out of other nationalists, by referring to its virulent properties, and also its utility for lynching. Perhaps these remarks are quite irrelevant, as the reference does not, presumably, refer to a national emblem at all. What are the floral emblems of the various European nations? Perhaps someone will mention them through the pages of the *Gardeners' Chronicle. R. W. M.*

NARCISSUS TAZETTA.—I send a bloom of Narcissus tazetta, "Scilly white," grown in the open air at Mr. Bagwell's, Eastgrove, Queenstown Harbour, the bulbs having actually flowered twice within this year, 1889. What a whiff of spring it has got about it, and I do not think in all London you could match it. *W. B. Hartland, Cork.*

CHISWICK GARDEN.—May I take up an inch of your valuable space with the following inquiry?—Are "mail-carts," and the noisy children who delight in them, absolutely essential to the interests of horticulture? Unless this be so, I cannot understand why they should be allowed to career wildly about in the gardens of the Royal Horticultural Society at Chiswick, to the detriment of the lawns and gravel walks, and to the discomfort of all quiet visitors. *Misanthrope.*

MADDOCKS' KILL WASP.—Maddocks' Kill Wasp is one of the long looked-for friends to gardeners, in fact, no gardener ought to send for his seeds without sending for some bottles of Kill Wasp, as the size of the garden may seem to require. The foreman here has taken bushels of wasps this season with six bottles, and I was obliged to purchase six more, as we are still finding many strong nests. In using the fluid you have only to find their hole, and pour in about a third of a small wine glass, and it will destroy, without fail, the wasps in the strongest nest. *Chas. Penny, Sandringham.* [Mr. Maddocks should advertise his wares. Ed.]

AUTUMN TINTS.—Many deciduous trees and shrubs are now assuming beautiful colours, consequent on the bright sunshine of the past summer. The hardy American Azaleas are extremely beautiful in their colouring of red, bronzy-red, yellow, &c. The wild Cherry, several Maples, Beeches, and last, but not least, the common Bracken (Pteris aquilina), now fast turning yellow and brown, forms a capital groundwork for all. For decorative purposes these coloured leaves are most effective, especially those of the Azalea, where branches may be used in large vases with excellent effect. For church decoration they come in useful on harvest festival occasions, making very pretty wreathing intermixed with wild Clematis, small pieces of the yellow Bracken, berry-bearing sprays of Sweetbrier, Dog-rose, &c., and in various other ways. *C. H. D.*

RECENT FROSTS.—The unexpected arrival of frost on the night of the 16th ult. caused considerable commotion among the nurserymen, florists, and growers for market, in this district (south-west Middlesex). On the morning of the 17th ult. I registered 9° of frost, while on the two following days there were 7° and 2° respectively; each night since the thermometer has fallen to freezing-point, or slightly below, and on the morning of September 23 there was nearly 4°, with a keen air. Many things, in consequence, are a total wreck. I may remark that young Cabbage plants from July-sown seeds have the appearance of having been boiled; the leaves of some autumn Giant Cauliflower, in a market garden near, have similarly suffered. No wonder, then, that such things as Tuberoses intended for late work, with Chrysanthemums, are quite ruined. Of the latter I had several hundreds of Boule de Neige, handsome plants in pots, occupying several beds, which were frozen hard and stiff; but, strange to say, the whole lot, excepting about two dozen, appear to be unharmed; while others, more advanced, and with firmer wood and plump buds, have all the latter blackened. Tomatos out-of-doors, late Peas, Vegetable Marrows, Scarlet Runners, and all such, were entirely destroyed by the first frost. Lilies of the speciosum section are also sufferers. But even here it does not appear to be generally felt, for I have seen both Dahlias and Scarlet Runners as fresh and green as ever; and in the neighbourhood of Teddington, I hear, no damage at all was done; while within 200 yards of where I write, ice the thickness of a penny was taken from a rain-water butt on the morning of the 17th ult. *J.*

FREESIA REFRACTA ALBA.—From seed sown in March, we have now a small batch of these sweet-scented bulbous plants nicely in flower, and coming late in the season they are doubly valuable. They are very little trouble to grow. The seeds were sown in pans of rather light sandy soil early in March, and pricked off into small 60-sized pots as soon as large enough to handle, and kept rather close for a time, until fairly rooted, when they were transferred to a cold frame, and afterwards shifted into 4 and 5-inch pots, using fibry loam, leaf soil, and a little sand for the potting soil, care being taken not to water them too much before getting established. By this simple mode of treatment, useful pots of bulbs may be had in bloom during August and September. *H.*

NEW VARIETIES OF POTATOS.—The Vegetable Conference brought into notice some thirty or more seedling Potatos, samples of which were cooked and tested by the members of the General Committee, and others acting as censors, and to all those which received three marks for quality, Certificates of Merit were given. Of course, in this case, the awards could be made only for cooked quality. The names of the favoured varieties have been, or will be, published. A much larger number received two marks only, and these in some cases were excellent, but needed just a little more of cooking, hence suffered in the estimation of the tasters. Specially did some suffer, because the tubers having been exposed in the strong light of the conservatory for a couple of days, had become greenish, and the bitterness or astringency thus created, was boiled into the flesh, the skins not being removed. It may be that of those thus given two marks were some of the most prolific and best disease-resisters of the whole batch; but, of course, that could not well be ascertained. The small number which received one mark only, shows that we are now producing few bad Potatos. The labour of cooking so many tubers of divers kinds at once, is necessarily difficult, and as new sorts vary in the time needed to cook them perfectly, and it is not easy to have all well served, at the same time. Strong-growing Potatos often, too, have stronger flavour in the skins, and it is always important that the skins should be removed before the boiling, as the astringent taste saturates the flesh. Potatos properly peeled and boiled or steamed are a long way superior in quality and in dryness to those boiled in their coats; they are softer, sweeter, and freer from strong tastes. In the cooked Potato competitions which are met with sometimes at flower shows, the best tubers are invariably those peeled before cooking, whilst their appearance is far more taking than is that of those cooked in their brown astringent coats. *A. D.*

DEEP CULTIVATION.—The importance of deep stirring of land for the cultivation of most garden crops can scarcely be over-rated, as with it the feeding area of roots must of necessity be limited and circumscribed, for as soon as they pass through that which has been simply dry, they find a hard bottom through which they cannot pass; or if they do manage to penetrate it, they find but little or no nourishment for them there, the breaking up being requisite to make it a storehouse, as it were, by letting in air to the soil, and thus fitting it to absorb and take up the juices washed from above. These it is that give staying power to land, for without deep working of it we may have a rich top spit and a very poor subsoil, and plants that go off with a rush, and make quick growth at first, are pulled up sharp and stopped in their progress directly dry weather sets in. This is only too apparent in many kitchen garden crops during summer, when they cannot get down, as may be seen by the way in which they flag, which checks growth, thus reducing bulk, and spoiling tenderness and succulency by hardening the tissues and impairing the flavour. The depth at which ground should be broken up depends much on

its condition, and what it is intended to grow on it, as some soils will bear deep trenching and stirring, whilst others will not; and if fruit trees or bushes or Asparagus are to be planted, it is quite safe to go deeply down, and bring a good portion of the bottom spit to the top, but in a general way this should only be done piecemeal, as when much of it is brought to the surface, seedling plants will scarcely grow in it, and often die outright before their roots have found their way through it into better soil. For trees, Raspberries, fruit bushes, and Asparagus, the case is different, as these are planted at some depth below the surface, and are independent, in a great measure, of the hungry stuff, and they therefore form excellent preparers of the land for other crops, the inert soil in a few years becoming aërated, and made friable by cultivation and manuring. Onions require considerable depth of soil, and are benefited by having plenty of manure worked in below the surface, and if root crops, such as Beet, Carrots, and Parsnips, get any manure at all, that is where it should be placed, but for these I like to dig in a good dressing of soot instead of manure, as everything depends on having their taproots free from obstruction. For all the Brassicas, except Broccoli, and for Peas and Scarlet Runners, trenching is almost a necessity, for, unless the soil is naturally deep and fairly porous, these plants will not do well in dry summer. Broccolis having to stand the winter are best in hard ground, as then a firmer growth is made, and they bear hard frost better when their stems are solid than they do if these and the leaves are sappy. *J. S.*

SOCIETIES.

ROYAL HORTICULTURAL.

Sept. 24.—The meetings of the Committees were held in the Gardens at Chiswick, on Tuesday, the first day of the Vegetable Conference, referred to last week. The chief interest being centred in the Vegetable exhibition, there was little to be attended to at the committees, and the report of their proceedings was unavoidably held over from our last issue for want of space.

Floral Committee.

Present: W. Marshall, Esq., in the Chair, and Messrs. R. Dean, L. Castle, H. Cannell, B. Wynne, G. Paul, J. Walker, E. Hill, S. Hibberd, and F. Moore.

The chief object of notice was a collection of tuberous Begonias, exhibited by Messrs. H. Cannell & Sons, Swanley, Kent. There were both single and double varieties in delicate tints. The plants had been raised from seed sown in February last. Several of the varieties have already received notice in these columns, but of novelties, certificates were awarded to Mrs. Moens, orange-red, single, slightly cupped, round in outline; and to Frank Beadle, bright deep scarlet, also a single flower, both of good substance. Mr. Cannell also had Pelargonium Black Vesuvius, stated to be a sport from Vesuvius, it has foliage of a very dark copper-brown colour. It was referred to Chiswick for trial.

A few plants of zonal Pelargoniums were shown by Messrs. Lemoine, Nancy, France, and by Mr. J. R. Pearson, Chilwell, Notts, who had Chas. Mason, rich scarlet, good truss, and fairly large petals; and Radlea, a large truss, deep scarlet.

Mr. G. Stevens, St. John's Nursery, Putney, had Japanese Chrysanthemum Comte Horace de Choiseuil, a reflexed form, white, with a pale yellow centre; petals broad.

A seedling of Adiantum macrophyllum came from Messrs. T. & J. Rogers, Fern Bank Nursery, Lodsworth, near Petworth; it showed yellow splashings on the pinnules, but whether it will prove constant, is a question. A plant of Cypripedium Lawrenceanum was also sent.

From the Royal Exotic Nurseries, Chelsea, Messrs. J. Veitch & Son, sent a box of cut trusses of bloom of greenhouse hybrid Rhododendrons. A novelty was seen in Virgil, a large truss, bearing its flowers up well; its colour is rich creamy yellow, and the lobes of the corolla are somewhat bullate. The stamens are red, and there is the faintest trace of the same colour at the orifice of the tube. A plant of Cyrtanthus sanguineus—a very distinct species, and the most showy of its section, was sent by the same firm; it is a native of the Transvaal districts, and was first introduced in 1860. The entire plant is about 1 foot in height, the flowers bright red, 3 inches long, expanding in the upper portion; stamens set in one series in the orifice; segments of perianth ovate, borne on a slender green terete peduncle. The leaves are very narrow—about three quarters of an inch, and 1 foot in length, of a bright green colour. The plant shown bore two flowers.

Mr. R. Maher, Yattenden Court, Newbury, sent half a dozen sports from Mrs. Hawkins, Cactus Dahlia. Meteor was a peculiar dark orange-red flushed scarlet; Evening Primrose, pale yellow; Sappho, orange-scarlet; and Royal Academician, crimson-lake.

Fruit Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. A. H. Pearson, P. Crowley, W. Warren, J. Burnett, J. McIndoe, W. Denning, J. Wright, P. Barr, W. Bates, J. Hudson, G. Wythes, H. Balderson, J. Smith, W. Wildsmith, J. Willard, J. Cheal, Ch. Ross, G. W. Cummins, M. Dunn, and F. Q. Lane.

Messrs. H. Lane & Son, the Nurseries, Great Berkhamsted, sent some well cultivated pot Vines, bearing excellent bunches of fruit, which make very decorative subjects, the varieties being Alicante, Black Hamburgh (two), Foster's Seedling, and Gros Maroc. Seedling Melons were contributed by Messrs. Palmer, Miller, and C. J. Waite, but were of no special merit; and a collection of well grown Apples and Pears came from Mr. Ch. Edwards, Newton House, Bickley. New Hawthornden and Cox's Orange Apples, and Madame Treyve and Pitmaston Duchesse Pears were conspicuous, and Mr. Scott, Merriott Nurseries, Crewkerne, Somerset, sent an extensive lot of creditable examples of favourite Apples. A new Brussels sprout from Mr. McIndoe, Hutton Hall, Guisborough, was submitted. It was referred to in the report of the Vegetable Conference.

Awards were made as follows:—

By the Floral Committee.

First-class Certificate.

To Cyrtanthus sanguineus, from Messrs. J. Veitch & Sons.

Awards of Merit.

To Rhododendron Virgil, from Messrs. J. Veitch & Sons.

To Begonia Mrs. A. Moens, from Messrs. H. Cannell & Sons.

To Begonia Frank Beadle, from Messrs. H. Cannell & Sons.

Medal.

Silver Banksian for a group of Begonias, from Messrs. H. Cannell & Sons.

By the Fruit Committee.

Medal.

Silver Banksian for Vines in Pots, from Messrs. H. Lane & Son.

National Vegetable Conference.

In addition to the list of Certificates of Merit published last week, the following were also awarded:—

To Marrow Moore's Cream, from Messrs. R. Veitch & Sons.

To Marrow Hibberd's No. 1, from Royal Horticultural Society.

To Marrow Long White Bush, from Messrs. Vilmorin, Andrieux & Co.

To Marrow Pen-y-Byd, from Mr. J. Muir.

To Gourd (specimen), from Royal Horticultural Society.

To Squash Yokohama, from Messrs. Vilmorin, Andrieux & Co.

To Tomato Ham Green Favourite, from Royal Horticultural Society.

To Tomato Advancer, from Royal Horticultural Society.

To Tomato Golden Queen, from Royal Horticultural Society.

To Tomato Ham Green Favourite, from J. Veitch & Sons.

To Tomato Golden Queen, from Messrs. J. Veitch & Sons.

To Tomato Tennis Ball, from Royal Horticultural Society.

To Tomato Perfection, from Mr. W. Poupart.

To Tomato Perfection, from Mr. R. Dean.

To Endive Broad-leaved Batavian, from Messrs. Vilmorin, Andrieux & Co.

To Endive Improved Round-leaved Batavian, from Messrs. Vilmorin, Andrieux & Co.

To Parsley Myatt's Curled, from Mr. R. Dean.

To Witloef Chicory, from Messrs. J. Veitch & Sons.

To Turnip Snowball, from Messrs. J. Veitch & Sons.

To Carrot Early very short French Horn, from Messrs. Vilmorin, Andrieux & Co.

To Carrot Red Intermediate, from Mr. J. Lye.

To Carrot Sutton's Early Gem, from Mr. J. Lye.

To Carrot Long Red St. Valery, from Messrs. Vilmorin, Andrieux & Co.

To Carrot Carter's Scarlet Perfection, from Mr. W. Chettleburgh.

To Parsnip Improved Hollow-crowned, from Messrs. J. Veitch & Sons.

To Parsnip Hollowed-crowned, from Mr. W. Poupart.

To Salsafy, from Mr. R. Smith.

To Celery Aylesbury Prize Red, from Mr. H. Deverill.

To Pea Ne plus Ultra, from Mr. J. H. Goodacre.

To Pea Carter's Stratagem, from Mr. J. H. Goodacre.

To Bean Ne plus Ultra, from Mr. H. Deverill.

To Bean Canadian Wonder, from Mr. G. Wythes.

To Bean Mohawk, from Mr. G. Wythes.

To Bean Jubilee Runner, from Mr. C. J. Waite.

To Beet Cheltenham Green-top, from Messrs. Harrison & Sons.

To Beet Cheltenham Green-top, from Mr. W. Poupart.

To Beet Cheltenham Green-top, from Mr. F. Taylor.

To Beet Cheltenham Green-top, from Mr. G. Wythes.

To Beet Middleton Hall Favourite, from Mr. H. Deverill.

To Beet Carter's Turnip-rooted, from Messrs. J. Carter & Co.

To Carrot Guerande, from Messrs. Vilmorin, Andrieux & Co.

To Carrot Sutton's Gem, from Mr. J. Lambert.

To Pepper Capsicum Golden Queen, from Messrs. Vilmorin, Andrieux & Co.

To Pepper Capsicum Large Bell, from Messrs. Vilmorin, Andrieux & Co.

To Chou de Burghley, from Mr. R. Gilbert.

To Cabbage Early Flat White Drumhead, from Messrs. J. Veitch & Sons.

To Cabbage Hardy Green Colewort, from Mr. W. Poupart.

To Cabbage Rosette, from Mr. W. Poupart.

To Cabbage Dutch Red, from Mr. R. Gilbert.

To Savoy Dwarf Green Curled, from Mr. W. G. Gilbert.

To Kale German Dwarf Scotch, from Mr. H. Hanan.

To Kale Green Dobbie's Selected, from Messrs. Dobbie & Co.

Potatos.

To Hughes' Perfection, from Mr. J. Hughes.

To Sutton's Reading Russet, from Mr. J. Hughes.

To Sutton's Reading Ruby, from Mr. E. S. Wiles.

To Prolific, from Mr. E. S. Wiles.

To Reading Giant, from Mr. E. S. Wiles.

To Sutton's Magnum Bonum, from Mr. E. S. Wiles.

To The Dean, from Mr. J. Lye.

To Beauty of Hebron, from Mr. J. Lye.

To Edgcote Early, from Mr. E. S. Wiles.

To Edgcote Beauty, from Mr. E. S. Wiles.

To Carter's King of Russets, from Messrs. Carter & Co.

For any new named seedling, six tubers, to be supplied for cooking:—

To Conference, from Mr. R. Dean.

To The Gentleman, from Mr. R. Maher.

To Victorious, from Mr. T. Laxton.

To The Cottager, from Mr. R. Maher.

SCOTTISH HORTICULTURAL ASSOCIATION.

The ordinary monthly meeting of this Association took place in 5, St. Andrew Square, Edinburgh, on the 1st inst., Mr. James Greive, Pilrig Nurseries, in the chair. Mr. P. H. Fairgreive, Dunkeld Gardens, read a paper on the "Cultivation of Hardy Stone Fruits." The paper dealt with the subject in a thorough practical way, and covered in a succinct manner the whole ground.

There were some very interesting exhibits tabled. From Mr. Henry Reynard, Ardenclutha, Hamilton, came a very notable double-flowered tuberous Begonia, salmon-rose in colour, remarkable for the enormous size of the flowers, about 4 inches across,

and their perfect Rose-like symmetry. To it was awarded a First-class Certificate. Mr. John Downie also exhibited numbers of single flowered tuberous Begonias, which were much admired, including two which were remarkable for their whiteness and substance of the flowers. Mr. Henderson, Clerwood Corstorphine, exhibited some excellent blooms of Chrysanthemum Sam Henshaw. From Mr. Steward, The Gardens, Brayton Hall, Cumberland, came two fine specimens of cones of Cycas circinalis, each cone being about 14 inches long. The same exhibitor also sent excellent samples of Dumelow's Seedling and Warner's King Apples. Messrs. Methven & Sons set up fine samples of Chrysanthemum blooms, L'Africaine, Baronne de Prailly, Charles Wagstaff, Madame Lacroix, and Duchess of Buccleuch being the most meritorious flowers. To the last-named was awarded a First-class Certificate. It was the first bloom that had been exhibited in this country. The variety was raised at Dalkeith from seeds received by Mr. M. Dunn from Mr. G. McClure, of New York. It belongs to the Japanese section, and is of great size and substance, and very distinct, the colour creamy-white.

The Secretary, Mr. Robertson Munro, adverted to the peculiarly melancholy death of Mr. Fraser, gardener at Ardarroch, Garelochhead, and a member of the Association. It was resolved that the Association should send a letter of condolence to Mrs. Fraser, and also to Mr. White.

Law Notes.

ACTION FOR SEEDS.

In the City of London Court on Saturday, before Mr. H. Eardley-Wilmot, the Deputy Judge, the case of Legerton *v.* Harrison was tried. The plaintiff, Mr. Alfred Legerton, wholesale seed merchant, of 5, Aldgate, E.C., sought to recover the sum of £3 17*s.* 9*d.* for seeds supplied to the defendant, Mr. Richard Harrison, retail seed merchant, of 77, Halbeck Lane, Leeds.

Mr. E. B. Tattershall appeared for the defendant.

The plaintiff said for some years he had supplied seeds wholesale to the defendant, who retailed them in Leeds. In August last year the defendant asked him to send in a special list of prices for competition with other firms, which he did. Amongst them were two items of Peas, McLean's Little Gem being quoted at 16*s.*, and American Wonder at 18*s.* These prices the defendant accepted, but the next day—August 22—the plaintiff telegraphed the defendant, "present price of Little Gem, 1 guinea; American Wonder, 30*s.* All Peas rising fast." The following day he sent him another message, "My offer only open for reply by wire to-day; prices rising, panic prevailing." The defendant's reply was that he accepted the plaintiff's offer, and during the season several parcels of seeds were ordered and delivered, including the Peas in question, amounting in all to £48. When the account was sent in, the defendant said he did not accept any other than the plaintiff's offer in his estimate, and accordingly refused to pay, this action being brought.

The defendant said he gave several orders for the Peas in dispute, and did not rectify the mistakes in the invoices, because it was customary in the seed trade to make all corrections at the end of the season when the final statement was delivered.

The learned Deputy Judge was of opinion the plaintiff's prices as increased in the telegrams were accepted by defendant, because he did not repudiate them. He must therefore find for plaintiff, and gave judgment accordingly, with costs.

The Weather.

THE PAST WEEK.

The following summary record of the weather for the week ending September 30, is furnished from the Meteorological Office:—

"The *weather* has continued in an unsettled condition over Scotland, the greater part of England, and in the north of Ireland, but in the south of Ireland and at some of the south-western English stations it has been fair. Over the eastern parts of England the rainfall has been heavy.

"The *temperature* has again been below the mean in all districts, the deficit having ranged from 1° in 'Ireland, S.,' to 4° in 'Scotland, N.,' and to 5° in 'England, E.' The highest of the maxima which were generally recorded on the 27th, varied from 61° in the north and west of Scotland and the north of Ireland to 67° in 'England S.' The lowest of the minima were registered during the earlier days of the period, and varied from 28° to 33° in Scotland, from 34° to 35° in Ireland, and from 31° to 35° over England. In the 'Channel Islands,' the lowest reading was 43°.

"The *rainfall* has been more than the mean in 'England, E.,' and 'England, N.W.,' and about equal to it over north-eastern England, and the north of Ireland, but in all other districts it has been less; over the south-west of England, the south of Ireland, and in the 'Channel Islands,' the fall has been very slight.

Bright sunshine has been less prevalent than it was last week in nearly all places, the percentage of the possible amount of duration having ranged from 18° in 'England, E.,' and Scotland, N.,' to 32° in 'England, N.W.,' 41° in the 'Channel Islands,' and 42° in 'Scotland, W.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending September 30.	Accumulated. Above 42°, for the Week.	Accumulated. Below 42°, for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1889.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1889.	Rainfall. Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	4 —	35	7	+ 172	+ 10	2 —	180	30.1	18	23
2	3 —	42	4	— 3	+ 12	4 —	145	19.4	23	30
3	3 —	48	0	— 8	+ 11	0 av.	133	17.6	23	28
4	5 —	55	0	— 37	+ 120	9 +	138	20.1	18	32
5	3 —	55	0	— 34	+ 67	3 —	128	21.7	25	30
6	3 —	69	0	+ 8	+ 75	1 —	129	17.6	26	32
7	3 —	49	0	+ 33	— 22	4 —	153	29.5	42	32
8	3 —	60	0	+ 34	— 1	1 +	139	23.2	32	31
9	2 —	73	0	— 66	+ 87	9 —	138	24.3	29	36
10	2 —	61	0	+ 37	— 53	0 av.	171	28.1	28	27
11	1 —	78	0	+ 11	— 14	8 —	151	26.3	31	33
12	2 —	92	0	+ 91	— 16	7 —	144	18.1	41	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

Markets.

COVENT GARDEN, October 3.

Trade very quiet; no alteration. *James Webber, Wholesale Apple Market.*

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beans, Fr., per lb.	0 4	—	Mushrooms, punnet	2 0	—
Beet, red, per dozen	1 0	2 0	Mustard and Cress, punnet	0 4	—
Carrots, per bunch	0 6	—	Onions, per bunch	0 5	—
Cauliflowers, each	0 3	—	Parsley, per bunch	0 4	—
Celery, per bundle	1 6	2 0	Peas, per quart	1 3	—
Cucumbers, each	0 6	0 9	Shallots, per lb.	0 6	—
Endive, per dozen	2 0	—	Spinach, per bushel	2 6	—
Green Mint, bunch	0 4	—	Tomatos, per lb.	0 9	—
Herbs, per bunch	0 4	—	Turnips, per bunch, new	0 5	—
Leeks, per bunch	0 3	—			
Lettuce, per dozen	1 6	—			

Potatos are about the same price as previously quoted. Trade better. *J. B. Thomas.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	5 6	Peaches, per doz.	4 0	8 0
Cobs, per cwt.	100 0	—	Pine-apples, Eng., lb.	1 6	3 0
Filberts, per lb.	0 10	—	— St. Michael, each	2 0	6 0
Grapes, per lb.	0 6	2 6	Plums, ½-sieve	2 6	5 0
Lemons, per case	21 0	45 0			

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ferns, in var., doz.	4 0	18 0
Asters, per dozen	4 0	8 0	Ficus elastica, each	1 6	7 0
Begonias, dozen	4 0	12 0	Foliage plants, various, each	2 0	10 0
Chrysanth., dozen	6 0	10 0	Fuchsias, dozen	3 0	6 0
Cyperus, per dozen	4 0	12 0	Hydrangea, per doz.	9 0	18 0
Dracæna terminalis, per dozen	30 0	60 0	Marguerites, doz.	6 0	12 0
— viridis, per doz.	12 0	24 0	Mignonette, doz.	3 0	6 0
Ericas, various, doz.	8 0	18 0	Palms in var., each	2 6	21 0
Euonymus, in var., per dozen	6 0	18 0	Pelargoniums, scarlet, per dozen	2 0	4 0
Evergreens, in var., per dozen	6 0	24 0	Solanums, per dozen	6 0	12 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Marguerites, 12 bun.	3 0	6 0
Asters, English, bun.	4 0	8 0	Maiden Hair Fern, 12 bun.	4 0	9 0
Bouvardias, per bun.	0 6	0 9	Mignonette, 12 bun.	1 0	4 0
Calla æthiopica, 12 bl.	3 0	6 0	Pelargoniums, 12 spr.	0 6	1 0
Camellias, 12 blooms	3 0	6 0	— scarlet, 12 spr.	0 3	0 6
Carnations, 12 bun.	4 0	9 0	Primulas, double, 12 sprays	0 9	1 0
— 12 blooms	1 0	2 0	Roses, Tea, per doz.	0 6	1 6
Chrysanth., 12 bun.	3 0	9 0	— coloured, dozen.	2 0	4 0
Chrysanth., 12 blms.	0 6	3 0	— red, per dozen	0 4	1 0
Cornflowers, 12 bun.	1 0	3 0	— Safrano, dozen	0 6	1 0
Dahlias, 12 bun.	2 0	4 0	Stephanotis, 12 spr.	3 0	6 0
Eucharis, per dozen	3 0	6 0	Sunflowers, various, per 12 bun.	3 0	6 0
Gaillardias, 12 bun.	2 0	4 0	Sweet Sultan, 12 bun.	3 0	4 0
Gardenias, 12 blooms	2 0	4 0	Sweet Peas, 12 bun.	2 0	4 0
Gladioli, 12 bun.	6 0	12 0	Tuberoses, 12 blms.	0 4	1 0
— 12 sprays	1 0	1 6			
Heliotropes, 12 spr.	0 3	0 6			
Lilium, var., 12 bl.	2 0	6 0			

Orchid bloom in variety; fairly good supply, for this time of year.

SEEDS.

London: *Oct.* 2. — Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, write that there were but few buyers on to-day's market. Clover seeds do not meet with attention; large crops everywhere, and low prices, seem to be the universal rule. For Trifolium the sowing demand is nearly at an end. In Mustard and Rapeseed there is no alteration. Winter Tares have now reached so low a figure that they are being bought speculatively for holding over. There is rather more inquiry for Blue Peas. Haricot Beans are dearer. In birdseeds there is no change. Mustard and Rapeseed move off slowly on former terms.

FRUITS AND VEGETABLES.

Spitalfields: *Oct.* 2.—English Apples, 2*s.* 6*d.* to 5*s.* per bushel; Pears, 2*s.* to 2*s.* 9*d.* per half-sieve; English Tomatos, 3*s.* to 4*s.* per 12 lb.; Foreign Tomatos, 1*s.* to 1*s.* 9*d.* per box; Damsons, 4*s.* to 4*s.* 6*d.* per half-sieve; Pruen Plums, 3*s.* 6*d.* to 4*s.* 6*d.* do.; Cabbages, 2*s.* to 3*s.* per tally; Greens, 2*s.* 6*d.* to 4*s.* do.; Cauliflowers, 1*s.* per dozen; Vegetable Marrows, 3*s.* to 4*s.* per tally; Spinach, 1*s.* 6*d.* to 2*s.* per bushel; Brussels Sprouts, 1*s.* 6*d.* to 2*s.* per half-sieve; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Turnips, 2*s.* to 3*s.* per dozen bunches; Carrots, 1*s.* 6*d.* to 2*s.* do.; Parsley, 1*s.* to 1*s.* 6*d.* do.; Mint, 1*s.* to 1*s.* 6*d.* do.; Cos Lettuce, 8*d.* to 1*s.* per score; Leeks, 2*s.* per dozen; Endive, 1*s.* to 1*s.* 6*d.* do.; Horse Radish, 1*s.* to 1*s.* 3*d.* per bundle; Celery, 8*d.* to 1*s.* do.; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; English Onions, 5*s.* per cwt.; Belgian Onions, 3*s.* 9*d.* to 4*s.* per bag of 110 lb.; Dutch Onions, 3*s.* 9*d.* to 4*s.* 3*d.* do.; Spanish Onions, 5*s.* to 6*s.* per case; frame Cucumbers, 2*s.* to 2*s.* 6*d.* per dozen; natural do., 6*d.* to 10*d.* do.; Turnips, 45*s.* to 50*s.* per ton; Carrots, 22*s.* to 32*s.* do.

POTATOS.

Borough and Spitalfields: *Oct.* 1.—Fair arrivals and about steady prices. Early Rose, 40*s.* to 50*s.*; Regents, 55*s.* to 75*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 45*s.* to 70*s.*; Imperators, 45*s.* to 65*s.* per ton.

Spitalfields: *Oct.* 2. — Quotations:—Hebrons, 65*s.* to 85*s.*; Magnums, 45*s.* to 65*s.*; Regents, 60*s.* to 90*s.*; Imperators, 60*s.* to 85*s.* per ton.

Stratford: *Oct.* 1. — Quotations: — Hebrons, 60*s.* to 80*s.*; Elephants, 55*s.* to 70*s.*; Regents, 55*s.* to 70*s.*; Magnums, light land, 55*s.* to 70*s.*; do., dark, 45*s.* to 50*s.* per ton.

ENQUIRIES.

Canary Islands.—Will any of our correspondents kindly furnish a *Constant Reader* with the names and addresses of nurserymen in the Isles; also the title and address of publisher of the newspaper which has the best circulation there?

NOTICES TO CORRESPONDENTS.

A Collection of Herbs: *J. B.* If the schedule of the Society had contained the words "pot," or "flavouring," we think that no one of the competitors would have thought of including Shallots, Carrots, Turnips, Celery, Horseradish, Onions, and Leeks. Many schedules err in the matter of vagueness, and are in that way productive of much misunderstanding amongst exhibitors.

Awards at the Vegetable Conference: *C. & Co.* Our list was official, and furnished by the Society. If there is an error you should call the attention of the authorities to the matter.

Books: *J. R. Art of Grafting and Budding*, by Baltet. Published at 37, Southampton Street, Strand. W.C.—*J. W. M.* There are many Garden Manuals, two of the best of recent date are *Villa Gardening*, by Hobday. (Macmillan & Co.).—*The Garden Calendar*, by T. W. Sanders. (Hamilton, Adams, & Co., Paternostor Row). Price 2*s.* 6*d.*

Ferns: *W. Miller.* There are about 2500 species of Ferns.

Fruit Growing: *D.* The best time of year to start would be the present; which might be utilised in draining the land, if necessary, digging, or trenching the ground, preparatory to planting in February or March. The West Coast of Scotland, if the land be sheltered from westerly winds, would suit. We scarcely understand your term Southern Coasts of Scotland, unless you mean that portion of Fifeshire which borders the Frith of Forth. The East Coast is cold and late, but good crops are sometimes got there if the garden is near the coast, and there is shelter from the wind in the conformation of the surface, or in the form of Fir, or mixed plantations.

Great Cape Hyacinth: *S. G.* The plant meant was probably Galtonia (Hyacinthus) candicans, which grows to a height of 4 feet.

Insects: *A. H.* Yes, weevils. Trap them with pieces of Carrot, and go round with a light at night. See p. 367 of our last issue, "Peach Leaves Eaten by Insects."

Hibiscus sinensis: *Young Gardener.* The semi-double Hibiscus seems to be a good thing, but the flowers were quite shrivelled when we received them.

Mealy-bug: *E. W. W.* Wash all woodwork with carbolic soap, lime-wash the walls, take away the upper crust of soil, gravel, &c.; wash the plants with Gishurst soap in the proportion of 2 oz. of soap per gallon of water for tender plants, and more for hardier plants, up to 4 oz. per gallon for the Vines, &c., in a resting state. Do this work once yearly, besides keeping a keen outlook for the bug during the summer, and wherever it is observed touch it with a small brush dipped in methylated spirit.

Names of Fruits: *Hope.* 1 and 3, not recognised; 2, Manks' Codlin (culinary); 4, Hambledon Deux Ans; 5, Franklin's Golden Pippin; 6, Adams' Pearmain.—*E. A. Apple:* Striped Beefing; *Pears:* 1, Beurré d'Amanlis; 2, Beurré Clairgeau; 3, Beurré Hardy.—*Without letter, from Tolleshury. Pear:* Fondante d'Automne; *Apples:* 1, Small's Admirable; 2, Adams' Pearmain; 3, Bedfordshire Foundling. — *X. Y. Z. Pears:* 1, Alexandre Lambre; 3 and 4, Hughes' Bergamot; *Apples:* 2, Northern Greening; 3, Bess Pool; 4, Claygate Pearmain; 5, Peasgood's Nonsuch; 6, Duck's-bill.—*H. Rogers.* Probably Scarlet Russet.—*J. T.* 1, bruised past recognition; 2, Peach, Walburton Admirable; 3, Apple, Cox's Orange Pippin; 4, Pear, Chaumontelle.—*N. B.* Aster diffusus var. horizontalis.

Names of Plants: *J. M.* Goodyera repens—very rare. Please send a specimen in flower, next year, if possible; Linnæa borealis; Salvia verbenaca; Hooker's *Student's Flora* (MacMillan), last edition. *T. H.* 1, 2, 3, 4, all varieties of Chrysanthemum carinatum; 5, C. segetum.—*E. C. L.* Acer platanoides (Norway Maple). — *G. R.* 1, Chrysanthemum uliginosum; 2, Aster Herveyi; 3, Geranium molle.—*J. J.* 1, Choisya ternata; 2, Arbutus unedo.—*E. E.* Gongora cassidea.—*G. W.* Centaurea nigra (Knap-weed).—*W. S. C. P., Cornwall.* 1, Gnaphalium dioïcum; 2, Lobelia excelsa; 3, Arnica Chamissonis; 4, Anthemis tinctoria; 5, Matthiola incana (send again in mature fruit); 6, Arabis procurrens; 7, Cnicus monspeliensis.—*J. B.* 1, Berberis vulgaris; 2, Symphorocarpus racemosus; 3, Biota orientalis var.; 4, 5, next week; 6, Leycesteria formosa.

Parsnip, &c.: *T. H.* There are mites in the root, "miners" in the leaf, and indications of bad cultivation generally. Pears next week.

Potatos—134 lb. on 92 feet Run of Rows: *C. R.* A good crop; not a heavy one for garden ground.

Roses for Cutting in Summer: *W. F. S.* Get them on their own roots; not that they grow any better, as a rule, in that way, but because you are not so much troubled with root-suckers, which are also root-weakeners. Moreover, if frost should kill the Roses to the ground-level, the up-springing shoots will still be those of the variety planted, and not those of a Brier. The best Roses to supply cut flowers in summer are:—The Provence Roses, such as La Reine de Provence, Unique Provence, Rose de Meaux, Crested Provence; Moss Roses in variety. In French Roses there are Letitia, Duchess of Buccleuch, Napoleon, Prince Regent, Duc de Valmy. Some fine crimson French Roses are found in Boule de Nanteuil, D'Aguesseau, Kean, Latour d'Auvergne, Ohl, Schönbrunn, Triomphe de Janssens, Oillet Parfait, Perle des Panachées; and Tricolor des Flandres should not be omitted. Hybrid China Roses bloom in summer, and there are many beautiful varieties worthy of being planted; but not so much as bedders, as for pillars, arches, &c., we mention Brennus, Chénédole, Blairii. In hybrid Bourbon Roses, there are Paul Ricaut, Chas. Lawson, Coupé d'Hebé, Chas. Duval, Paul. Perras, Gloire de Rosamène, a Bourbon rose, makes a good bed. Some Damask Roses, as York and Lancaster, Madame Zoutman, Madame Hardy, and La Ville de Bruxelles might be employed. Tea-scented Roses should be planted, but the soil must be well prepared, deep and warm; and if you like to plant hybrid perpetuals, the flowering period will be lengthened. Make any selection you please from nursery lists of these last two classes, choosing only such as are reputed hardy, are compact yet vigorous in habit (some are fit only for a wall or fence), and good bloomers. Fellenberg Noisette, Madame Desprez, Crimson Bedder, and General Simpson, make good beds, where effects in mass are required; but the flowers are not particularly good for cutting, and are not fragrant.

Ventilation of Orchid Houses: *Silva.* The scale of temperatures given in the *Gardeners' Chronicle*, every month, should be a good guide to the regulation of the ventilators in all the Orchid houses, summer and winter, as it is there intended to give a basis on which both heating and ventilation should be regulated. In winter, the bottom ventilator should be more freely used than the top ones, but observation is necessary before a correct adjustment, without causing draughts, can be attained; as a rule, 2 inches at bottom, and 1 inch at top are safe. Generally speaking, as soon as the thermometer registers the required temperature in the morning, the ventilators should be opened and kept open as long as the temperature is maintained, or partly closed, as may be deemed advisable, the shutting up being done as late as it conveniently can be, and a small opening—say, the eighth of an inch—left in the bottom ventilators all night.

Communications Received.—J. L.—A. B.—T. H.—Constant Reader.—C. Cundy.—Bussey.—F. K. & Co—W. D.—Journal of Horticulture.—N. E. B.—W. H.—J. Hughes.—G. Paul.—J. D.—F. R.—H. Evershed.—J. S.—A. R. C.—G. Nottage (thanks).—H. L.—Sir J. M.—J. H. L.—E. J.—H. T.

Obituary.

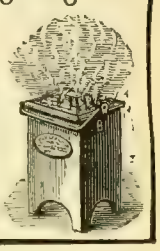
Thomas Wright.—There passed away, on the 25th ult., at the age of sixty-one years, Thos. Wright, of Sidney Place, Cork. He was a member of the Society of Friends, a distinguished botanist and pteridologist, and a large contributor to the flora of co. Cork (Allin). He was found dead in his bed on the morning of the 25th ult.

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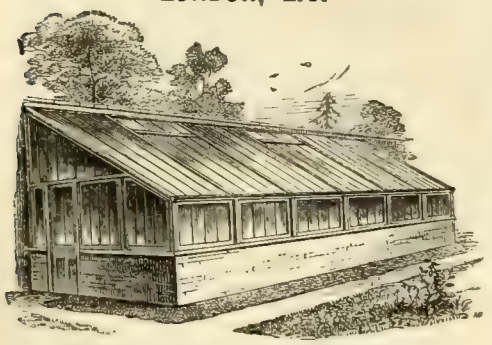
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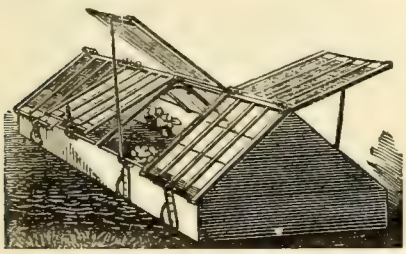


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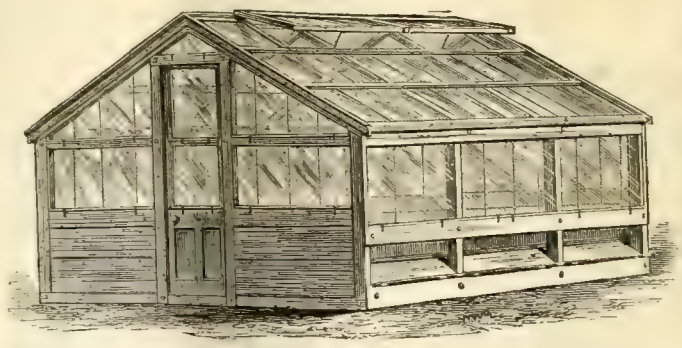
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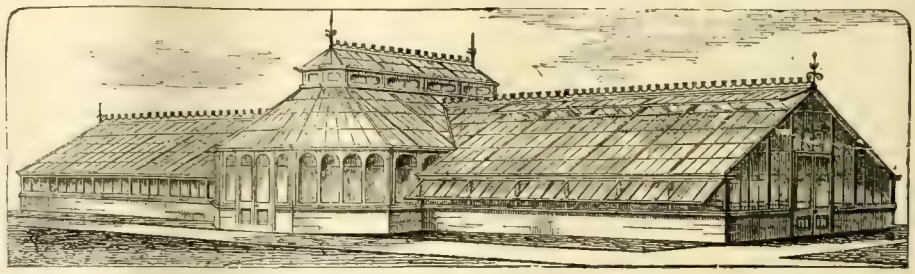
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8 ft. long by 6 ft. wide,	£5 10 0
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Vineries, Stoves, Greenhouses. Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

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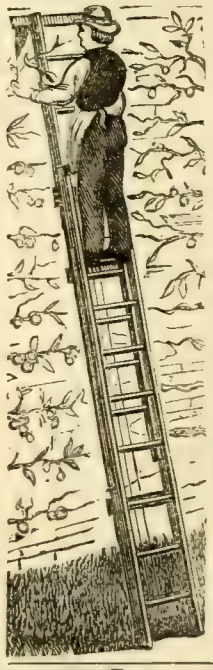


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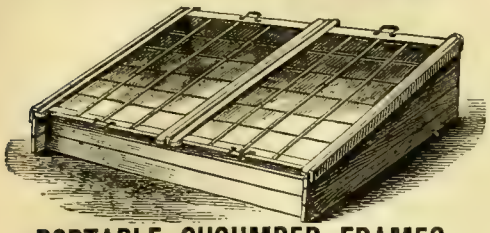
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1-light frame,	4 ft. by 6 ft.	Carriage and Packing Cases FREE.	2	0	0
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Larger sizes at proportionate prices.

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Hothouse Builders and Engineers, Royal Horticultural Works,

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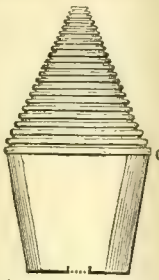
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FLOWER POTS, 1 to 40 inches in diameter, manufactured from the Clay, in its **natural state**, and being made by Hand, are considered by all that use them far superior to Machine-made Pots. Price LISTS gratis. Samples free. Large Book of Designs, 1*s.* 6*d.*

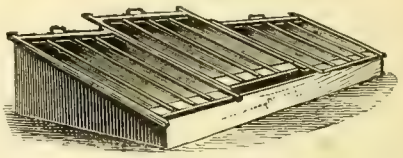
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1-Light Frame	...	4 ft. by 6 ft.	CASH PRICES	£2	0	0
2 ,, ,,	...	8 ft. by 6 ft.		3	0	0
3 ,, ,,	...	12 ft. by 6 ft.	CARRIAGE AND	4	5	0
4 ,, ,,	...	16 ft. by 6 ft.		5	10	0
5 ,, ,,	...	20 ft. by 6 ft.	PACKING FREE.	6	15	0
6 ,, ,,	...	24 ft. by 6 ft.		8	0	0

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HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

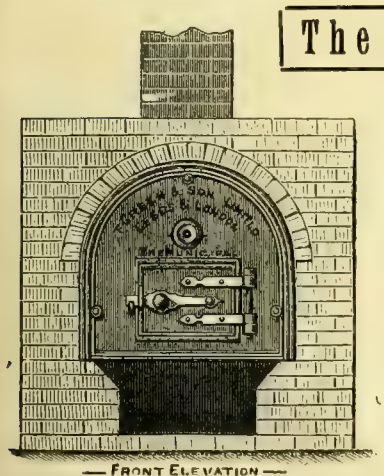
And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

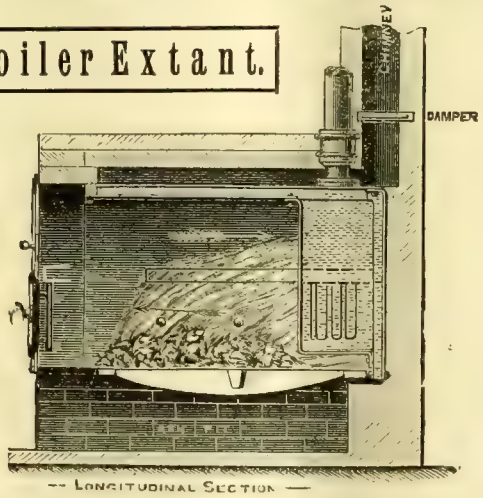
The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

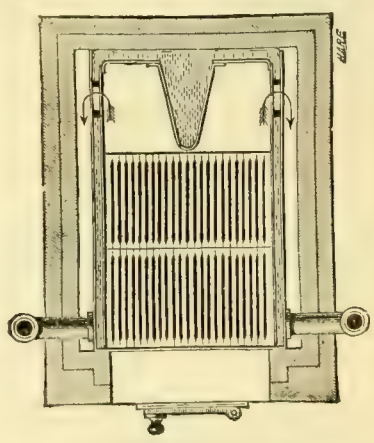
The Best Boiler Extant.



— FRONT ELEVATION —



— LONGITUDINAL SECTION —



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The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back. The front elevation shows it set in *brickwork, which is necessary for this class of boiler.*

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MB 1	3 ft.	2 in.	long	by 2 ft.	0 in.	wide	by 2 ft.	0 in.	deep	Calculated to heat 4-in. piping as follows:—	1000 ft.	Price £15 0 0
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MB 4	6	6	,,	by 3	0	,,	by 3	0	,,		4000	,, 60 0 0
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TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS. **Re HEATING APPARATUS.** Borough Engineer's Office, Municipal Buildings, Leeds. *January* 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings.

The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1¼ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, *November 10th*, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5,000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

MESSRS. THOS. GREEN AND SON, LTD., LEEDS. Yours faithfully, (Signed) G. W. BASHFORD.

AND HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

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9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
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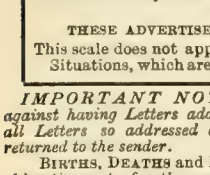
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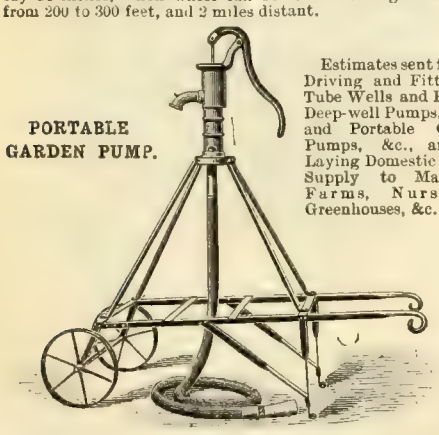
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THE VULCAN HIGH DUTY HYDRAULIC RAM

Is the most efficient, self-acting Pump. It will force water from streams or springs on low levels to tanks or reservoirs on hills, &c. It saves all water cartage, and is always at work, requiring no attention.

All that is necessary is a small fall from a spring or stream, say 24 inches, when water can be forced to heights varying from 200 to 300 feet, and 2 miles distant.



PORTABLE GARDEN PUMP.

Estimates sent free for Driving and Fitting-up Tube Wells and Pumps, Deep-well Pumps, Fixed and Portable Garden Pumps, &c., and for Laying Domestic Water Supply to Mansions, Farms, Nurseries, Greenhouses, &c.

Address: **H. P. VACHER,**

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GLASS.—CHEAP GLASS.

8s. 6d. per 100 feet 15 oz. 12×10, 18×12, 18×14, 24×14, 14×12, 20×12, 18×16, 24×16,
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All kinds of PAINTS at very low prices.
FLOORING at 7*s*. 3*d*. per square; MATCHING at 5*s*. 9*d*.; 3×9 at 2½*d*. per foot run; 2×4 at 3*d*.; MOULDINGS, IRONMONGERY, &c. Catalogues on application to
THE CHEAP WOOD COMPANY, 72, Bishopsgate Street Within, London, E.C.

BEDSTEADS. — For the use of Domestic Servants, Children, and Institutions, we sold during 1888, of our D design BEDSTEADS and WOODS' PATENT WOVEN STEEL WIRE MATTRESSES combined, 3200. Carriage paid to any Railway Station. Liberal Discount. Send for a "Book of French and Persian Designs," to THE LONGFORD WIRE CO. (Limited), Warrington.

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J. BLACKBURN AND SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats, and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices free.—4 and 5, Wormwood Street, E.C.

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THE BEST REMEDY FOR INDIGESTION.

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CAMOMILE PILLS.

Are confidently recommended as a simple but certain remedy for

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See Testimonial, selected from hundreds:—

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MR. W. C. GILL, for the past three and a half years Head Gardener to Major P. CHAPLIN, Chavenage House, Tetbury, Gloucestershire, has been engaged as Head Gardener to the Earl NELSON, Trafalgar Park, Salisbury, Wilts.

Mr. A. DOUGLAS has been appointed Gardener to W. P. HUDDEN, Esq., Brockley Hall, near Bristol.

Mr. J. ROBERTSON, late Gardener to the Earl of ROSSLYN, at Lady Anne's House, Stamford, has been appointed as Gardener to Captain MALLANDINE, Ogbeare Hall, Holsworthy, Devon.

Mr. TEMPLE, late Gardener at Mostell Priory, has been engaged as Head Gardener to Sir MATHEW WILSON, Bart., Eshton Hall, Gargram, Leeds.

Mr. C. J. GOLDSMITH, late of Kelsey Manor, Beckenham, has been appointed Head Gardener to W. B. WATERLOW, Esq., High Trees, Redhill, Surrey.

Mr. JAMES KING, late of Rousham, near Aylesbury, has been engaged as Head Gardener, to Major STORER, Purley Park, Reading.

Mr. GEORGE F. GLEN, for the last eight years Gardener to Earl FITZWILLIAM, at Wentworth Woodhouse, Rotherham, has been appointed Gardener to DONALD LARNACH, Esq., Brambletye, East Grinstead, Sussex.

Mr. CHRISTIE, of Warwick Castle Gardens (which are to be let for market purposes), has been engaged as Head Gardener to the Marquis of HERTFORD, Ragley Hall, Alcester.

Mr. J. HAINSWORTH, late of Newbold Lawn, Leamington, has been engaged as Head Gardener to SALISBURY BAXENDALE, Esq., Bonnington, Ware, Herts.

FOR SALE, *GARDENERS' CHRONICLE*, 18 volumes, '72 to '80 inclusive; well bound, half calf, good condition, 5*s*. per volume, or send offer.
ALPHA, Riverhead, Sevenoaks.

YOUNG WOMEN who WANT TO BE INDEPENDENT, and make their own way in the world, should write for a Prospectus of the SCIENTIFIC DRESS CUTTING ASSOCIATION, 272, Regent Street, London, W. Situations for all Pupils at good salaries.

Florists and Fruiterers.

ADVERTISER WANTS, as PARTNER, a young man with £250, to take half share in good Country Business as above. Within 50 miles of London. Must be a good business man, well up in Nursery. One shop in West End of town, and another can open in High Street—both excellent positions. Business all amongst best class families. A rare opportunity for the right man.—Address, F. W. CANNON, 15, Union Street, Bedford.

WANTED, superior SCOTCH GARDENER, under 40 years of age, to Reconstruct and Lay out a Model Residential Estate of 33 Acres, in a beautiful position and fine climate, 1 mile from the Crystal Palace, Sydenham, and on same hill. The present Vineries and Plant-houses are to be supplemented by other horticultural buildings, at a cost of £4000. An energetic man of resource, good taste, and experience, who could exercise these qualifications, would find the work of developing the natural resources of the estate and keeping it in order congenial to him. A suitable man would be liberally treated, and none other need apply.—Address, in first instance, by letter only, to T. M., Dalkeith Gardens, Dalkeith, Scotland, giving full details of applicant's history, copy of testimonials, and salary expected.

WANTED, a SINGLE-HANDED GARDENER, although considerable help is given in Outdoor Work. Must be thoroughly practical, and one who knows his work. Thorough knowledge of Vines, Stove and Greenhouse Plants, and good Vegetable and Out-door Fruit Grower. Neighbourhood of Shrewsbury.—Address, with full particulars as to experience, wages expected, &c.—G., 41, Wellington Street, Strand, W.C.

WANTED, a SECOND GARDENER in a Large Place, a married man with not more than one child. He must thoroughly understand the general routine of Gardening, both Inside and Out; Wife to attend a Lodge Gate. Wages 18*s*. per week, with three tons of coal a year.—Apply, with full particulars to W. T., Beaurepaire Park, Basingstoke.

WANTED, a FOREMAN, for Fruit Department, to Grow First-class Fruit. No ornamental man wanted. Apply at once, giving age, experience, and two copies of testimonials, which cannot be returned. Wages 20*s*. a week with rooms.—W. F. BOWMAN, Hylands, Chelmsford.

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WANTED, a LAD, about 17, to work in the Houses, with a knowledge of Gardening. Bothy, &c., allowed.—Apply, stating wages required, to G. INGLEFIELD, Tedworth Gardens, Marlborough.

WANTED, at once, GARDEN LABOURER (Kent), one used to Pruning and Nailing, and general Garden Work. Single, wages 16*s*.—Apply to CHAS. LEE AND SON, 2, Hammersmith Road, W.

COVENT GARDEN SALESMAN WANTED. Must be fully experienced in Cut Flower Trade, well educated, and of unexceptional character. Need not have been accustomed to Market. Salary to begin with, £80, and Commission on Sales.—Address, EVANS, Nursery, Exeter.

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WANTED, ASSISTANT SHOPMAN, must be of good address, and accustomed to a smart Counter Trade.—Apply by letter, stating where experience gained, and salary expected, to THOMSON AND CO., Seed Merchants, Birmingham.

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JOHN LAING AND SONS can at present recommend with every confidence several energetic and practical MEN of tested ability and first-rate character. Ladies and Gentlemen in want of GARDENERS and BAILIFFS, and HEAD GARDENERS for first-rate Establishments or Single-handed Situations, can be suited and have full particulars by applying at Stanstead Park and Rutland Park Nurseries, Forest Hill, London, S.E.

SCOTCH GARDENERS.—I have at present several very superior MEN on my Register, whose character and ability will bear the strictest investigation.—JOHN DOWNIE, Seedsman, 144, Princes Street, Edinburgh.

Gardeners, Foresters, Land Stewards.

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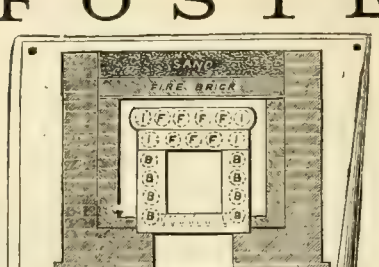
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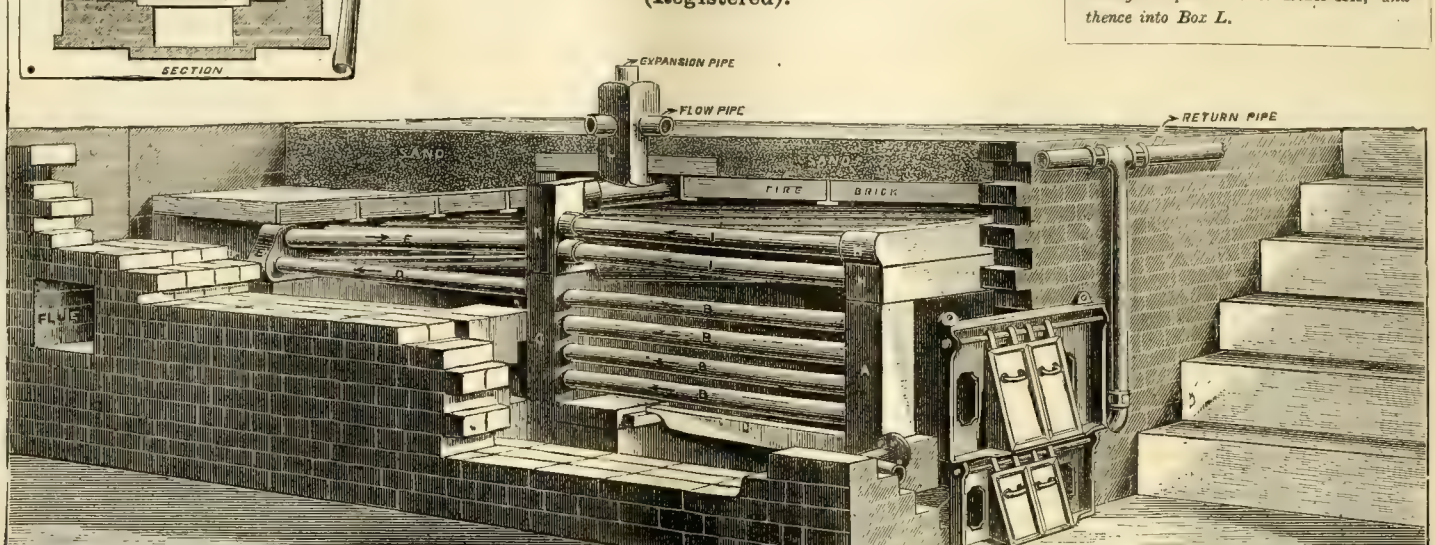


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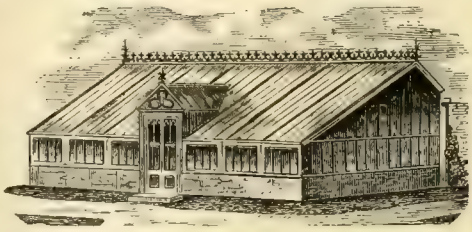
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C
Printed by William Richards, at the Office of Messrs. Bradbury, Agnew, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said William Richards at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—Saturday, October 5, 1889. Agent for Manchester—John Heywood.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2546.

No. 146.—Vol. VI. {Third Series.} SATURDAY, OCTOBER 12, 1889. [Regt. as a Newspaper. {PRICE 3d. POST-FREE, 3½d.

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WHOLESALE LIST on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, London, W.C.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. 15s. per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.

NICOTINE SOAP.—An effectual eradicator of all insect pests affecting plants, without injury to foliage. Jars, 1s. 6d., 3s., 5s. 6d.; Tins, 15s. 6d., 25s., 95s.
All Seedsmen and Florists.

SENT GRATIS.—WOOD AND SON'S interesting Pamphlet on Fertilizing Moss. Most valuable information on Plant and Bulb Culture.
WOOD AND SON, Wood Green, N.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Thursday next, October 17.

10,000 BULBS of LILIUM AURATUM.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, October 17, 10,000 BULBS of LILIUM AURATUM, just received from Japan.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 8010.)

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, October 17, 10,000 splendid TUBEROSES, and 5000 AMARYLLIS, from South Africa, received direct.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 8010.)

SPECIAL SALE OF ORCHIDS IN FLOWER AND BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 17, at half-past 12 o'Clock precisely, choice ORCHIDS in FLOWER and BUD, comprising some fine varieties and specimens, from various collections, &c.

On view morning of Sale, and Catalogues had.

Thursday, October 31.—Englefield Green, near Staines.

ORCHIDS and ORCHID-HOUSES.—Without reserve.

MR. J. C. STEVENS has received instructions from Col. Deare, to SELL by AUCTION, on the Premises, Englefield Green, near Staines, on THURSDAY, October 31, at half-past 12 o'Clock precisely, without reserve, the Collection of ORCHIDS and other STOVE PLANTS, the GLASS-HOUSES, Hot-water PIPING, BOILERS, SLATE STAGING, &c.

On view the day prior from 10 till 5, and morning of Sale; and Catalogues had of Mr. J. C. STEVENS, at his Auction Rooms and Offices, 38, King Street, Covent Garden, W.C., and on the Premises.

Dutch Bulbs.

GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Monday Next, and five following days.

SUNNINGDALE.—WITHOUT RESERVE.

Six days' absolute CLEARANCE SALE of 30 Acres of beautifully-grown and thriving young NURSERY STOCK, by order of Mr. C. Noble, who has unexpectedly received from St. John's College, Cambridge, peremptory notice to quit all lands held under them. Important to Noblemen, Gentlemen, Builders, Nurserymen, and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nurseries, Sunningdale, Berks, close to the Sunningdale Railway Station, on MONDAY, October 14, and five following days, at 12 o'Clock precisely each day, without the least reserve, about 30 acres of beautifully-grown NURSERY STOCK, carefully prepared for removal, including 30,000 Rhododendrons, 1 to 7 feet, many of them handsome specimens of the best-named kinds; and 1000 Standard Rhododendrons of the finest named varieties, the whole comprising such a stock probably never before offered by Auction; 50,000 Laurels, of sorts, 1 to 4 feet; 100,000 Conifers in various sizes, including many fine specimens; Aucubas, several thousands of Ornamental Trees, particularly suitable for Avenue, Park, or Street planting; a very fine collection of 5000 Standard and Pyramid Fruit Trees, 5000 named Gooseberries, thousands of American Plants, 50,000 Berberis for cover planting, and other Stock.

May be viewed any day, Sunday excepted, prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, Land Agents, and Valuers, 67 and 68, Cheapside, London, E.C.

Luncheon will be provided for intending purchasers, and arrangements can be made with Mr. Noble to lift and forward any lots to all parts of the kingdom, in respect of labour incurred and material used.

Tuesday Next.

SPECIAL SALE OF LILIES.—Important to the Trade.

8000 Lilium auratum, splendid Bulbs, just received from Japan; also several thousands of various Lilies, including 2000 Lilium rubrum cruentum, 1600 Lilium album Kroetzeri, 5500 Lilium longiflorum, grand bulbs; 200 Lilium auratum, rubro vittatum and virginale, tigrinum, eximium, elegans, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 15, at half-past 11 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Chigwell.

CLEARANCE SALE by order of Mr. J. H. Brown, in consequence of the expiration of tenancy.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Rolls Park, Chigwell, ten minutes walk from Chigwell Lane Station, on TUESDAY, October 15, at 12 o'Clock, without reserve, the whole of the Outdoor NURSERY STOCK; a splendid lot of Orchard Fruit Trees, specially prepared for removal; large quantities of Currants and Gooseberries; Strawberries in Pots; Greenhouse Plants in variety; 300 Maidenhair Ferns; Greenhouse and Piping, Frames, the Utensils in Trade, two Carts, useful bay Mare, small Stack of Hay, a few other items of Furniture, and other effects.

May be viewed three days prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C., and Leytonstone.

The Salisbury Road and Avenue Nursery, Willesden

LANE, N.W., five minutes' walk from Queen's Park Station, L. & N. W. R., and Brondesbury Station, N. L. R.

Sale of a large quantity of GENERAL NURSERY STOCK, and 15,000 PALMS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. J. B. Goubert, to SELL by AUCTION, on the Premises, as above, on TUESDAY and WEDNESDAY, October 15 and 16, at 12 o'Clock each day, a portion of the valuable and well-grown NURSERY STOCK, including 3000 Border Shrubs, specially suitable for the neighbourhood of London; 2000 Laurels, 3 to 5 feet; 7000 Aucubas, 5000 Golden Euonymus, 1000 large Green Euonymus, fine ornamental Trees, together with about 15,000 PALMS, of sorts, including 6000 Corypha Australis, 5000 Latania Borbonica, and others.

May be viewed one week prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

FICUS, FERNS, and other PLANTS from Holland, PALMS and other Decorative PLANTS from an English Nursery, 300 lots of first-class DUTCH BULBS, DAFFODILS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 16, at half-past 11 o'Clock precisely, without reserve.

On view morning of Sale, and Catalogues had.

Richmond, Surrey.

About 10 minutes' walk from Richmond Railway Station.

UNRESERVED SALE of well-grown general NURSERY STOCK, all carefully prepared for removal, including a large quantity of various Conifers, 2500 Laurels, 1500 Aucubas, 2000 oval-leaved Privet, 3500 Golden and Green Euonymus, 2000 Poplars, 2000 Ivies in pots, 2000 Cloves, a choice assortment of Stove and Greenhouse Plants, including Specimen Palms and Ferns, and other Plants.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, the St. Mary's Grove Nursery, Richmond, Surrey, close to the Drill Hall, on FRIDAY, October 18, at 12 o'Clock precisely, by order of Mr. W. Brown.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

The Sefton House Collection of Orchids.

DUPLICATE PLANTS for UNRESERVED SALE.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions to include in their SALE, on FRIDAY NEXT, October 18, about 150 DUPLICATE PLANTS of ESTABLISHED ORCHIDS, from the above well-known Collection.

Friday Next.

Maxillaria Sanderiana and other ORCHIDS (collected by Mr. Hennis), by order of Messrs. Charlesworth, Shuttleworth, & Co.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, October 18, at half-past 12 o'Clock precisely, a small and choice consignment of Maxillaria Sanderiana, Odontoglossum polyanthum, O. ramosissimum, and Nanodes medusæ, the whole collected by Mr. Hennis, and just received in the very best condition. The Sale will also include a few selected duplicate plants of ESTABLISHED ORCHIDS, from the Sefton House Collection.

On view morning of Sale, and Catalogues had.

Friday Next.

Standard, Dwarf, and Climbing ROSES, including the best Hybrid Perpetuals and Teas; choice Hardy AMERICAN PLANTS, RHODODENDRONS, and other Evergreen Shrubs; ORNAMENTAL and FRUIT TREES, and a variety of GREENHOUSE and DECORATIVE PLANTS, CARNATIONS, PICOTEES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on FRIDAY NEXT, October 18, at half-past 12 o'Clock.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Isleworth.

SPECIAL ANNUAL TRADE SALE of thousands of beautifully grown Golden EUONYMUS and young CONIFERS, for immediate potting, window boxes, or for growing on, by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, on MONDAY, October 21, at 11 o'Clock precisely, in consequence of the unusually large number of Lots, 5000 of the best Silver and Golden EUONYMUS, splendidly coloured; 1000 AUCUBAS, 1 to 3 feet; 500 AZALEA MOLLIS; 1000 Standard APPLES, of the best sorts; thousands of various CONIFERS for potting and planting out; 600 Standard, Victoria, and Gisborne PLUMS; thousands of Standard DAMSONS; hundreds of SOLANUMS, profusely berried; ERICA GRACILIS AUTUMNALIS, and HYEMALIS, and other Plants.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises; at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C.

East Dulwich.

WITHOUT RESERVE.

MESSRS. PROTHEROE AND MORRIS are instructed by A. Briant, Esq., of East Dulwich, to SELL by AUCTION, at the Shawbury Hall, Shawbury Road (5 minutes' walk from East Dulwich Station), where the plants have been removed for convenience of sale, on MONDAY, October 21, at 1 o'Clock, his entire COLLECTION of ORCHIDS, ill-health compelling him to relinquish their cultivation. The plants are in excellent condition, and include many rare and choice species.

On view the morning of Sale at Shawbury Hall, as above, where Catalogues can be had; also from the Auctioneers, 67 and 68, Cheapside, E.C.

Heaton House, Cheshunt.

The well-known Collection of ESTABLISHED ORCHIDS, formed by the late C. J. Partington, Esq., and including undoubtedly the finest lot of Phalænopsis that has been offered for many years.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from the Executors to SELL by AUCTION, on the Premises as above, about 1 mile from the Cheshunt Railway Station, on TUESDAY and WEDNESDAY, October 22 and 23, at half-past 12 o'Clock precisely each day, without the least reserve, the above well-known Collection of ESTABLISHED ORCHIDS, including an exceptionally fine lot of Phalænopsis, the whole of the plants being remarkably well-grown, and in excellent condition. The Collection also includes a very fine batch of Cattleya Mendelii, five plants of Cattleya Gaskelliana alba, Cattleya Mossiæ, a splendid lot of Masdevallias, Odontoglossum Alexandræ, and others.

May be viewed by appointment with the Gardener any day prior to the Sale. Catalogues are now ready, and may be obtained of the Gardener, on the Premises, or of the Auctioneers, 67 and 68, Cheapside, E.C.

Brixton.

Periodical Sale of well-grown NURSERY STOCK of GREENHOUSE PLANTS, by order of Messrs. Ponsford & Son.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Loughborough Park Nursery, Brixton, S.W., close to the Loughborough Park Station, on TUESDAY and WEDNESDAY, October 22 and 23, at 12 o'Clock precisely each day, a large quantity of well-grown NURSERY STOCK, particularly adapted for the London suburbs, including 4000 Golden and Silver Euonymus, 6000 Green Euonymus, 2500 Box, mostly for potting; 1500 Cupressus and Thuias, 3000 Aucubas, 1000 Laurels of sorts, 3000 Oval-leaved Privet, 2000 Variegated and Green Ivies, 1000 Ampelopsis, and other Climbers; 2000 Limes, and other Standard Trees; 1000 London Planes, 1000 Standard Mulberries, fine young trees; together with a large assortment of unusually well-grown Palms and Decorative Plants, Camellias, Azaleas, &c.

May be viewed one week prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Knockholt, near Sevenoaks.

Two and a half miles from Halstead Station, S.E R.

UNRESERVED SALE of beautifully-grown NURSERY STOCK, by order of Mr. W. Dale, who is letting the Nursery.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Hickmandia Nursery, Knockholt, Kent, on THURSDAY and FRIDAY, October 24 and 25, at 1 o'Clock each day precisely, the whole of the well-grown NURSERY STOCK, comprising thousands of Conifers and Evergreen Shrubs in great variety, many of them being very fine specimens, adapted for immediate effective planting; 3000 Green Hollies, 2 to 4 feet; 2000 Rhododendrons, 1000 Cupressus Lawsoniana, 3 to 7 feet; 500 English Yews, 3 to 5 feet; thousands of Forest Trees, a large quantity of well-grown Fruit Trees, Laxton's new Strawberry ("Noble"), Climbing Plants, 60 bushels of Potatos, &c.

May be viewed one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The capital NURSERY, comprising 4 acres of Land, with Dwelling-house, Seed Shop, five Greenhouses, Sheds, &c., TO BE LET, on Lease, at a very low rental. Full particulars of the Auctioneers.

Exeter.

SIX DAYS UNRESERVED SALE of particularly well-grown NURSERY STOCK, presenting to Gentlemen and the Trade, largely engaged in Planting, a splendid opportunity of securing acres of well-assorted and thriving young Stock.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co., who are relinquishing the business, to SELL by AUCTION, on the Premises, the Nurseries, Exeter, on MONDAY, October 28, and five following days, at half-past 12 o'Clock precisely each day, without the slightest reserve, the First Portion of the extensive NURSERY STOCK, comprising specimen Border Shrubs, in rich assortment, and in considerable quantities; 25,000 Conifers of the choicest description, beautifully grown and in various sizes; 20,000 Evergreens, comprising Variegated and Green Hollies, Golden and English Yews, &c.; 3000 Hybrid Rhododendrons, 28,000 Fruit Trees, consisting of 6000 Standard, Dwarf, and Pyramidal Apples; 4000 ditto Pears, 1000 Dwarf-trained Peaches, Nectarines, and Apricots, not injured by frost. Thousands of Ornamental Trees, Deciduous Shrubs and Climbing Plants; 15,000 GREENHOUSE PLANTS, including 3000 well-grown Ericas, 1500 Camellias and Azaleas, 250 Daphnes, 2500 Genistas, 3000 various Ferns, of sorts, 600 Roses in pots, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—Purchasers may arrange with the Manager at the Nursery to have their lots packed and forwarded to any part of the kingdom at the usual charge. The old-established NURSERY is TO BE LET or SOLD, on very advantageous terms.

Full particulars may be obtained of Messrs. PROTHEROE AND MORRIS as above.

Harrow-on-the-Hill.

By order of Mr. E. Chamberlain, who is retiring from the business, valuable FREEHOLD BUILDING ESTATE or NURSERY LAND, and the whole of the STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Nursery, Sheepcote Lane, Harrow-on-the-Hill, on MONDAY and TUESDAY, October 28 and 29, the whole of the GENERAL NURSERY STOCK, in capital condition for removal.

The valuable FREEHOLD BUILDING ESTATE, of about 3 acres, with a commanding frontage to Sheepcote Lane, will be Sold on the first day prior to the Nursery Stock.

Further particulars will appear.

Groombridge, near Tunbridge Wells.

GREAT UNRESERVED SALE of VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at Hollomby's Nurseries, Groombridge, Tunbridge Wells, on WEDNESDAY and THURSDAY October 30 and 31, 150,000 Hardy ORNAMENTAL TREES, Standard Dwarf and Climbing ROSES, RHODODENDRONS, and FOREST TREES.

Catalogues may be had at the Nurseries, or of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Eltham.

GREAT UNRESERVED CLEARANCE SALE of over 20 Acres of remarkably well-grown and thriving NURSERY STOCK, by order of Mr. Todman, in consequence of the expiration of the Leases, to be Sold by

MESSRS. PROTHEROE AND MORRIS, on the Premises of the Eltham Nursery, Eltham, Kent, 1 mile from the Eltham Railway Station, on MONDAY, November 18, 1889, and following days, at 12 o'Clock punctually each day, without reserve, the whole of the unusually well-grown NURSERY STOCK, extending over 20 acres, now in excellent condition for removal.

Fuller particulars will appear in due course.

American Nurseries, Bagshot, Surrey.

PRELIMINARY NOTICE.

EXTENSIVE SALE of SURPLUS NURSERY STOCK. Highly important to the Trade and Gentlemen engaged in Planting.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. J. Waterer & Sons, to SELL by AUCTION, on the Premises, the American Nurseries, Bagshot, Surrey, EARLY in NOVEMBER, an unusually large quantity of attractive NURSERY STOCK, in grand condition for removal.

Full particulars will be announced shortly.

Cliffe, near Rochester, Kent.

PRELIMINARY NOTICE of a GREAT SALE of FRUIT TREES.

IMPORTANT to the TRADE and MARKET GARDENERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Horne, to SELL by AUCTION, on the Premises, Perry Hill, Cliffe, near Rochester and Gravesend, EARLY in NOVEMBER, without reserve, 30,000 GRAFTED FRUIT TREES, comprising 11,000 Maiden Apples, of the best sorts; 2500 Maiden Pears, &c., 50,000 Sir Joseph Paxton STRAWBERRIES, 20,000 2-yr. Connover's Colossal ASPARAGUS, &c.

Fuller particulars will appear next week.

Nursery Stock.—West Wickham, Kent.

Under Bill of Sale, and by order of Trustee.

AUCTION SALE of about 40,000 well-grown FOREST and FRUIT TREES, CONIFER, AUCUBAS, specimen WELLINGTONIA, border and pot SHRUBS, about 10,000 Standard and Dwarf ROSES, &c.

MR. W. LEVENS will SELL the above, on THURSDAY, October 31, 1889, and two following days, at 11 for 12 o'Clock each day.

Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham; and also at 6, Kirkdale, Sydenham, S.E.

N.B. West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

GARDEN WANTED.—A practical Grower of Tomatos, Mushrooms, Grapes, &c., would like to Rent a Garden for Market purposes, or would undertake the Working Management of Garden.

A. B., 36, West Street, Grimsbury, Banbury.

WANTED, TO RENT or PURCHASE, small RESIDENCE, with large Grounds or Land adjoining, with or without Glass, within easy distance of Town, and near Railway Station.—Apply by letter to F., Mr. W. Denman, 7, Catherine Street, Strand, London, W.C.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, by Private Treaty, a first-class NURSERY, well stocked; 7 Hothouses, about 2 Acres of Land, lock-up Shop in Market-place.

For particulars, apply to GRAHAM AND MADELEY, Valuers, Burton-on-Trent.

London, S.W., near Putney.

FOR SALE, an excellent and old-established (over twenty years) NURSERY BUSINESS. Freehold. About 1 Acre, all enclosed, containing a good Dwelling-house, Stabling and Coach-house, 8 Greenhouses, besides Pits, Frames, necessary Sheds, Utensils, &c. Purchase money (some of which might remain) will include Goodwill, all Stock, loose and fixed Plant, &c.

Apply to TANSLEY WITT, 40, Chancery Lane, London, W.C.

NURSERYMEN and FLORISTS: large fashionable town. Handsome and prominent Conservatory, Gardens, &c. Moderate rental. Price for good stock and four large, well-built and heated houses, £800. Excellent opportunity for practical man desirous of obtaining a high-class business.

Apply personally (or stamp), B. POMFRET, Business Agent, High Street, Tunbridge Wells.

FLORIST'S BUSINESS, situated West, on Lease. A Bargain. Suitably fitted up. Rent £110. Upper part well let at £100.

WM. DENMAN, 7, Catherine Street, W.C.

To Nurserymen, Florists, and Others.

TO BE LET, at Brentwood, in the midst of a high-class residential neighbourhood, a large piece of LAND, upon which are a Small House and Shop and several Greenhouses. The rent is moderate, and to a practical man a first-rate opportunity offers itself for establishing a lucrative business.

For particulars, apply to ALFRED RICHARDS, Auctioneer and Land Agent, 8, New Broad Street, London, E.C.

TO BE LET, on Lease, about 2 acres of productive NURSERY LAND, with Stabling, Out-buildings, and about 13,500 super. feet of Glass. About 5 minutes' from Waltham Cross Station, Great Eastern Railway.

Apply to E. A. H., Queen Anne's Lodge, Waltham Cross, N.

Landscape Gardening.

OUR MR. J. H. MAWSON advises on all classes of Work under the above heading; also Rock Building, General Estate Improvements, Planting, &c.

See this week's *Gardeners' Chronicle*, p. 412.

Address, MAWSON BROTHERS, Nurserymen, Windermere.

FLORIDA.—A married GENTLEMAN, with 10 years' experience, the owner of Orange Groves, Fruit Farms, and splendid Land ready for planting, can receive a few more Gentlemen to live with him and instruct them in Orange Truck and Tobacco Farming. They may at once plant and work on their own land, which he has prepared for them, and go out with him to Florida this autumn. Full particulars, or personal interview, when photos can be seen.—Address, FLORIDA, May's, 162, Piccadilly, London, W.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

GREAT BARGAINS.

Having purchased the Nursery, together with the Stock, up to lately occupied by W. Beard, we are prepared to Sell the following, at less than valuation prices, to clear the ground:—

RHUBARB LINNÆUS, forcing roots, 3s. per dozen, 17s. per 100, £7 10s. per 1000.
,, ,, planting roots, 12s. per 100, £5 10s. per 1000.
THYME, LEMON, Green and Yellow, 1s. per dozen, 6s. per 100.
PINKS, White and Striped, 1s. per dozen, 6s. per 100, 50s. per 1000.
IBERIS CORREÆFOLIA, 1s. per doz., 6s. per 100, 50s. per 1000.
SWEET WILLIAMS, 1s. per dozen, 6s. per 100, 50s. per 1000.
BROMPTON STOCKS, 1s. per dozen, 6s. per 100, 50s. per 1000.
SILENE PENDULA COMPACTA, Red and White, 1s. per dozen, 6s. per 100, 50s. per 1000.
FOXGLOVES, mixed, 1s. per dozen, 6s. per 100.
SNAPDRAGON, 1s. per dozen, 6s. per 100.
WALLFLOWERS, Early Feltham, Harbinger, Dark Blood, Yellow and Double German, 9d. per dozen, 4s. per 100, 30s. per 1000.
ARENARIA MONTANA, alba and rubra (Thrift), 1s. per doz., 6s. per 100.
LAVENDER, 1s. per dozen, 6s. per 100.
STATICE LATIFOLIA, 2s. per dozen, 14s. per 100.
FUNKIA SIEBOLDII, 2s. per dozen, 14s. per 100.
,, VARIEGATA, 2s. per dozen, 14s. per 100.
SOLOMON'S SEAL, 2s. per dozen, 14s. per 100.
SAXIFRAGA UMBROSA, ,, CORDIFOLIA, ,, GLAUCUS, ,, TRIFURCATA } 2s. per dozen, 14s. per 100.
SEDUM SPURIUM, ,, FABARIA, ,, RUPESTRE, ,, ALBUM and AUREUM } 1s. 6d. per dozen, 10s. per 100.
TROLLIUS EUROPÆUS, 2s. per dozen, 14s. per 100.
VERONICAS, Austriaca variegata, japonica, salicifolia, Lindleyana, 1s. 6d. per dozen, 10s. per 100.
ŒNOTHERA YOUNGII, 2s. per dozen, 14s. per 100.
ASTER ALPINUS, 2s. per dozen, 14s. per 100.
POLEMONIUM RICHARDSONII, 2s. per dozen, 14s. per 100.
LYCHNIS DIOICA rubra plena, 1s. 6d. per dozen, 10s. per 100.
CENTAUREA MONTANA, Red and Blue, 1s. 6d. per dozen, 10s. per 100. [14s. per 100.
HELIANTHEMUM (Rock Rose), six varieties, 2s. per dozen,
CAMPANULA GLOMERATA DAHURICA, 1s. 6d. per dozen, 10s. per 100.
,, PERSICIFOLIA alba plena, 1s. 6d. per doz., 10s. per 100.
CHEIRANTHUS (Alpine Wallflowers), 1s. 6d. per dozen, 10s. per 100.
SOLIDAGO MULTIRADIATA, 1s. 6d. per dozen, 10s. per 100.
POLYANTHUS, Gold-laced, 1s. per dozen, 7s. per 100.
LYSIMACHIA NUMMULARIA, 1s. 6d. per doz., 10s. per 100.
ANEMONE HONORINE JOBERT (Japonica alba), 2s. per doz., 14s. per 100.
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As a Supplement to the

GARDENERS' CHRONICLE

FOR

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Published an Ink Photograph

OF THE

Entrance to the Winter Garden at Halton,

THE SEAT OF ALFRED DE ROTHSCHILD, ESQ.,

together with a description of the Gardens.



THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 12, 1889.

LOCKINGE.

THIS delightful residence is situated two miles from Count Gleichen's statue of Alfred the Great, which stands appropriately in the market square of Wantage, the birthplace of that famous English hero and reformer. It seems appropriate to measure the distance from such an interesting memorial, since the townspeople and the countryside, and indeed all England, owe this splendid testimonial in honour of our country's chief historical favourite and earliest and best worthy to Lord Wantage, of Lockinge House.

Lord Wantage is himself much admired for his proved worth and the romance of his career. His part, as a mere youth, in the conquest for the public good of the forts of Sebastopol, and his winning of the Victoria Cross, was soon followed by another conquest, in his own behalf and her's, of the only daughter and child of the late Lord Overstone, whose great wealth he now nobly administers. He is widely esteemed for his long parliamentary career as Sir R. Loyd Lindsay, for his gift of land at Wimbourn for the purpose of aiding, if possible, in establishing small farming, and for his recent offer of 500 acres of downs on the hill near here for the purposes of a new Wimbledon. His lordship holds the post of President of the Rifle Association, and has just been gazetted as Brigadier-General of the Home Counties Brigade of Volunteers. He was personally congratulated by the German Emperor the other day for the rapidity with which he moved 3000 Volunteers from Berks to Aldershot; and, passing from these matters to agricultural and horticultural affairs, it is certainly an interesting example of the turning of a sword into a ploughshare, that the Queen should have handed Lord Wantage a champion prize for a horse at the Windsor show, having more than thirty years before, on his return from the Crimea, placed on his breast the Victoria Cross.

Living, as he does, in the Vale of the White Horse, or, more strictly, on the edge of the vale, in a dell of the chalk range, on which the figure of the animal is rudely represented, and owning some fine land in the vale, and some poor hill farms which the tenants have vacated in these bad times, Lord Wantage has become the largest farmer in Berks, and one of the largest in England, holding in hand nearly 8000 acres. Many of his labourers live in Ardington and Lockinge, two model villages near his residence, where each householder enjoys a good cottage and an allotment at a rent of about 18*d.* a week. The flower gardens, too, are smart and well kept, and, indeed, it would be difficult to find two prettier and at the same time two better built villages. It may interest some persons to learn that the Manor House at Ardington, where the mother of Lord Wantage now resides, was formerly the home of Clarke, the antiquary, and afterwards of Mr. Vernon, who here collected the pictures which in 1847 became national property by his bequest.

Wantage house lies low, and a stream, rising in the hill above, flows fast through the grounds. It might be thought that the situation was rather low, but the dells of the chalk are dry, and the sparkling and rapid stream cheers the spot and bespeaks good drainage, and the absence of that sort of stagnation which is unwholesome for houses or for heads. The grounds are limited in extent, and the house draped with creepers stately in size and pleasing to the eye, defended by shrubs and by fine sentinel trees in the park, is well seen in glimpses from the road. The parish church, beautifully restored a short time ago, stands a stone's throw from the road, and close to the house—too close it might be deemed, but for the exquisite order of the graveyard, which lies retired from the windows, and hidden by shrubs. The late Lord and Lady Overstone rest here beneath the turf of what seems to be a nicely-kept lawn, well planted with shrubs.

The pleasure-grounds and garden round the house extend to 20 acres, enclosed by a large park, which runs up the adjacent slopes, and is lost among the Beeches at their summit. On the hill above is a large reservoir supplied by means of a ram from the stream, for the gardens and other purposes. The "drinking water" comes from another source, and so pure, fresh, and sparkling is the water from the chalk here and at Wantage, and in the abundant springs of all the villages beneath the range, that it might almost persuade the jaded millions of our great cities to abstain from their more exciting beverages if they could only gain access to the only ale which Adam drank, in the pure form in which it is here provided.

The shrubs and trees which dislike chalk do not flourish well here. The Yew and Beech are at home, Abies pinsapo makes a large handsome bush, but the Wellingtonia grows tall and weak. The charm of variety has been skilfully attained by the landscape gardening of this place, and in strolling about the grounds several nooks of quite bewitching beauty are discovered. One of these is the round flower garden, a small space of ground encircled by trees and shrubs and laid out with a central bed and eight companion beds edged with Box and planted in summer with Asters, Stocks, Zinnias, Carnations, and dwarf Marigolds. The central bed is planted with permanent Ivy, having handsome specimen plants rising out of it. I am not in the habit of abusing the "bedding system," since nothing else seems to me sufficiently gorgeous for certain situations, especially where the million congregates on a level surface during the summer months only; but it does not find its natural home in this delightful dell, with its varied levels and aspects, its winding walks, its hidden corners, and pleasing vistas.

An older and more mixed style of gardening seems well suited for such a site, and it has accordingly been adopted in the main, though even here I observed some very gay beds in front of the drawing-room windows, and near the great conservatory, and only a very captious critic could complain of them.

Before visiting the kitchen gardens, I was shown through several houses devoted to flowers and other things, including a Melon-house, where Lockinge Hero, raised by Mr. Atkins, who preceded Mr. Rose, the present head gardener here, is now being displaced in favour of Orchids. There is already a nice collection of these new favourites. Flowers for decorative purposes are largely grown in frames and houses, and at these we took a rapid glance, as the custom is, when the objects of admiration are sufficient for a week's inspection, and you have but an hour to spare.

Impatiens Hawkeri, with its lovely rose flowers, ought not to be hurried over. It has been "out" three years, however, so let us pass on. It is novelty we seek for now even more than beauty—for a time, at least—till we return, wearied, to our old loves, and become loyal again. Clerodendron fallax is excellent for conservatory decoration. Here among the frames outdoors were 500 Chrysanthemums in pots, biding their time. We pass into a house for forcing Roses to blossom in February and March. The sorts are Fortune's Yellow, Cheshunt Hybrid, Gloire de Dijon, Maréchal Niel, and Devoniensis. In another house Caladiums were in force, and Crotons for decoration, with many other similar plants. The Fern-house is well-filled, and above is the well-known climbing Fern, Lygodium flexuosum, its delicate green fronds now past their beauty for the season, and turning brown.

In spite of the Asparagus tribe, which are grown and cut everywhere now for decoration, and which last some days longer than any Fern, Mr. Rose is loyal to the Maidenhair, and I noticed in one of the new vineries a long row of large pots filled with valuable plants of this old favourite. He who passes Tydæa, Robert le Diable—without fresh wonder at the rich colours and soft texture of its superb petals, must be case-hardened as regards floral beauty. Though now only a few years out, even those enthusiasts who prefer old favourites should grow it as a "thing of beauty" hardly to be equalled. In another house we found Palms and hybrid Rhododendrons, the new Begonia socotrana, and Calliocarpa purpurea, so named for its pretty berries.

There is not level ground enough near the house for a kitchen garden, and therefore 5 or 6 acres on the hill have been enclosed by coped walls. The chalk subsoil is too near the surface for fruit trees, but kitchen gardens can be altered by plentiful manuring and by "made earth." Plums grow and ripen admirably on the walls, having been planted on made borders 6 feet wide and 3 feet deep. Some of the best sorts are Coe's Golden Drop, Kirke's, Jefferson, Sharp's Amber, Transparent Gage, Green Gage, Victoria, White Magnum Bonum, Golden Gage, Guthrie's Taybank, Guthrie's Late Gage, Heal's Hybrid, Frankfort Peach, Washington, and Standard of England. The Sulhampstead Peach ripens well here on the open wall, and is full of colour, and Ward's Late Peach is a good one for the site, ripening in October. There are six vineries here, each 40 feet long, and two Peach-houses the same length. The statement that there are twenty-four gardeners altogether must end my story. *H. E.*

Grass Seeds for the London Parks.—We understand that Messrs. Little & Ballantyne, of Carlisle, the specially appointed seedsmen and nurserymen to the Queen and H.R.H. the Prince of Wales, have received instructions from Her Majesty's Commissioners of Works to supply all the grass seeds required for the royal parks during the ensuing sowing season. They have also been entrusted with further orders for young forest trees from Her Majesty's Commissioners of Woods and Forests, to be shipped next month for an extension of mountain planting in the Isle of Man.

New or Noteworthy Plants.

Catasetum fimbriatum, *Lindl.*

A rare and pretty little species, not often met with in collections, may now be seen in flower at Kew. It is Catasetum fimbriatum, Lindl. (in *Paxt. Fl. Gard.*, i., p. 115, fig. 81), originally described by Morren as Myanthus fimbriatus (*Ann. de Gand.*, iv., p. 453, t. 231), in 1848. When exhibited at one of the horticultural exhibitions at Brussels, in September of that year, we are told it was awarded an extra gold medal—an award seldom bestowed on a Catasetum, certainly, though there is perhaps no genus of Orchids of more grotesque appearance, and some of the species are not devoid of a certain amount of beauty. The plant now under notice bears a raceme of six flowers, the sepals very light green, barred with purple-brown, the petals barred with bright maroon-purple on a light ground, and the elegantly fimbriated lip of a light green shade. The sepals and petals are 1½ inch long, the latter nearly parallel with the dorsal sepal, while the lateral sepals are sharply turned in the opposite direction, and nearly parallel with the pedicel. The lip is curiously three-lobed, and nearly 1½ inch in diameter, the spur stout and conical. The pair of antennæ gradually converge, and in each case are tightly appressed together at the apex, and stand just over the mouth of the spur. The species is allied to C. deltoideum and C. Trulla. *R. A. Rolfe.*

Cattleya velutina, *Rchb. f.*

This beautiful Cattleya was described in 1870 from a plant which flowered in the collection of Mr. Joseph Broom at Didsbury, near Manchester, as a probable natural hybrid between Cattleya Walkeriana and C. Schilleriana. Why it should have been considered a natural hybrid, I do not know; and certainly the plant bears very little resemblance to its supposed parents. For a long time it remained extremely rare—a fact which, perhaps, lent colour to the supposition of its hybrid origin, though it was found necessary to suggest a different parentage in order to account for its peculiar characters; and C. bicolor, with one of the guttata forms, was suggested as the most probable. My own knowledge of the plant was derived from a single dried flower and the published figures, and I was therefore much gratified when Mr. F. W. Moore, of Glasnevin (whose contributions of Orchid flowers have been both numerous and valuable), forwarded a splendid raceme of four flowers for preservation in the Kew Herbarium. Such an excellent opportunity of examining the plant was too good to be thrown away, and I accordingly made a careful comparison with the allied species. The result is, that I fail to find any trace of hybrid origin, and believe it to be a genuine and very distinct species, not approaching any other in the peculiar form of the lip. Messrs. Veitch appear to have arrived at a similar conclusion on other grounds, for they observe in their *Manual*, "Recent importations of this Cattleya from Brazil prove that it exists in numbers much less restricted than is usually the case with supposed hybrids; it may, therefore, hereafter receive specific rank." A glance at plate 26 of the *Orchid Album* will show that it needs no recommendation as a very handsome garden plant *R. A. Rolfe.*

Cymbidium madidum, *Lindl.*

Nothing appears to have been heard of this species of Cymbidium since 1840, when it was described by Lindley (*Bot. Reg.*, xxvi., *Misc.*, p. 9). It is described as follows:—"A new species of East Indian Cymbidium imported by Messrs. Rollissons. The leaves are like those of C. sinense; the flowers are of a dull yellowish olive-green, with sepals about half an inch long; the labellum is yellower, with a deep purple stain inside, and is altogether destitute of the lamellæ so usual in this genus; in room of which there is a shining exudation all along the axis. I did not remark any smell in this species." It has

never reappeared in any Indian collection, and the reason of this is now apparent. On examining the original specimen in Lindley's herbarium, I find it to be nothing else but the North Australian Cymbidium albucæflorum, F. Muell. (*Fragm. Phyt. Austral.*, i., p. 188), described about eighteen years later, and to which I drew attention in these columns on May 11 last (p. 587). It is a decidedly pretty species when well grown, much resembling C. pendulum in habit. There can be no doubt that the East Indian locality originally given was erroneous, for I find evidence of its being collected on five distinct occasions, and each time in Queensland, while the evidence of its being an Indian plant rests on the few words "A new species of East Indian Cymbidium imported by Messrs. Rollisson," and without any further particulars. It is always interesting to be able to clear up the history of a plant, and in the present case Lindley's name must be retained as the older one. *R. A. Rolfe, Herbarium, Kew.*

POTATO IMPROVEMENTS.*

Twenty-five years ago we had no great wealth of variety in the Potato, and it is a significant fact that, with the exception of the Ashleaf Kidney, a sort which has kept its place chiefly because hitherto there has been a lack of first early varieties, there is hardly to be found in seed Potato lists one then in ordinary cultivation. It is still very much the fashion on the part of those who sigh after the days and years that are gone, to declare that none of the modern Potatos equals in quality the Regents, Lapstones, Fortyfolds, and other sorts of the past. Whenever I hear of the passing away of men of whom it may apparently be said their places cannot be filled, I am consoled with the reflection that the famous old proverb has never been belied, "There's as good fish in the sea as ever came out of it." Just so is it in the Potato family. We have had, since the date I refer to, numerous good Potatos introduced, and plenty of bad ones. We have many good Potatos now also, and a far less number of bad ones, and we have, at least, an abundance of varieties which, whilst equal in quality to the best of bygone days, by far excel them in robustness and productiveness. Old age in man is apt to make many a good thing taste bitter in the mouth which seemed sweet and pleasant to youth. The Potato really has improved—some the eaters of them have become less capable of appreciating them.

Then there has been no inconsiderable improvement in form and beauty. "But," exclaims the Potato pessimist, "Oh, beauty of form and smoothness of skin is no evidence of quality!" Perhaps not; nor, on the other hand, is ugliness. Form and beauty, beyond satisfying the requirements of the cultivators of refined tastes, have become marketable commodities also, for the handsome sample always secure the best price.

One of the chief factors in Potato development during the time previously named, however, was found in the introduction of American varieties. These came to us in large number, generally characterised by similarity of appearance, but varying, perhaps, in colour. All were remarkable croppers, and if few possessed high quality or flavour, yet all materially helped to swell our Potato supplies. Just one or two remain to us in their natural form and goodness, chief amongst which is the favourite Beauty of Hebron; the best perhaps, as it has been the most permanent, of all the family.

Our esteemed friend, Mr. Robert Fenn, who had at Woodstock been raising varieties which were perfect in quality, but lacking in robustness and productiveness, was one of the first to utilise American varieties as parents. Many others presently followed him, with the result, briefly put, that dispensing with all old sorts, and nearly all American varieties, we have a race of Potatos which is productive, robust, gives good quality, and supplies the tables of the poorest in the land cheaply and abundantly. But apart from the Americans, which in spite of their comparative robustness still succumbed wholesale to the deadly effects of the Peronospora, there was this very fungus, with all its dire destructiveness, constantly forcing upon Potato men the need for battling with it for the preservation of our Potato stocks. It is idle to regard it as other than a terrible and disastrous visitation, and in years past when we had to depend upon Regents, Fortyfolds, Victorias, and similar tender though delicious varieties, there was at times reason to fear that the Potato crops of the kingdom would be absolutely decimated.

Here was opportunity for a display of that native force which makes the modern Briton the compeer of the ancient Roman. To comparatively conquer, if not absolutely to subdue the insidious foe, was a feat worthy of accomplishment, and I believe that, comparatively, that great labour has, thanks to the persistent efforts of the Potato raisers, more than to any other body, been accomplished.

One of the first products of the Anglo-American Potato crosses was that famous variety, Magnum Bonum. Raised by Mr. Clarke, of Christchurch, from the seed produce of the Early Rose, assumedly crossed with the Victoria—a once famous Potato, but now rarely met with, it became so widely known and grown in a few years that probably it made more noise than any other Potato ever introduced to commerce. Fortunately for Mr. Clarke and the community, tubers of it and other varieties were sent to that once famous trial ground at Stoke Newington, over which Mr. Shirley Hibberd was the presiding genius; and so much was that gentleman taken with the variety that he introduced it to the Messrs. Sutton & Sons, of Reading, who purchased the stock. Of the Magnum Bonum it may be written, "Clarke raised me, Hibberd selected me, Suttons distributed me, and God gave a wonderful increase," for is not this variety at the present moment more widely grown than any other to be found in commerce? But even in raising a variety which presented so formidable a barrier to the progress of the Potato disease, there were not wanting critics who railed at its quality. It is, however, worthy of remark, that in spite of the critics the Magnum Bonum is more largely eaten now than any other Potato. But having found so admirable a barrier against the tide of fungoid decay, raisers have not been slow to take advantage of it for the purpose of producing many other disease-resisting kinds, and possibly of superior quality. We have now not one, but many disease resisters, and because of them have such an abundance of Potatos that they can hardly be disposed of at any price. Really, the salvation of the Potato and of the consumer has been the ruin almost of the trade, for with stocks so plentiful, few want to purchase, and trade is almost unprofitable to the growers.

Why, in the old disease days, before Magnum Bonum and other fine sorts came to our aid, we imported thousands of tons of Potatos during the winter months from Germany, Belgium, and elsewhere. That trade has been entirely suspended [?], for the excellent reason that we grow plenty of Potatos at home, not only for our consumption, but have an abundance to spare. It is true we import large quantities of early Potatos from France, the Channel Islands, &c., but their consumption in preference to good home-grown old tubers displays a sadly vitiated taste, as in most cases they are not good food for intelligent men. Mr. C. Fidler, of Reading, one of our great dealers in Potatos, as well as an extensive grower, has informed me that the average market price of Potatos is fully 30 to 40 per cent. lower than it was ten years ago—a fact which speaks volumes for the wonderful development of Potato cultivation, the result of the possession of numerous disease-resisting varieties.

The following list of sorts affords some evidence of the change which has been effected in Potatos within the past comparatively few years:—Beauty of Hebron and its white variety; Webber's White Beauty, a distinct early sort; Sutton's Early White Kidney, Seedling, Satisfaction, and Abundance, all robust and great croppers; Snowdrop, Schoolmaster, Magnum Bonum, Vicar of Laleham, The Dean, Reading Russet, Prime Minister, Chancellor, Reading Giant, White Elephant, Imperator, The Daniels, Lye's Conqueror and King of Russets, The Governor, The Bruce, Stourbridge Glory, and many others, nearly all great croppers, and creators of that wealth of Potatos which contrasts so wonderfully with the comparative dearth of twenty-five years since. *A. Dean.*

* Abstract of paper read at the Chiswick Vegetable Conference, Sept. 26, 1889. Supplied by the author.

THE SPROUTING OF SEEDS.

We take the following condensed summaries "On the Influence of Certain Conditions upon the Sprouting of Seeds," from the July *Bulletin* of the Agricultural Experiment Station, Cornell University, Ithaca, N.Y., wherein, with a view to determine, will be found full details of the experiments made on the circumstances and conditions affecting germination, and a discussion on the results obtained:—

Influences of Constant and Variable Temperatures.—Different results are obtained from the same sample of seeds under different variations of temperature, of which the daily mean is essentially the same.—Sprouting takes place more quickly under essentially constant temperature of about 74° than under a temperature ordinarily variable, which gives about the same mean.—Rapidity of sprouting is particularly marked in Beans and Peas.—As the mean temperature becomes lower, rapidity of Sprouting becomes slower.—Greater rapidity of sprouting does not appear to be correlated with greater per cent. of total sprouting. — Constant temperature, of the degree here mentioned, does not appear to give greater percentages of sprouting; at least, the variation in this respect between the constant and variable temperatures is no greater than that which is usually obtained from tests conducted under identical conditions. In the seven tests with Beans, however, there is an average gain of 5 per cent. in favour of those under constant temperature.

Influences of Different Quantities of Water upon Sprouting. — The quantity of water applied to seeds under test may make a remarkable difference in the results.—Sprouting is decidedly more rapid in tests which receive less than the usual amounts of water given in greenhouses. This is markedly the case in all the tests, with the exception of three indifferent and comparatively unimportant instances.—Per cent. of sprouting is much greater, as a rule, in the drier tests.—The addition of water above the amount to keep the earth simply moist, is injurious.—The wide differences between the results of the wet and moist tests are not necessarily due to the rotting of the seeds in the wet tests. This is shown in the tests with Cucumber seeds, in which the drier tests gave similar or even smaller totals than the wet tests.

Influences of the Soaking of Seeds before Sowing.—Great gain in rapidity of sprouting, counting from the time of planting, may be expected as a rule, if seeds are previously soaked in water; and the longer the seeds are soaked, within reasonable limits, the greater is usually the gain in rapidity of sprouting. This fact is interesting, in face of the experience that very profuse watering after sowing gives an opposite result. — This gain in rapidity of sprouting in soaked samples is really fictitious, however, inasmuch as germination actually begins in the soaked seeds before the dry samples are sown. In truth, the soaked seeds are sown earlier than the dry ones. If this advance in period of sowing is added to the date of sowing of the dry seeds, it will be found that dry seeds, as a rule, sprout fully as early as soaked seeds, and many times much earlier.—Total amount of sprouting does not appear to be influenced by soaking.—Similar results are not to be expected from all species of plants.

Influences of Character of Soil upon Sprouting.—Variations in results of testing may sometimes be expected in consequence of character of soil in which the tests are made.—In the present instance, low

results in potting soil as compared with tests in sand, appear to be due to the greater amount of water held in the earth, causing the seeds to rot. The results may, therefore, be studied in connection with those upon the influence of varying amounts of watering.

Influences of Light upon the Sprouting of Seeds.—Very great differences in results may sometimes be expected between samples exposed to light during the process of sprouting, and those kept in darkness. —When such differences occur, they indicate that light retards or even wholly prevents germination.—In some species this influence of light is greatly marked, while in others it is not apparent.—It is apparent that those apparatuses which test seeds by holding them on a porous plate above water, are to be looked upon with distrust, unless provided with an opaque covering; and even then they may prove unsatisfactory, as the experience with the Larkspur seeds indicates that best sproutings follow planting in the soil.

Weight of Seed in Relation to Sprouting.—Variations in results of testing, both as regards rapidity of sprouting and the total amount, may be expected between seeds of different weights in the same sample.—This variation is much greater in some species than in others. In our tests the variation was particularly marked in Cabbage, Radish, Sweet Pea, Bean, Gesse (Lathyrus sativus), Burnet (Poterium sanguisorba), Martynia, Orach.—As a rule, the heaviest seeds in any sample give earliest and highest results.—In some cases, the lightest seeds in the sample give earliest and highest results, apparently because the heaviest seeds, with which they are compared, are over-ripe; or, in some instances, under-maturity may result in earlier germinations, and such seeds are sometimes light in weight.

Colour of Seed in Relation to Sprouting.—Seeds which differ widely in colour in any sample frequently give different results under test.—This variation in results may lie in greater rapidity of sprouting, or in higher total amounts, or in both.—The relative values of seeds of different colours vary with each species, or sometimes with each sample.

Influences of Latitude upon the Sprouting of Seeds.—Northern grown corn appears to germinate more quickly than Southern grown corn.

Variations in Duplicate Tests under Like Conditions.—One test cannot be accepted as a true measure of any sample of seeds.—Variation in duplicate tests is likely to be greater when seeds are planted in soil than when tested in some sprouting apparatus like the Geneva tester.

Comparisons of Results of Seed-tests with Results of Actual Sowing in the Field.—The table indicates that actual planting in the field gives fewer germinations than careful tests in conditions under control. This difference in total of germination, even under favourable conditions of planting, may amount to over 50 per cent.—In planting, due allowance should be made for the comparatively bungling methods of field practice by the use of greater quantities of seeds than would seem, from the results of tests, to be sufficient.

General Summary.

1. Variations in temperature may cause variations in rapidity of sprouting.

2. An essentially constant temperature of about 74° gives quicker results than an ordinary variable temperature of a similar mean.

3. It is probable that any constant temperature gives quicker results than a variable temperature of which the mean is the same as the constant temperature.

4. As the mean temperature lowers, sprouting, as a rule, becomes slower.

5. In some instances, greater rapidity of sprouting due to a constant temperature of 74°, does not appear to be correlated with greater per cent. of total sprouting. In Beans, however, greater per cent. of sprouting appears to follow greater rapidity of sprouting.

6. There is probably a tolerably well-defined optimum temperature for each species of plant, in which best results from seed-tests can be obtained. This limit is not closely determined for most garden seeds.

7. The quantity of water applied to seeds may determine both the rapidity and per cent. of sprouting.

8. A comparatively small amount of water gives quickest and largest results.

9. Greater quantities of water than are required for best results, lessen rapidity and per cent. of sprouting either by causing the seeds to rot, or by retarding germination, or by both.

10. The soaking of seeds in water before planting does not appear to hasten sprouting, if the planting time is reckoned from the time at which the seeds are put to soak. But if planting time is counted from the time of placing the seeds in soil, quicker sproutings are the result; this method of reckoning is incorrect, however.

11. The soaking of seeds does not appear to influence the total amount of sprouting.

12. The results of soaking appear to vary in different species.

13. The character of soil in which the test is made may influence the results, both in rapidity and per cent. of sprouting.

14. Light has great influence upon the sprouting of the seeds of some species.

15. When light has any influence, it retards or wholly prevents sprouting.

16. The effects of light upon sprouting are different in different species.

17. The weight of the seed is often a tolerably accurate measure of its viability, as determined both by rapidity and per cent. of sprouting.

18. As a rule, heavy seeds germinate better than light ones of the same sample.

19. Seeds of different species may vary in sprouting in reference to weight.

20. The colour of the seed in some cases is a tolerably accurate measure of rapidity and per cent. of sprouting.

21. When there is any variation in viability in reference to colour, it is usually found that the stronger sproutings occur in the darker coloured seeds.

22. The relative value of seeds of different colours vary with each species, or sometimes with each sample.

23. The latitude in which seeds are grown may determine their behaviour in germination.

24. Northern grown corn appears to germinate quicker than southern grown corn. It is to be expected, from our knowledge of the variation of plants in reference to latitude, that seeds of most species will give similar results.

25. Variation in results of seed-tests may be due to the apparatus in which test is made.

26. Those apparatuses in which the seeds are exposed to light are to be distrusted.

27. Those apparatuses which afford no protection to the seeds other than a simple layer of cloth, paper, board, or similar cover, are usually unsafe, from the fact that they allow of too great extremes in amounts of moisture.

28. The so-called Geneva tester appears to give better results of sprouting than tests made in soil, probably from the fact that moisture and temperature are less variable than in the soil tests.

29. In order to study germination to its completion, tests must be made in soil.

30. Tests made indoors are more reliable than those made in the field.

31. One test cannot be accepted as a true measure of any sample of seeds.

I. The results of a seed-test depend very largely upon the known conditions under which the test is made.

II. Results commonly vary between tests made under apparently identical conditions, even with selected seeds. Therefore—

III. The results of actual ordinary planting in the field cannot be considered a true measure of the viability or value of any sample.

IV. Rapidity of sproutings, unless under identical conditions, is not a true measure of vitality or vigour of seeds.

V. There appears to be no pernicious adulteration of garden seeds in this country, and, as a rule, there are no hurtful impurities.

In the ordinary farmer's garden seed-testing is perhaps of little or no value, but to the market gardener, who plants considerable areas to special crops, and to the seedsman, it is highly profitable. It is possible that in some cases the character of the crop can be prognosticated with some degree of certainty from behaviour of plants in germination, wholly aside from percentages of sprouting. The studies of experts in this country and Germany, indicate that when accurate information is desired as to the value of seeds, the seed-test should present at least the following data: Name of variety; where grown; when grown; how kept; per cent. by weight of foreign matter; per cent. by weight of apparently good seeds; nature of foreign material; weight of seeds; manner of testing; number tested; average and extreme temperatures during trial; first germinations in hours; last germinations in hours; per cent. by number germinated; per cent. unsprouted but sound at end of trial; date of test; estimate of agricultural value. *L. H. Bailey.*

SWAKELEYS.

Adjoining Uxbridge on the east is Swakeleys, the manor house of Ickenham. The mansion itself is a fine example of a Jacobean building, and bears the date of 1638, in which year it was built by one Edmund Wright, through whose daughter it afterwards came into the possession of Sir James Harrington, who was one of the judges of the luckless King Charles I. Its next owner, Sir Robert Vyner, entertained Charles II. at a dinner in the Guildhall; the estate is now owned by T. T. Clarke, Esq., an octogenarian, whose family bought it in 1750. The origin of the name of the estate itself is buried in tradition, but the present house is one of the finest of its style in Middlesex, and may be classed with Holland House, Kensington.

The estate consists very largely of park and pasture land, and the approach from Uxbridge Common leads through a prettily wooded portion, till a view of the house is opened up right across a piece of ornamental water, as seen in fig. 59, which shows the carriage front of the house looking from the north. The other illustration, fig. 57, p. 409, is the house seen through a fine avenue of old Elms, which leads on to the eastern side. The whole place, with the exception of a comparatively small portion of land immediately surrounding the house, is traversed by "rights of way," providing delightful walks for the village folk.

In the flower garden some 3000 to 4000 Pelargoniums are employed each year, and other plants amount to another 10,000. Quite recently beds of Pelargonium Henri Jacoby were still in fine flower, and the Czar, Flower of Spring, and Lady Plymouth, are largely used. But the feature of the garden is the herbaceous border, where a good collection of plants may be seen, and in which the owner took until recently a great personal interest. A noteworthy experiment was made last year with some tuberous Begonias which had been planted out, and on the approach of winter, instead of removing them from the ground, the bed was covered with a layer of cocoa-nut fibre, and during this season there has been a wealth of bloom on these plants. There is a good plant of Bougainvillea speciosa which has been in flower since March, and is planted so as to afford but little root-room, in order to induce flowering. In other houses is a number of decorative Ferns, chiefly Adiantum; and A. Farleyense was succeeding well in a cool house. Mention must also be made of a collection of Orange and Citron trees, laden with blossom, and a strain of Zinnias growing about 3 feet high.

The walled-in kitchen garden is two acres in extent; Peaches and Nectarines are grown on one of the walls, which is 180 feet long, with a height of

12 feet, and here there has been a very heavy crop of fruit this year. Early Beatrice, Noblesse, Royal George, Dr. Hogg, Crimson Galande, and Lady Palmerston are among the Peaches; and of Nectarines, Lord Napier, Pine-apple, Violette Hative, Victoria, &c. Lettuces and Endive are extensively grown, a salad being required every day of the year.

Hardy rosette Cabbages, Veitch's Autumn Giant Cauliflower, and for succession, Veitch's autumn protecting Broccoli, and other general kitchen crops are all well done here, much to the credit of Mr. Johnson, who has held the head gardener's place for twenty-five years. For all purposes, the Rousham Park Hero Onion is preferred as one that gives a good yield, as much as twenty-nine bushels being gathered from a little over six poles of ground this year. Notice must also be made of a bed of tuberous Artichokes with tops 14 feet long! and an Asparagus bed still bearing well which is over 100 years old.



Fig. 57.—Swakeleys, near Uxbridge: the elm avenue. (see p. 408.)

The Bulb Garden.

BULB PLANTING.

The present time is all that can be desired for the planting of bulbs, so that this work, wherever practicable, should be proceeded with at once. Especially anxious to be once more in the soil are such things as Daffodils, and Spanish and English Iris. Some few bulbs of the first-named, which have been upon the surface, and therefore influenced by the moisture of the soil, and heavy dews have made splendid roots 4 inches long right into the earth, whereas dry healthy bulbs will present a clear white ring at the base; indeed, these may be traced quite easily endeavouring to force their way through. Facts such as these are indisputable, and all desiring a full measure of success should be up and doing. The bulbous Irises, for similar reasons, should also be planted as speedily as possible. Great care is needed in storing these while drying them, and mould and decay are freshly collected and imported bulbs of the rarer kinds of Erythroniums; the best course to pursue is that of planting in rather dry and very sandy peaty soil, as soon as received, and keep them without water for a few days; then apply it gradually till you are sure the tubers are plump and healthy, when the ordinary treatment will suffice.

In its behaviour when out of soil, Leucojum vernum is somewhat similar to the last group, though not to so great an extent; it should, nevertheless, be planted not later than September, and it is far better when planted in July, if the bulbs were procurable, which would give them a fair chance. We are apt to forget that such as these are among our earliest flowers of the year, and, as a result, they mature their growth in proportion, and should, therefore, be replanted earlier than other bulbs; too frequently, however, all that will remain sound and plump are allowed to do so, and thus their patience and endurance are annually imposed upon.

Lilium candidum should also be seen to at once, for they are already on the move, and a good soaking rain will make them very active at the root, after which they can only be replanted with much loss of roots; dried bulbs, on the other hand, may be obtained from the dealers in such things for some time to come. *J.*

The Crocus.

The autumn-flowering Crocus in numerous species and varieties, form an interesting and pleasing feature in any garden. They are beautiful in any position. We have them in the front row of herbaceous borders, in suitable positions in the rock gardens, and also in pots. In a nursery garden the main point is to propagate stock, and the bulbs are planted in lines, with the allied species and varieties together. In looking over Messrs. Barr's collection lately, I was struck with the masses of some of the white forms. C. nudiflorus albus has flowers of pure white, and orange stamens. It is probably the white form of C. asturicus; indeed, Mr. Baker, in his excellent review of the species Crocus in the *Gardeners' Chronicle*, 1875, p. 1633, gives C. asturicus as a variety of C. nudiflorus, whereas Mr. Maw makes C. asturicus a distinct species. He says:—"Though in general aspect resembling C. nudiflorus, it is readily distinguished by its bearded throat, and the partial development of the leaves at the flowering-time, when they appear just above the sheathing leaves."

C. pulchellus albus is very lovely, and not only so, but it is one of the most ornamental of the genus as a garden plant. The ordinary form is also very free flowering, of a lilacy-purple colour, and reproduces itself very freely from seeds.

C. zonatus, taking it altogether, is one of the most desirable to cultivate. Its beautiful rosy-lilac tint with the rich yellow base to the flowers, and the freedom with which they are produced

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makes a mass of it an object of great beauty. Messrs. Barr have a reputed white form, but it is not really white, the petals having a flush of colour in them.

A very pure white form of C. hadriaticus was in flower on October 2. This is quite different from the variety crysobelonicus of Herbert, which was also in flower; but the flowers themselves are of a different formation. Mr. Maw remarks that the lovely normal form is so closely allied to C. sativus, that there is no distinguishing point except the colour of the flowers. Another very distinct white flowered species was C. Boryii, this does not usually flower until quite the end of October or November, and would require glass protection at that time. An interesting and beautiful species is C. cancellatus, also white. Maw gives its time of flowering as November 29, but it was in flower here with the pretty blue purple form cilicicus, and a paler form lilacinus. They grow vigorously and flower freely during September, October, and November. C. Salzmanni has the largest blue-purple flowers of any of them, and is distinct as a species; it varies in the colour of the flowers. C. ochroleucus is also white with a yellow base, and was nicely in flower; it is quite distinct. C. longiflorus is of a distinct rosy-lilac colour, and flowers very freely; the variety C. odorus flowers rather earlier. C. Clusii is of a deep lilac-purple colour. Others in flower were C. speciosus, one of the most plentiful, but very handsome; the true form of C. nudiflorus, and C. medius, purple, with the stigma of a rich orange-scarlet colour.

Besides the wealth of bloom produced by the masses of Crocus, there are immense quantities of Colchicums, the most plentiful being the common Meadow Saffron (C. autumnale) and its varieties. This plant is a dangerous weed in meadows in some parts of the country. The meadows in Worcestershire are studded with its pretty purple-tinted flowers in autumn; and the leaves in spring are said by the farmers to be injurious to browsing stock. Of this common species there are many single and double varieties. C. album longipetala is pure white, with a yellow base; C. album plenum has double flowers of the purest white; there is also a double rosy-purple form, and in C. striatum the petals are striped and flamed with white. C. byzantinum, a very desirable species, is, Mr. Barr says, merely a variety of C. autumnale—it has rosy-purple flowers and produces a dozen flowers from one bulb. The bulbs are as large as a man's fist, and will produce in succession from sixteen to twenty flowers. C. speciosum has by far the largest flowers of any, their colour is a rich, reddish purple with a white base. I find this species flowers best in good soil in a sunny position. The flowers vary considerably in the depth of their colouring.

C. montanum, a low-growing species with lilac-rose flowers, was in flower; C. Bertolonii, a variety of C. montanum, has rosy-purple flowers. It is known also under the names C. Cupani, C. bulbocodioides, and C. Ritschi.

C. Szwovitzianum has flowers of a deep purplish rose, small in size and very pretty. The culture of these plants is simple. Given well-tilled, sandy soil, the corms may be left in the ground for years without needing to be disturbed, and in this consists much of the charm of the hardy plant garden. One can visit the same spot year after year, and find the same lovely flowers springing into life and beauty in due season. I have grown all of them well in heavy soil, but it is well drained, and some leaf-mould and sand was placed around the bulbs. *J. Douglas.*

Crocus speciosus.

I think it is impossible to say too much in praise of this exquisite large autumn Crocus. It is just now delightful on the rockwork at Chiswick, and in my own garden I have a large patch of it under a west wall. It is very free, and though having a rare beauty upon the exterior of the cup, it is even more beautiful internally, for there the colouring is of a rich bluish violet, with purple stripes. I often wonder that it is not more grown. I can imagine that what is now grown as C. speciosus is in all probability a selected or seedling form, richer than the original species. To do it justice it should be planted and let alone, planted in some suitable spot where it will not be disturbed, and where it can go its own way unmolested. This year one or two bulbs forced their blossoms up through a gravelled path round a bed in which a few had been planted. *R. D.*

Belladonna Lilies.

These are the finest and most useful of outdoor autumn-flowering plants, very easy to cultivate, and, when once established, there is little further care or attention required, the important part being to give them the right situation, and a good start at the first.

The most suitable place I have found for these Lilies is in a narrow border, close to the front of a greenhouse wall, and facing the sun, where they get a little warmth through the bricks, from the pipes within, and anyone having a position of this kind cannot possibly utilise it in a better way than by planting it with these bulbs, as during the latter part of September and first weeks of October they send up numerous spikes of fine bloom. Here we have been cutting them in quantity, as they are much admired as vase flowers in the house. They last in full beauty as long, or longer, this way than they do on the plants.

The way to manage, when commencing to cultivate Belladona Lilies, is to dig out the border to a depth of from 2 feet 6 inches to 3 feet, and then drain the bottom by placing thereon 6 inches of broken bricks or old mortar rubbish, and over this a layer of turves or partly-rotten manure, after which the soil may be returned, but if this is not of a light nature, it should be made so by adding sand and leaf-mould, and well mixing the whole up together. This done, the next thing is to plant the bulbs, which should be put in at about a foot apart, and 9 inches deep, when, after a few years, they will so increase as to form a thick mass of flower stems. What militates against the free flowering of the plants is the early growth they make in spring, at which time the leaves are tender, and if not protected in some way they are apt to get injured by frost. To prevent this, it is a good plan to cover the crowns thickly with cocoa-nut fibre or other light material, and stick a few branches of evergreen in front of the plants. Thus sheltered, they will be safe, and, by making plenty of foliage, the bulbs become strong by the autumn. *J. S.*

FRUIT CULTURE.

There is no longer any doubt that fruit tree planting has been taken up in earnest by landed proprietors and others in certain favoured districts. Should the movement go on extending, some difficulty may be experienced in obtaining the best sorts of Apple trees in quantity. It would be quite possible to form a "corner" in such varieties as Peasgood's Nonsuch, Northern Greening Improved, or Bismarck Apples, and although Cox's Orange Pippin and Lord Suffield varieties have been multiplied at a great rate, existing stocks would be speedily exhausted, if planting on a large scale were to become general. Bush or pyramid trees on the Paradise stock, planted at 6 feet apart, soon mount up into big figures, and there is plenty of good land crying, "Come, plant me," which would require millions of trees to stock it.

The nursery notes which appeared in the *Gardeners' Chronicle* of September 9, refer to the large stock of Messrs. Geo. Bunyard & Co., but extensive though it be, a brisk demand upon a scale worthy of so important an industry as fruit growing would soon exhaust it, and also the stocks of the other large fruit tree raisers. It would be wise, therefore, on the part of all intending planters to give their orders without delay, not only because early planting gains a season, but for the reason which may be inferred from what is above stated as to the limited stock of choice varieties in fruit bearing condition, and the probability of the demand exceeding the supply. It will be easier to obtain "maidens" than trees of older growth, and these should not be severely pruned in the winter or spring after planting. Some of my finest fruit this year is from "maidens" planted last autumn. The older trees are more difficult to pack, the fruit spurs being liable to get broken in transit. Of course there is an advantage in price, and the purchaser of "maidens" can prune and shape them to his liking; and they seldom or never fail if properly planted.

I have recently enjoyed the privilege of going over the extensive nurseries of Messrs. Geo. Bunyard & Co., and it gave me great pleasure to see with what spirit and judgment the business of fruit-tree growing is conducted. Much of the land at the Allington Nurseries has not long been broken up, and the healthy colour of the foliage and free growth of grafts and buds show how much depends upon fresh ground in the rearing of fruit trees. I have always found the Kent trees move well, as the roots are fibrous and close at home. They have no ugly knees or elbows, the grafts or buds having been inserted at the ground-line [usual practice. Ed.] so as to facilitate the emission of "own roots," and to furnish as little resting-place for American blight as possible. This pest appears to be almost unknown at these nurseries, and the freedom from blight of all kinds is remarkable. I saw great breadths of Paradise stocks waiting for buds or grafts, the favourite varieties being the Nonsuch and Broad Leaf, in preference to the French Paradise. Hitherto a difficulty has been experienced in raising standard Apple trees on the Paradise stock, but Mr. Geo. Bunyard showed me some upright cordons on Paradise, which, after bearing fruit from the side spurs for a time, had ultimately formed heads, as though relieved at being allowed to get out of the "cordon" form. The "Crab" stocks of the trade vary very much in character. They are generally raised from French seed, and more often than not manifest a cider Apple parentage. Comparatively few of the seedlings are true Crabs; there is, therefore, a degree of uncertainty with the Crab stock, whereas the Paradise stocks, being propagated by cuttings and layers, may be relied upon with certainty for fixed character. *W. R., Streatham Hill.*

THE APIARY.

Mr. Alley's method of queen-rearing is a great success. I can readily get from fifty to seventy queen-cells every time by simply following his directions. His method can be applied to, and as many fine queen-cells obtained from, a colony that is just made queenless. Take a frame of empty comb; insert a knife at one end of the comb, about 3 inches from the bottom; draw it towards the other side of the comb in a circular line, striking the middle of the comb about 1½ inch from the bottom, and coming out on the other side of the comb 3 inches from the bottom. Now have a very sharp, thin-bladed knife, a little wax just melted, and a tin cup of hot water, all handy, in a room warmed to about 100°. Secure a comb of eggs from the selected queen; cut a sufficient amount of it into strips of one row of cells; cross-cut these strips into two-cell pieces; dip each piece into the melted wax, and quickly fasten to one edge of the cut comb, which stands inverted convenient to the melted wax. These little pieces of comb should be about half-inch apart, and project slightly outward. Another row can be placed on the other side of the comb, and also projecting slightly outward. Give the manipulated piece at once to a colony from which the queen is just removed, and they will scarcely ever fail to give a good queen-cell for every egg that is thus given them in good condition.

If the comb containing the eggs is old and tough, it is well to pare down with a sharp knife these rows

of cells, taking off about one-third. I would prefer the old tough comb, because it is more easily handled. After three or four days it can be removed to the upper storey of a colony, with a queen-excluding honey-board, to be finished, and another frame of eggs given, and when it is ready for removal, other cells will be found in the colony which can be removed, and the process repeated.

Mr. Alley is a noted queen-breeder in the United States; and the above, though principally from his book, is the experience of Dr. Morrison, also of America. It is well worth the attention of the general reader. "Nihil sine regina" is the motto of one of our greatest bee firms, and it is quite certain that a colony of bees, however good, will soon diminish, and be brought to naught, if the queen is not of much account. I had a miserable colony of bees at the commencement of this season, which has yielded most honey, and which is now my best, through the good offices of a first-class queen, introduced in the spring. *Bee.*

Orchid Notes and Gleanings.

ODONTOGLOSSUM ALEXANDRÆ WILSONII.

This thrives under the same treatment as that which suits the typical plant, that is to say, it should be grown in a pot, and the pot must be well drained; the soil should consist of fibrous peat and sphagnum moss in about equal parts, and this should be pressed down firmly. Nearly all the Odontoglossums require a fair supply of water during active growth, but it should pass quickly away from the roots, or not be allowed to lie round about them, or become stagnant. In the resting season, if they really have any season of actual rest, the roots must be kept in a moist condition, for in their native country they are subject to heavy rains at this season, and at this time they bring forth their flowers, and commence their new growth, and when the blooms are over, and the rains cease, they enter upon a cooler season, subjected to heavy dews. These plants when under cultivation are benefited by cow-manure, and we apply it in a weak state diluted with water, pouring it beneath the stages in the evening; this we find helps them very much in the development of bulbs and leaves, and tends to give colour to both.

Another great factor necessary to produce sturdy plants, is full exposure to light. We have found that Odontoglossums like all the light it is possible for us to give them, but they do not like the strong sunshine; a little, however, serves to make them more robust, and ripens up the bulbs, and well-ripened bulbs flower better, and withstand our dull winter weather far better than sappy growths. The house in which these plants are grown should be kept clean and smart, as this displays the full beauty of the plants, and they have a far better appearance than plants present when kept in a slovenly, ill-kept house. "*Orchid Album.*"

Cattleya Eldorado virginalis.

The cultivation of this plant is very easy, but it requires to be kept dormant during the winter months. We find it thrives well in baskets suspended near the roof-glass, and also equally well in pots placed on the side stages of the house, where they have the advantage of the glass at the sides, in addition to that on the roof. The pots or baskets should be of medium size, over-potting being the great failing of young beginners in Orchid culture, to whom these remarks are specially directed, although re-potting will be necessary as the plants increase in size. We find that the best peat and sphagnum moss are the most suitable materials for this plant, although we have often seen other materials used, but in most cases those who dabble in these materials have to return to the peat and moss to restore their plants to health; indeed, we have seen many plants quite spoilt through potting in an eccentric manner, for during the forty years we have been engaged in the cultivation of Orchids, we have never had any occasion to alter our system of potting, nor have ever seen any good results accrue from the use of the so-called improved potting material. This Cattleya requires the warmest end of the Cattleya-house to produce vigorous growth, and it also delights in a moderate amount of water during the growing season. After the flowering is past and the growths are well ripened up, the water supply must be considerably reduced, and the plant should be kept as quiet as possible, in order to check growth before the spring; the want of attention to this is the cause why Cattleyas that flower on the season's growth in the autumn so seldom continue to thrive, for if not kept dormant, the growth they make through the winter months does not ripen sufficiently to produce a flowering bulb the next season. The best time for repotting is in the spring, just when the young roots and growths begin to appear, when, as the sun increases in power, a slight shading will be found necessary, in order to preserve the foliage from disfigurement, and to preserve it in good colour. *Orchid Album.*

Bifrenaria aurantiaca.

This is a variety which will thrive well on a block of wood or on a raft. This latter is a good utensil to cultivate the plant upon, as it enables the flowers to be seen to the best advantage; but being grown in this way, it requires more attention in watering than when cultivated in a pot, which was the old-fashioned way in which we used to grow this species. During the time of its active growth the block or rafts should be taken down and well soaked in a tub of water, in order that a greater amount of moisture may be administered to the roots than can be given by syringing; but every day in summer, and even twice daily during the very hot weather, syringing overhead will be necessary. After growth is completed, and during the winter season, very little water is necessary—just sufficient to maintain the bulbs and leaves in a plump condition being all that is required, save the flowering plants, which, of course, require more, to enable them to properly develop their blossoms. Some living sphagnum moss must be kept about its roots and it should be kept in a growing condition. If the moss should decay, remove it, and place some new and sweet material about the roots, as they cannot form strong and vigorous bulbs with any decayed moss or soil about them. The Cattleya-house will be most congenial to its development, giving it all the light possible, save full sunshine, when a light shade is necessary to prevent the leaves from becoming disfigured. "*Orchid Album,*" 1889.

ALDENHAM HOUSE, ELSTREE.

The fine estate of Henry Hucks Gibbs, Esq., affords a perfect example of what a garden should be, fruits, flowers, vegetables, and plants being each accorded a fair share of attention, only the best of each class being admitted, and these, under the well-known skill of Mr. Bennett, always appearing at their best, and oftentimes exhibiting excellence not even suspected by their raisers or introducers. During the season the bedding is, however, the chief attraction, as we have before intimated, when giving (Nov. 12, 1887) an illustration of a portion of the sub-tropical garden, which is, however, even more extensive and finer this season, the noble sweep of tropical foliage arranged on the closely-cut lawn, and backed by ornamental trees, being in itself a sufficient reward for all the care and trouble which must have been taken with the planting and arrangement of it. Following a graceful curve, there is no attempt to observe lines or regular masses of the plants used, but all have been planted with careful arrangement, in much the same manner as a large winter garden would be arranged. Thus, in front of the dark-coloured Yews and silver variegated Acers, which are backed by taller ornamental trees, we have gigantic specimens of red and green-leafed Ricinus, Nicotianas, green and variegated; Wigandias, and other noble foliages on plants 6 to 10 feet in height. Then come Ferdinandias, Melianthus major, large-leafed Solanums, &c., with those rich flowering new Cannas now becoming such favourites, and elegant specimens of Zea, green and variegated. Towards the front dwarfer plants are arranged—Abutilons in flower, Perilla and Solanums, and combining the whole admirably, the front, 3 feet or so, has specimen Chamæpeuce diacantha, about 3 feet apart, worked in with Alternanthera amœna; Coleus Verschaffelti and Sedum glaucum, the only break in the even green turf around the fine display being an oval bed carpeted with the neat little Kœniga (Alyssum) variegata, from out of which rise innumerable tall spikes of Lobelia cardinalis Queen Victoria, whose brilliant red flowers seem to glow when viewed against the starry white flowers and variegated leaves of the Kœniga beneath it, and forming a delightful picture to linger over. Continuing the curve of the sub-tropical garden on the other side, is another style of bedding, in which Golden Pyrethrum, Iresine, variegated Pelargoniums, and dark Heliotropes, play a prominent part, the background being formed by Cactus and pompon Dahlias, and ornamental trees; while still nearer the mansion, is a pretty geometrical garden, planted in the carpet style, and another, admirably contrasting with it, planted with scarlet and pink Pelargoniums, and other flowering plants, and both relieved by fine beds of Cannas, beautiful in leaf and flower. The brightness of the whole is considerably heightened by the orange-scarlet bunches of berries on the well-trained Cratægus pyracantha, which covers a portion of the mansion. Looking from the flower garden fine views disclose themselves on every hand, from beneath the noble old Oaks and Elms with which the grounds are beautifully studded, and over the clumps of Rhododendron, to which the Lilium auratum now has to supply the flowers; along the covered ways densely clad with Roses, Jasmines, Clematis, and many other plants useful for the purpose, and leading down to the bright red ornamental terrace, or past the labyrinth-like rockery now clad with Ivies, Honeysuckles, Ferns, and flowering plants. Each part shows forethought and diligence. In the garden it is pleasant to see such old favourites as Calceolaria amplexicaule and blue Salvia patens mingled with Tropæolums, and producing an effect which few more modern introductions could match, and many other such-like combinations in which old plants are put to good use. Several like instances occur in the Pinetum, and perhaps the most beautiful example of all is one of the common scarlet fruited Berberis vulgaris; at the end of the terrace, too, a fine old stone seat is rendered very massive and more beautified by the Phillyrea which furnishes the back, and the Portugal Laurels, which are planted at each end, these shrubs being clipped to harmonise with the design of the seat.

Outside and inside the walls of the well-cropped kitchen garden, the main walks and borders are planted with herbaceous perennials and large banks of pompon Dahlias; everywhere the Sweet Peas and other showy annuals being used to give variety, and add their quota to the ever-increasing demand for flowers. Among them the Rudbeckias and Helianthus are, as always at this season, conspicuous by their golden blossoms, Veitch's miniature perennial Sunflower being the most prolific and showy, and very useful for cutting. The Gladioli, too, enliven the borders, and fronting the houses stand a vast and well-trained army of show Chrysanthemums, soon to produce blooms, it is hoped, of the quality for which Mr. Beckett's show stands are famed wherever he exhibits.

The Houses.

Just in full bloom, in a cool-house, are large numbers of perfect plants of Mdlle. Desgrange, and its yellow sport, G. Wermig, both of which are deservedly favourites. Next comes a pretty display of Tuberoses in flower set up with Grevillea robusta; then a house partly filled with a very beautiful strain of

Celosias of all shades of yellow and red. The house of Eucharis amazonica has specimens in beautiful health, and plenty of flowers and spikes in all stages. The house of Crotons gives a fine example of how these plants should be cultivated, that is, grown freely and as at many other places, a very bad supply this year; but indoors there have been fine crops of Peaches, Nectarines, Grapes, and as examples still left, are two finely cropped vineries, a good house of Figs, and another of Melons.

DESIGN FOR A GARDEN AND GROUNDS IN THE LAKE DISTRICT.

In this plan (fig. 58), kindly placed at our disposal by Mr. Thomas Mawson, of Windermere, a rising young landscape gardener, is shown a garden laid out on sloping ground, and for the good keeping of which a man and a boy will suffice. The land slopes to the west and south-west, and is surrounded on three sides by similar properties forming portion of the same estate. Public footpaths run along the entire length of the higher side, but these are screened by plantations and shrub-



Fig. 58.—Plan for a garden in the Lake District: U, tennis lawn; G, kitchen garden; R, the house.

of fine colour, but never allowed to get too large or scrubby in appearance. The Orchid department, although not large, has in it well cultivated specimens one and all; in bloom being some good examples of Cypripedium Spicerianum and other Cypripediums, and in the cool-house was a fine display of Masdevallias and Odontoglossums.

Of fruits outdoors there has been at Aldenham, Still another extension of the garden is contemplated, and its admirable condition at present gives good warranty for the venture. *J. O'B., Sept.*, 1889.

Quito.—Dr. Von Lagerheim, of Lisbon, has been appointed Director of the Botanic Garden, and Professor of Botany in the University of Quito.

beries. The kitchen garden, G—left-hand top corner—is hidden away in a hollow, which accounts in part for its rather peculiar shape; the other reason for placing it there, being the greater depth of soil found in that part of the grounds. The house, standing high, enjoys some excellent views (which are indicated on the plan by the radial lines) over the country in the front, and of Windermere itself. The general idea in forming the walks, plantations, shrubberies, &c., was to take advantage of the natural formation of the land, and make an effective whole without any great outlay being incurred in removing earth and blasting the rock which lies pretty close to the surface.

The walks it will be seen give easy and free access, without being unduly circuitous, to all parts of the garden. In planting, good use will be made of the best deciduous and evergreen shrubs, those giving warmth of colour and good shelter having the preference.

The choicer hardy Conifers will likewise be planted, as well as Sycamore and Oak; fine specimens of these last-named trees are found on the site. American plants, Heaths, Roses, Japanese Maples, Retonosporas, and Pampas-grass, are amongst those plants of w hich extensive use will be made.

Plants and Their Culture.

Autumn and Winter-flowering Plants (*continued from p.* 390).—A few of the early species of Eupatorium may be placed in a warm house, to hasten the blooming. E. Weinmannianum is one of the best for cutting at, and after, this date. Cactus Epiphyllum truncatum will now be useful if the plants were grown through the summer months as advised, and their growths are matured. A few plants of the earliest varieties should be introduced into a warm house, keeping them near to the light, so as to get brightness in the colours, and as soon as their flowers are expanded they should be placed in a temperature a few degrees lower, or placed at the cooler part of the house.

Most of the varieties of Calanthes grown now in pits and stoves for autumn and early winter decoration, will have completed their growth, and will consequently require less moisture at the roots, care being taken to keep the foliage in a good condition as long as possible, in order that the bulbs may mature properly. Few plants are more effective when interspersed with Ferns and foliage plants than Calanthes, and no collection of plants is complete without them. The greenhouse varieties of Rhododendron will now be useful for decorative work and for cutting. These indispensable plants require a temperature of 55° to open their buds freely, and a slight damping of the stems and pots (not syringed all over); they will then break freely from the old wood, and make a free growth. There are many beautiful varieties among them, of which Duchess of Connaught, Duchess of Edinburgh, Princess Royal, Princess of Wales, Lady A. Fitzwilliam, and fragrantissimum are very good.

The Hothouses.—Everything connected with the re-arrangement of these structures should now have been completed, the fall in temperature necessitating the removal of all stove plants from other houses. All plants which may have been used for furnishing the greenhouse during the summer months should be removed to their winter quarters. The arrangement should be carefully undertaken, so as to get the best effects from the different foliage plants, which are the chief plants for effect in the winter. Many large plants are kept after all traces of their former beauty have disappeared; this should be remedied by the propagation and purchase of young healthy plants—such plants have a greater decorative value than old plants in poor condition.

The temperature given last month will still apply at this date, viz., 65° to 70° during the night, and reduction of the moisture, shutting up early in the afternoon, and so managing the syringing of the inmates as to allow of the due evaporation of moisture before night; the thermometer may run up 80° to 85° at closing time. The floors and stages and all available spots should be damped down at a later time in houses in which the higher temperatures are maintained, but the plants should not be wetted. The shading materials should be taken down and stored away, taking care that all these things are thoroughly dried before removal. I wish to call attention here to the useful canvas covering introduced by Messrs. Eddy during the last few years, as a protecting material for plant houses; I have used it for plant houses for some time, and find it beneficial to the plants, as it does away with necessity to overheat the pipes; during frosty weather we use the covers for most of the plant pits and small houses. Allamandas will now be found useful for furnishing cut flowers, and the plants should get all the light possible to give substance to the blooms: the same remark applies to Dipladenias, and both species should not be kept too dry. D. Boliviensis will be found of great service. Anthuriums which bloomed early should be kept a little drier at the root, and placed at the cooler end of the stove to rest them; and they will be found to do better if treated in that manner, than when kept in the same temperature all the year. The later-blooming plants should be encouraged to make new leaves for some time longer.

Alocasias and Marantas should now get less moisture at the root, and be placed at the warmest part of the house, at the same time removing some of the shabby growths. Keep the plants always free from thrips and red-spider. Dracænas must also be syringed to keep down these pests, which infest the under surface of the leaves; this should be remembered when syringing them. Old unsightly Dracænas may be headed back, and the tops struck in a brisk bottom-heat; this is more easily accomplished by the old method of mossing the stem, and partially cutting it through a few weeks before removing the tops. The young stock of Gardenias should now be making rapid growth, and any pot-bound plants may be shifted, plunging them in a slight bottom-heat, to encourage rooting. Keep the plants strictly free from mealy-bug, syringe them daily, and maintain a moist atmosphere.

Tabernæmontana coronaria flore-pleno, which should be grown in the same way, is subject to scale, and will also require close attention to prevent this insect from everrunning the plants. The late-blooming Ixoras will now be found useful for cutting; I. coccinea should now be in full beauty. Plants of Ixora, as they go out of bloom, should be kept drier at the root and in a cooler house than was the case at an earlier stage. Young stock of Ixoras will be growing freely, and should be kept free from mealy-bug and thrips, and the points of the shoots be pinched out, where any are unduly taking the lead.

Crotons are serviceable plants at this season if well grown and coloured. Thrips and red-spider often infest them, and it is necessary to syringe the plants heavily, and always the underside of the foliage, besides affording the roots an abundant supply of water. Any old plants which may have grown unsightly should be cut into shape, when they will take up less room, and be more easily kept clean. Large Palms should have plenty of water, and not have the quantity reduced, especially if the pots are full of large roots; and most of the species of Palms will be benefited by occasional doses of Clay's fertiliser, which will give a healthy green colour to the leaves.

Clerodendrons should be gradually dried off and placed at the back of the stove, if there be no pit or other suitable place. These plants soon suffer if kept in a low temperature. Let them be kept rather drier than most other plants. *G. Wythes, Syon House, Brentford.*

The Flower Garden.

Flower-beds in Winter.—Our flower-beds are still presentable, but the end of the floral season may not be much longer deferred. The mode of winter furnishing the beds has been decided on, and planting will begin without needless delay when once the frost has destroyed the summer bedders. In former Calendars I have stated that all hardy plants that could be made available were used, in order that the changes to be made should be as slight as possible. Where shrubs and edgings remain in the beds—variegated Periwinkle, Erica herbacea, Euonymus radicans variegata, and small variegated Box take the place of the summer bedding plants, other beds may be planted with small Mahonias, Aucubas, Yews, Hollies, Retinosporas, Junipers, Heaths, common and variegated Thyme, Stachys lanata, &c. Very large beds, which in summer are filled with Dahlias, or fine foliage plants, may be planted in winter with medium-sized, evenly-shaped shrubs, in any desired pattern or mixture, and the ground between these may be carpeted with flakes of closely Rabbit-nibbled Heather. In my opinion, no summer flower bed ever looks more trim or effective than this arrangement does; and it is one which affords space for planting spring flowering bulbs. I do not forget that Heather is not so readily obtainable everywhere as it is here, but cocoa fibre is to be had at a cheap price, and this is a passable substitute. It is neat, and its colour makes the most sombre of greens look bright; we use it to cover the soil in all the arrangements that cannot be fully furnished with shrubs, or other hardy plants; space will not allow of my entering into details of all the winter arrangements attempted here. The foregoing is a fair sample of the whole, and I trust some suggestive hints have been made which may prove of service to some persons about to furnish their flower beds for the winter.

Herbaceous Borders in Winter.—These cannot be, and, in fact, it is not expected that a border of herbaceous plants should be kept in trim form during the winter; but there is always some work to be done amongst the plants at that season, such as the renovation of the soil of which the border consists, the rearrangement of the plants, and increasing stock by division of the roots, &c. It may happen that there is little of such work to be done, and in that case neatness should rule during the winter.

Sparsely furnished borders may at this season be made more presentable by planting small clumps of Wallflowers, Canterbury Bells, Violas, Pansies, Pinks, hardy annuals, and bulbs. Small plots of Thyme, both green and variegated, the carpeting evergreen species of Saxifragas, also the tufty-growing Sedum glaucum, S. corsicum, and S. Lydium may be planted with advantage near the front of the border in small plots of 12 to 18 inches square; and Hyacinths, Tulips, Narcissus, &c., look well on such a carpet, and if the bulbs are to spare, I would say, plant these first, and the carpeting plants afterwards. *W. Wildsmith, Heckfield Place.*

The Kitchen Garden.

The Lifting of the Root Crops.—Most of the root-crops will now be the better for being removed from the soil and stored in cellars, or laid in some convenient corner, where a covering of litter or bracken can be strewn over them during hard frosts.

The Parsnip crop is one that is better when left in the ground undisturbed, and litter or evergreen boughs placed over the top of some of the rows to prevent frost entering the ground. Should the Parsnip quarter be required for other purposes, the roots may be lifted and stored with the other roots.

Carrots.—When these are lifted, all deformed and undersized roots should be put aside. My plan is to lay the Carrots in trenches, and retain all the foliage. Horn varieties to be served up as young Carrots should be allowed to remain where they are, and some slight protection thrown over them when frosts prevail.

Turnips now of full size may be stored, for if they are allowed to remain long in the ground they become woolly. Successional sowings of these roots will continue to grow for some time yet, and unless the ground be required, the roots will improve by being left in the ground. On the approach of hard weather, some soil may be drawn over the crown of the bulbs.

Salsafy and Scorzonera.—These may be taken up and laid in, in the manner of Carrots, discarding all badly shaped ones.

Chicory, Whitloef.—These may be lifted and laid in, and some, according to demand, may be placed in light soil and close together in the Mushroom-house to blanch. The Whitloef is considered to be in the best condition when it makes a growth in the dark of about 6 inches in height, and it looks then like the centre leaves of a Cos Lettuce. The old tops should be twisted off, and some dozen or so of roots placed in the dark each week.

Jerusalem Artichokes are hardy, but in order to secure supplies during severe frost, some litter should be strewn over the rows. The best shaped amongst the undersized ones should be reserved for planting.

Stachys tuberifera, tubers of which much resemble the rhizomes of the Knot-grass, except that they are more pyriform, are now ready for use, and are best when left in the ground and lifted for use as they are wanted. It is hardy, and keeps well if left in the ground, but if lifted and stored there is a great tendency to decay, especially if the temperature should exceed 50°, but left in the ground there is no loss whatever to fear. In order to be able to secure a supply when desired, the ground should be strewn with long litter. *W. M. Baillie, Luton Hoo.*

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	Oct. 14	Dutch Bulbs, at Stevens' Rooms. Clearance of Nursery Stock, at Noble's Nursery, Sunningdale, by Protheroe & Morris. Bulbs and Palms, at Protheroe & Morris' Rooms.
TUESDAY,	Oct. 15	Nursery Stock, at Goubert's Nursery, Kilburn (two days), and at Brown's Nursery, Chigwell, by Protheroe & Morris. Japanese and other Lilies, at Protheroe & Morris' Rooms.
WEDNESDAY,	Oct. 16	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs and Plants, at Protheroe & Morris' Rooms.
THURSDAY,	Oct. 17	Orchids in Flower, 10,000 Lilium auratum, 10,000 South African Tuberoses, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Oct. 18	Rose Trees, Carnations, &c., at the City Auction Rooms, by Protheroe & Morris. Nursery Stock, at Brown's Nursery, Richmond, by Protheroe & Morris. Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Oct. 19	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—50°.7.

The Nomenclature Question.

A CORRESPONDENT asks our opinion as to the necessity or otherwise for adopting in gardens a new name for an old plant which has been put into another genus and re-baptised by a competent botanist. In replying to this question, various things have to be considered. If the old name is absolutely erroneous and misapplied, then, of course, there is no doubt but that the correction should be made in the interests of truth. If the old name is not absolutely wrong, then we have to consider for what purpose the name is to be used. Is it to be used simply as a means of recognition, written on a garden tally, or in a garden catalogue, without other object?—then we should say, do not change the name. For purely garden purposes, and provided no absolute error of fact and consequent confusion is involved, one name is as good as another, although the laws of convenience and of least trouble prescribe the retention of the older name.

For botanical purposes, the case is very different; then the name to be adopted is not necessarily the oldest, or the one originally applied, but that one which, in the judgment of the botanist, is most in accordance with the truth. Next week, perhaps, further evidence will come to light, or a more correct judgment may be arrived at. In that case, no matter how inconvenient, the student is bound to follow what he believes to be the truth, and adopt a new name if it be required, the old one remaining, of course, as an historical synonym.

The particular case submitted to us was Ruta albiflora, which our correspondent objected to change into Bœnninghausenia albiflora. As his object was purely horticultural, we ventured to recommend him to stick to the earlier and more convenient name. If his object had been botanical, he would not have required any suggestion from us as to the course he should follow. As it is, Ruta albiflora is a well-known name; it is registered, the plant is described and figured, and the propriety of calling it Ruta or Bœnninghausenia is very much a matter of opinion. The student with a library or herbarium at command would have no particular difficulty in finding what he wanted to know by referring to either name, and so the main object of the name is easily attained.

This is a comparatively simple case. Others are far more complex. Take the case of the Skimmias, treated of in these columns some time ago. We ventured to change the name of the plant known in gardens as S. japonica, because we showed that the specific name as applied to that plant was absolutely and entirely wrong. It involved not only matters of opinion but of fact, and was, consequently, misleading and mischievous, so that even for mere garden purposes it was desirable to change it. At the same time, we pointed out that the plant known in gardens as Skimmia oblata was the true japonica. Whether any nurseryman or gardener will accept these corrections and act on them, is another matter. Judging from experience, we should say they will not. For to most of them Pelargoniums are still Geraniums, though the error of fact here involved has been pointed out for half a century.

But the Conifers present the greatest puzzle. What is to be done about such a case as Retinospora? That is ostensibly a genus, with a considerable number of species and varieties, each with its name. As a matter of fact, it is now known for certain that there is no such genus in Nature — the so-called species may be reduced to four or five, and the varieties, so far from being distinct entities, are merely passing stages in the growth of particular plants. Retinosporas, in fact, are mere forms of one or two species of Thuia, of Cupressus, of Biota, and perhaps of Juniperus. The facts admit, generally speaking, of no doubt at all. Nurserymen are now quite familiar with them, because they have ocular evidence every time they pass the seed-beds or quarters; but, for all that, though in botanical treatises the name will have to be relegated to the huge assemblage of synonyms, it is not in the least likely that the name Retinospora will be abolished in gardens or garden catalogues.

One great source of confusion is the form given by gardeners to the names they apply. Gardeners and their employers, especially if they happen to be raisers, not unnaturally consider themselves at liberty to attach what names they please to their own plants, provided that the same name has not been previously given to another plant. Of course no one would wish to interfere with their privilege so long as they do not obtrude it upon other people, by exhibiting it or writing about it, or talking about it *coram publico*. If they do so, then we take it that they are bound, for the common advantage, to conform to some rule expressed or understood.

The botanical rule is that no new name shall be recognised, or considered authoritative unless it is accompanied by an adequate botanical description published in some publication of repute in the botanical world. A name so given and registered implies some sort of a guarantee that its author has made a comparative examination of the supposed new plant with others, and that he has availed himself of all the means of research within his power, whether in gardens, herbaria, books, or pictures, to ascertain whether the plant is new or not. Very possibly, however careful he may have been, he may eventually prove to have been in error, and his name may have to give place to another; but this is of minor consequence, because the published description and the form of publication—the register—allow of easy reference, and it is easy for the student to arrive at a conclusion as to what the author meant.

But if a gardener, professional or amateur, apply a specific name to a plant without these formalities, what guarantee is there that he has taken any trouble at all to ascertain whether the plant is a species or not? None at all. To him it is of no consequence what its botanical position may be. Generally the novelty is a mere seedling, which the raiser himself well knows is not a species, in any acceptation of the term. Hence the reason that we so strongly deprecate the too common practice of raisers applying a Latin specific name to their plants, thereby giving rise to a false impression, and storing up trouble for the student of the future. These gentlemen we are quite aware are very far from being desirous of wilfully misleading. They are not aware of the impropriety of their practices, and of the false inferences they give rise to. By abstaining from the use of Latin expressions implying a definite, systematic position for the plant, previous botanical comparison, and due publication, the mischief would be avoided.

Gardeners and others are perfectly at liberty to name their plants how they like, provided they do not mislead the public in the manner we have indicated. If the garden names were all in the vernacular, there would be no risk of confusion with botanical names systematically applied, and duly registered. Even for purposes of international usage, where some common language, like Latin, must be employed, the names given for purely garden purposes need not be cast in the form appropriate to names used for scientific purposes. A Frenchman, a Russian, a Hungarian, would have no difficulty in understanding such names as Minerva, Pluto, Astræa—names which mean nothing, and are used merely as tokens. Mr. Shirley Hibberd and Professor Michael Foster hold the view that the name should be indicative of some particular character or attribute of the plant to which it is applied. Of course that is convenient sometimes, but in actual practice it is often found that the disadvantages outweigh the advantages. We remember, some years ago, some Narcissi coming before the Scientific Committee with names framed on this principle. The exhibitor showed some forms of Narcissus minimus—some bigger, some smaller than the average, and named them N. minimus minor, and N. minimus major, N. minimus maximus, and so on. This will serve to indicate the inconvenience of applying names indicative of particular attributes. It is, in our opinion, better not to tie oneself, except in special cases,

to descriptive names, such as the next batch of seedlings or the new importation may show to be more or less inappropriate.

But while the right of owners and raisers to name their plants as they please, subject to the conditions already mentioned, cannot be questioned, we are convinced that there will be a substantial uniformity of opinion, that for the common convenience it would be very desirable that some general plan of nomenclature and registration for garden plants, analogous to that in use among botanists, should be adopted by gardeners. The Royal Horticultural Society has led the way in this matter by appointing a nomenclature committee, which will shortly meet, to discuss the whole matter. If the committee should be able to arrive at any generally satisfactory conclusions, the Society will then be in a position to refuse its sanction to any name that does not fulfil the required conditions. Practically, that sanction would mean that no Certificate would be granted to a plant improperly named. The register of certificated plants would thus, as far as it went, furnish an authentic list of certificated garden plants. The Society could not enforce absolute compliance with its rules, but no doubt its recognised influence would secure general acquiescence. But to secure this desired result the committee must act consistently—not as now, be very virtuous on one occasion, utterly careless on another.

Then there are the questions relating to the naming of hybrids; but these must be left for the moment. Probably they will come before the nomenclature Committee before long, when the collective wisdom may be able to find some means of satisfying the requirements of practical convenience without injury to the interests of science and *vice versâ*.

The Royal Horticultural Society.—On the occasion of the meeting of the above Society on Tuesday last, a paper on Conifers was read by Mr. Coleman, gardener to the Earl of Somers, Eastnor Castle, Ledbury. The lecture covered a good deal of ground, and besides containing much that was historical, the great practical experience of Mr. Coleman in laying-out and maintaining the fine pinetum and specimen Conifers at Eastnor, was well brought out. Excellent collections of Conifers in pots, illustrative of the lecture, were contributed by Messrs. J. Veitch & Sons, Chelsea; Messrs. Paul & Sons, Cheshunt; Messrs. W. Paul & Son, Waltham Cross, and others.



Fig. 59.—Swakeleys, near Uxbridge: the carriage front. (see p. 408.)

The Chrysanthemum Conference.—A meeting of the Executive Committee was held on Tuesday last, with Mr. Shirley Hibberd in the chair. The Chairman suggested that the exhibition should comprehend six groups of subjects, and that these should be examined by Committees of Selection, who would award Certificates of Merit to the best varieties in each group, on the plan of operations at the late Vegetable Conference. This being agreed to, groups and committees were arranged:—

(A) Varieties adapted for garden decoration: Messrs. H. Cannell, W. Wildsmith, H. M. Pollett.

(B) Varieties incurved for specimen blooms: Messrs. J. Wright, D. Donald, W. Mease.

(C) Varieties of Japanese for specimen blooms: Messrs. W. Holmes, E. Wills, R. F. Jameson.

(D) Reflexed Anemone, Pompon, Pompon-Anemone, and single varieties for cut blooms: Messrs. C. Orchard, L. Castle, N. Davis.

(E) Varieties of all classes for trained specimen plants: Messrs. E. Beckett, E. Berry, J. Laing.

(F) Varieties of all classes for decorative plants: Messrs. C. Herrin, R. Owen, W. Furze.

Referees.—Messrs. H. J. Veitch (Chairman), F. W. Burbidge, J. Doughty, R. Parker, J. Lyne, E. Molyneux (Secretary of the Conference), C. H. Payne, and W. Piercy.

It was finally arranged that the Executive Committee and the Committees of Selection should meet in the Vinery at Chiswick at 11 A.M. on November 5.

National Auricula and Primula Society (Southern Section), National Carnation and Picotee Society (Southern Section).—The annual general meeting of above Societies will be held in the Room of the Horticultural Club, Hotel Windsor, Victoria Street, on Tuesday, October 22, 1889, at 4 P.M., by kind permission of the members. The business of the meeting will be the election of officers and committee, receiving the Secretary's and Treasurer's reports, the election of judges for the ensuing year, and other necessary business that may pertain to the annual general meeting. James Douglas, Hon. Secretary.

Tankæa Heldreichii.—Lovers of alpines, remarks H. U. Dammer, will be interested to learn that an importation of this very beautiful plant has reached Germany in tolerably good condition. When I had, on several occasions, the honour of a visit from Mr. Boissier, he always spoke in the highest terms of its beauty, and only regretted that insurmountable difficulties prevented the possibility of getting the plant alive. By self-sacrificing enthusiasm and much energy there has now been accomplished, what at one time seemed to be impossible; and in spite of the Phylloxera laws, the plant is now under cultivation. The undertaking was, however, quite as risky as it was perilous, and a strong military force was necessary to reach in safety the place where the plant grows. It is a

native of the classical Olympus, and is closely allied to Ramondia and Haberlea; the leaves are covered with a beautiful white tomentum, and the cup-shaped flowers are of a violet hue.

Inner Temple Chrysanthemums. — The usual exhibition of Chrysanthemums in the Inner Temple, to which, by the kind permission of the Benchers, the public are allowed free access, will be opened on Tuesday, October 15.

The Peach Orchards of California.— We learn from an interesting article, by Mr. C. H. Shinn, in the *American Agriculturist*, that the Peach is one of the universal fruits of California, and grows everywhere, and that whatever future demands foreign markets choose to make upon this favoured land for Peaches can be abundantly supplied, as the Peach thrives in so large an extent of country. In the best fruit districts of the State, from 25 to 40 per cent. of the entire area planted is devoted to the culture of Peaches. The Peach tree in California often bears some fruit the second year from the bud, and gives a valuable crop the third year. Sometimes 20 lb. of fruit have been obtained from a tree fourteen months from the bud. In the Upper Vaca Valley, an orchard of 400 trees was planted in 1884, and gave £60 worth of Peaches in the third year, and another orchard of 500 trees yielded £280 worth of Peaches in the fourth year after planting. The practice with the best orchardists is to thin the fruit, so as to let a four-year-old Peach tree bear 100 lb. weight of fruit, a five-year-old tree 150 lb., and a six-year-old tree 200 lb. But sometimes a six-year-old tree has been allowed to bear 300 lb. of Peaches without apparent injury. Leading growers say, that if they can be assured of 1 cent per lb. for their Peaches in the orchard, they can do well enough. There are some who think even a lower price would leave a margin for profit. The ambition of the most intelligent growers is said to be to provide cheap fruit for the million. They are aware that a great industry cannot be built up without wholesale methods and a willingness to accept small profits.

Birmingham Gardeners' Mutual Improvement Association.—The first meeting this session of this Society was held on Tuesday evening, October 1. The President, Sir Thomas Martineau, occupied the chair, and about 130 members were present, including Professor Hillhouse, the Rev. J. A. Williams, Mr. Latham, Councillor E. Butler Wednesbury, &c. The President spoke of the great pleasure it gave him to be present on that occasion, and congratulated the members upon the progress which had been made during the past year; and he felt that he had every reason to be proud of the little cutting which he had assisted to put in during the time of his mayoralty, a little more than three years ago, seeing how quickly it had made roots, thrown out its branches, and thoroughly established itself among the educational institutions of the city. He was pleased to find that annual excursions had been inaugurated, knowing, as he did, that a visit to such establishments as Sutton's and the beautiful gardens at Heckfield Place could not be otherwise than instructive and enjoyable. Mr. Wright, of the *Journal of Horticulture*, gave a paper on "The Social, Intellectual, and Professional Position of Gardeners;" and after a vote of thanks had been moved, seconded, and responded to, and several new members were elected, the meeting came to a close.

Passage of Gases through Plants.—In a communication recently laid before the Vienna Academy of Sciences, Messrs. Wiesner & Mollisch have published some interesting results of their joint work in vegetable physiology (*Pharm. Post*, Sept. 22, p. 681). They have found that neither living nor dead vegetable cell-membrane allows dry gases, even under pressure, to filter through, either when the membrane is dry, or when saturated with moisture, but that the movement of gases in plants is a process of diffusion, which goes on more rapidly in proportion as the cell-membrane is saturated with water. The greatest amount of diffusion takes places when the membranes of algæ, or of submerged water-plants, act as dialytic diaphragms. Carbonic acid diffuses through the membrane more rapidly under similar conditions than hydrogen, oxygen, or nitrogen; generally speaking the rapidity with which gases diffuse through the cell-membrane is dependent upon the absorption, co-efficient, and density of the gas. Further, carbonic acid diffuses out from vegetable cells more rapidly into air than into water, and probably the same holds good with other gases.

National Chrysanthemum Society.—A meeting of the general committee of the above Society will be held on Monday, October 14, at Anderton's Hotel, Fleet Street, E.C.

Orchids. — The fifth part of Mr. Watson's treatise on *Garden Orchids and their Cultivation* contains an account of the principal species of Dendrobium, together with a list of the hybrids derived from them. In the execution of his task, Mr. Watson is assisted by Mr. Bean, the foreman in charge of the Orchid-houses at Kew.

Forking of Fern Fronds.—M. B. Rimelin attributes the forking in the fronds of Ferns to the action of a parasitic fungus—probably a Uredine. It may be so, but M. Rimelin does not adduce any proof in support of his assertion.

United Horticultural Benefit and Provident Society.—The third annual dinner of this estimable Society will take place on Wednesday, the 23rd inst., at the Cannon Street Hotel, on which occasion N. N. Sherwood, Esq., has kindly consented to preside.

Teratology for Gardeners. — Dr. Udo Dammer is about to publish a book on this subject, with special reference to the requirements of horticulture. Dr. Dammer is the translator of the work of Dr. Masters on this subject, and to which he has added valuable observations of his own.

Diseases of Plants.—We are pleased to announce the publication of a little book on the diseases of plants, from the pen of Professor Marshall Ward, whose work on the diseases of timber we had occasion lately to notice. We shall take an early opportunity of alluding to it at greater length, but in the meantime, we may say that it is published, at a low price, by the Society for Promoting Christian Knowledge.

Chrysanthemums in the Parks.—We are desired to announce that the usual annual display of Chrysanthemums at Finsbury Park is now open to the public from 10.30 a.m. till dusk, Sundays included. The exhibition at Southwark Park is also open, and the public may visit the show from 10 a.m. to dusk.

Cardiff Gardeners' Mutual Improvement Association.—The opening meeting of the above body took place on Tuesday, October 1, by Mr. Pettigrew, gardener, Cardiff Castle, reading an excellent paper on "The Vegetable Garden." There was a good gathering of members, and a discussion followed the reading of the paper.

Insects Injurious to Vegetation.—Dr. C. V. Riley read a note at the British Association on "The importation and colonisation of Parasites and other natural enemies of insects injurious to Vegetation." He said the encouragement of the natural checks to the increase of insects injurious to vegetation might be of a two-fold nature. It frequently happened that an indigenous species was found to have certain parasites in only a portion of the country which it inhabited. In such cases, where it was practicable to transport the parasites, a great deal of good might be accomplished. But this intentional distribution of the parasites from one part to another of its native country was by no means to be compared in importance with the introduction of such parasites, or enemies of injurious insects, from one country to another, in which the injurious species has obtained a foothold without the corresponding natural enemies which serve to keep it in check in its original home. The note proceeded to give illustrations of artificial introductions of the kind on a large scale, which had already been productive of great good.

Pasture Plants.—Professor Fream read a paper at the recent meeting of the British Association on "The Effect of Root-action on the Vitality of Pasture Plants," of which the following is an abstract:—"In the course of some investigations into the herbage of old grass-lands which the author carried out last year, turfs 9 inches in depth were dug from a number of old pastures in England and Ireland, and transferred to one and the same place, where they were planted to permit of growth and observation. The species growing upon each turf were identified, and, after careful separation, the specific constituents of the herbage were severally weighed, and the results tabulated. In the discussion that followed the publication of the results, it was argued that certain grasses, conspicuous by their infrequent appearance and small percentages on these turfs, had been killed by cutting at so 'shallow' a depth as 9 inches. Whilst admitting the established fact that certain plants send their roots to a considerable depth, it appeared to the author that some confusion had been made between root-range on the one hand, and the effects of root-section on the other. To settle the point at issue, the following plants were selected:—Alopecurus pratensis (Meadow Foxtail-grass), Avena elatior (False Oat-grass), Dactylis glomorata (Rough Cock's-foot-grass), Elymus condensatus (Canadian bunch grass), Festuca pratensis (Meadow Fescue-grass), Phleum pratense (Timothy-grass), Trifolium pratense (Purple or Meadow Clover), Medicago sativa (Lucerne), Taraxacum officinale (Dandelion), Achillea millefolium (Milfoil or Yarrow), Plantago lanceolata (Ribwort or Plantain). These plants were dug up in early spring, their roots were well washed, and then the roots and root-fibres were cut through with scissors at various depths below the surface. Several specimens of each plant were taken, and the length of root after cutting never exceeded 3 inches, and sometimes was as little as 1 inch. The various specimens were then planted out in poor soil, and they not only lived, but in the course of the summer they all came into bloom. The test was far more severe than in the case of the 9-inch depths of turf, where there was no transplanting in the true sense of the word. Elymus condensatus and Medicago sativa are not British pasture plants, but the former was employed because it is a grass far more robust and of much stouter roots than any British grass; its roots were severed at a depth of between 1½ and 2 inches. The latter is a notoriously deep-rooted plant, and the section of its roots was made at a depth of 3 inches. The experiment shows that root-section, even of very deep-rooted plants, may be performed without fatal results at exceedingly moderate depths. The practical interest of the point at issue is, that it underlies a subject of very great agricultural importance.

The Madonna Flower.—There has been too much trouble of late, writes Prof. Meehan in the *American Garden*, from florists taking old plants well known under some common or English names, giving them entirely new names, and then selling them to the public wholly unsuspecting that nothing but the name is new. The remedy for this must be that adopted by the botanist for the Latin names; which is to insist on the adoption of the name that has been the earliest to receive general approval. In botany the test of priority is that the name shall have been published in some serial or work, which is easily accessible to the majority of botanists who may have a desire to keep up with the times. As

with common names, so with botanical ones, the same plant often has a number, but botanists have agreed among themselves to adopt that which can be shown to be the earliest [correct name] established under the above rules. A botanical name in universal use is at once dropped when it can be shown that a prior name was properly given to the plant. Now English names of plants are always welcome to English-speaking people. The strictest stickler for scientific botany always welcomes a good English or common name. It is the right which everybody claims, to give such a name when, where, and how he pleases, producing endless confusion, that annoys him. If the florists' association were to adopt a rule to recognise only, in cases of a multiplicity of names for the same thing, that which has the priority of record in some well-known horticultural or floral book or serial, published in the English language, very much of the objection to popular names would be removed. This note is penned through noting that quite a "boost" is being given to the "Madonna Flower," which many who buy will be surprised to find is the same old and famous "White Lily" that has been for generations in their gardens.

Lady Florists.—The commercial spirit is, observes an evening contemporary, spreading among our aristocratic ladies. "Titled bonnet-makers are quite an established institution, so, by way of being original, and at the same time making a profit, two fair sisters of an aristocratic family propose starting a flower shop. They could hardly have chosen a prettier and more becoming trade, and one which at the same time should be very profitable. It is calculated that during a London season the average amount of money spent daily in flowers is £5000, most of which also goes to foreign flower growers, thanks to our wretched climate and our neglect in the matter of cultivation." We think if the ladies do not know their business better than our contemporary seems to do, they are not very likely to succeed.

Presentation to Mr. Williams.—Mr. D. Williams, on quitting the service of Lord and Lady Wimborne, at Canford Manor, Wimborne, Dorset, last month, was presented with a valuable silver biscuit-box, the gift of the men employed in the gardens, &c., in recognition of his kind although firm treatment of them during the long term of years that he had been head gardener at Canford.

Publications Received.—*Diseases of Plants*, by Professor Marshall Ward (London: S. P. C. K.).—*A Manual of Forestry*. Vol. I.: *Utility of Forests*, by Dr. W. Schlich (London: Bradbury, Agnew & Co., 8, 9, 10, Bouverie Street).

Nursery Notes.

ORCHIDS AT MESSRS. HUGH LOW & CO.'S NURSERIES, CLAPTON.

The importance of the Indian species as beautifiers of our Orchid-houses in the dull season has, perhaps, never been better demonstrated than at present in these nurseries, and where they form a special feature. We noted a houseful of sturdy plants of the lovely sky-blue Vanda cœrulea, many of them in flower, and hundreds of flower-spikes on the new Vanda Amesiana, and V. Kimballiana—both of them sent out by this firm; the last-named was illustrated in the columns of the *Gardeners' Chronicle*, p. 335, Sept. 21, this year. Both are acquisitions of merit, and may be said to belong to that class of Orchids known colloquially as "everybody's plants," being of easy culture and certain flowerers in a cool temperate-house.

The houses of Phalænopsis form a fine sight with the countless flower-spikes on sturdy plants of most of the species, the handsomer of which, P. amablis, P. grandiflora, and P. Schilleriana being represented by very large numbers of plants, are already in bloom. Among them was remarked a single specimen of what was sent by the collector as P. violacea alba, a pure white variety, the opening of whose flowers is awaited with interest. The half dozen houses of great length devoted to Cypripedium culture contain a grand lot of the new C. Elliottianum, C. Curtisi, and likewise large numbers of many other species, those in flower being C. Spicerianum, C. calophyllum, C. œnanthum, C. Ashburtonæ, &c.; and in bud were some of the newer hybrids. Numbers of Cattleya Gaskelliana, Odontoglossums, and others of the showy genera were in bloom; and despite the enormous extent of the stock, each year appears to give greater freshness and vigour to the various sections of it, until it is not easy to say where further improvement could be made.

Plant Portraits.

Æchmea Mertensii, *Garten Flora*, October, p. 516.

Angræcum Sanderianum, *Revue de l'horticulture Belge*, October.

Arachnanthe Clarkei, Rolfe, in *Gard. Chron.*, 1888, vol. ii., p. 567, a handsome Vanda-like plant with linear oblong segments, yellow, transversely barred with reddish-brown. Kew. *Bot. Mag.*, September, t. 7077.

Aristolochia hians, *Willdenow*, *Bot. Mag.*, t. 7073.—A near ally of A. brasiliensis, but duller in colour. Hort. Kew.

Azaleas Souvenir du Prince Napoléon, J. W. Moore, Dr. Mezger, Eborina plena, *Gartenflora*, September 15.

Berberis Lycium, *Royle*.—A plant of interest, as having been used by the natives of India and of Greece from time immemorial as a remedy in certain diseases of the eyes. It is a shrub, native of the Himalaya from Kumaon to Kashmir, and much resembles the common Berbery, but the fruits are purple. Hort. Kew. *Bot. Mag.*, t. 7075, Sept. 1889.

Bifrenaria aurantiaca, *Orchid Album*, t. 386.

Bolbophyllum Lobbi, *Lindenia*, t. 195.

Canna Madame Crozy, *Revue Horticole*, September 16.

Cattleya Eldorado virginalis, *Orchid Album*, t. 388.

Cattleya Mastersoniæ×, *Orchid Album*, t. 385.—A cross between C. labiata and C. Loddigesii.

Cattleya Walkeriana, *l'Orchidophile*, August.

Ceratotheca triloba.—A perennial with 3-lobed dentate leaves and long erect spikes of lilac flowers, resembling those of the Foxglove. *Gartenflora*, September, t. 1305.

Cypripedium Lathamianum × (Spicerianum × villosum), *Garten Flora*, October, p. 528.

Dendrobium Paxtoni, *Lindenia*, t. 194.

Epidendrum vitellinum, *Lindenia*, t. 196.

Epiphyllum Makoyanum Russellianum, var. Gaerbaueri, *Revue de l'horticulture Belge*, October.

Eremurus himalaicus, Baker, a noble species attaining a height of 6 feet, with dense erect oblong spike of whitish star-shaped flowers, like an Asphodel. *Bot. Mag.*, September, t. 7076 (see *Gard. Chron.*, 1881, vol. i., p. 50, f. 11).

Eucalyptus stricta, *Sieber*.—A very narrow-leaved species, with dense clusters of greenish-white flowers. Hort. Kew. *Bot. Mag.*, September, t. 7074.

Gladiolus hybrid, President Carnot.—One of M. Lemoine's hybrids. *Moniteur d'Horticulture*, September 10.

Lælia elegans, *Lindenia*, t. 193.

Lagenaria verrucosa, *Bull. Soc. Toscana di Orticult.*, 1889, p. 246.

Nepenthes Dicksoniana×, *Gartenflora*, September, p. 466.

Odontoglossum Alexandræ Wilsoni, *Orchid Album*, t. 387.

Odontoglossum Andersonianum, var. Angustatum, *Orchidophile*, October.

Phyllocactus delicatus.—A hybrid variety of a delicate shade of rose, flowered by Messrs. Veitch, and figured in the *Garden*, September 21.

Sarracenia Wrigleyana × (variolaris ♀ × psittacina ♂, *Gartenflora*, September 15.

Tulipa Batalini, Regel, *Garten Flora*, t. 1307[2]. A new species from Bokkara with woolly bulbs, linear narrow leaves, and yellow flowers with oblong segments.

Tulipa maximowiczii, Regel, *Garten Flora*, t. 1307[1]. A new Bokkaran species with caulescent stem, linear leaves and small terminal flowers, with crimson sharply pointed segments, with a black spot at the base. Stamens glabrous, bulbs hairy.

Vriesea Versaillensis, *Illustration Horticole*, t. 87.—Leaves strap-shaped, entire; spike erect, flattened, oblong. Bracts brilliant scarlet, tipped with green. = V. psittacina × brachystachys.

Yucca filifera, *Bulletino della Soc. Toscana d'Orticult.*, October, t. ix.

Old Varieties of Vegetables.

In his opening address to the recent Vegetable Conference, Mr. H. J. Veitch, alluding to the introduction of new Peas, said that the Royal Horticultural Society, during the past twenty-five years, had awarded something like forty-two Certificates of Merit to new Peas, and yet he named four old varieties as holding their own in spite of new introductions, viz.:—Fairbeard's Champion of England, British Queen, Ne plus Ultra, and Veitch's Perfection. The first three named of these appear in a seed list published in 1852, and they have been about forty years in cultivation, and Veitch's about thirty-two years, and they are still in large demand, as any wholesale seedsman can testify. Probably the types have improved somewhat during that time by means of careful selection, and this is one reason among others why they are still so much grown. When originally sent out, Champion of England was reported to grow to a height of 4 feet, and Ne plus Ultra, 4½ feet; but a good stock of both in the present day grows taller in good soil. Ne plus Ultra is a remarkable instance of the remaining of a new variety. Originally raised by a person of the name of Payne of Northampton, it was first known as Payne's Conqueror; and on the stock being purchased by Mr. Jeyes, a seedsman, it was sent out as Jeyes' Conqueror; eventually it was named Ne plus Ultra, and under this name it is best known. Not a few of the varieties so-called sent out in the present day are simply this popular variety under new names.

A thoroughly reliable list of Peas published in 1817 gives twenty-three varieties; another published in 1842 gives thirty; and ten years after this had grown to fifty; but some of the latter were synonyms. The wholesale catalogue of Messrs. Hurst & Son of the present year gives 113 varieties, including synonyms; the retail catalogue of Messrs. James Carter & Co. gives 111; that of Messrs. Sutton & Sons, 79, or 32 less. There is some excuse for the wholesale seed houses publishing synonyms, because the same variety is known under different names in various localities, and these they can scarcely avoid cataloguing. I may mention the case of British Queen. When I was in the wholesale seed trade, thirty-five years ago, this Pea was known in one part of the country under the above name; in another as Great Britain; in another as Oxford Tom; and in another as Ward's Incomparable. The wholesale seed trade did not create these synonyms; the proofs of these so-called varieties in their trial grounds, where every new aspirant to favour is put through a severe test, proved they were but British Queen, but it became known to their customers under these varying names, and they had to catalogue them. So also the old Waterloo Marrow, or, as now best known as the Victoria Marrow; this was also known as Thurston's Reliance, a name now scarcely heard of. This will show how mere names are multiplied. I can remember when the Hollow Crowned Parsnip was asked for under something like fourteen different names.

Here is a notable instance of how names multiply. In a seed catalogue, published in 1859, I find

"Butler's Fine Large Summer White Cos Lettuce," with a highly flattering description. On p. 18 of the arrangements of the Vegetable Conference, recently held at Chiswick, I find "Barr's Covent Garden Summer Giant White Cos Lettuce," with an abridged description, but almost word for word with that used in 1859. The only difference is that while in the latter year seven words sufficed to give a title to this Lettuce, in the present year it requires eight—a remarkable instance of the doctrine of evolution of plant names. The irony of fate made the sponsor of the last named Lettuce a member of one of the committees of selection, and one of the revisionists of the nomenclature of vegetables. In Ellam's Early Dwarf Cabbage, I recognise a fine selection from, I think, the Early Dwarf York, sent out by Messrs. Beck, Henderson & Child, about 1862, under the name of Beck's Early Dwarf Cabbage, the original name it ought to bear. *R. D.*

Cultural Memoranda.

ARISTOLOCHIA ELEGANS.

This free-flowering climber is a native of Brazil. It has cordate ovate leaves, smooth above, and glaucescent beneath. The flowers are very beautiful and elegant in appearance. They have a slightly distended tube, which is suddenly bent upwards, the upper part expanded into a cordate cup-shaped limb of a rich dark purple colour, ornamented throughout with irregular branched markings of creamy-white, and having a golden-yellow eye surrounded by rich velvety-purple. Its blossoms are produced in profusion. The plant is easily propagated from seed. From seed sown in the first week of October last, plants are now flowering. The seed should be sown in a well-crocked pan, filled to within an inch of the rim with light soil, made firm, covered lightly, watered, and placed in heat, with a square of glass and a covering of moss over it. Seeds thus treated always come up quickly. Of course, as soon as the seedlings appear the covering of moss should be removed, and the glass also, before the little plants come in contact with it. Prick off into pans as soon as large enough, and give a position near the glass, to insure a sturdy growth; giving water through a rose to settle the soil about their roots, and shading from sunshine until a hold to the soil is taken; subsequently potting the plants singly into 3-inch pots, using a compost consisting of three parts light friable loam, and one of sweet leaf-mould, with a sprinkling of sharp sand. The plants should be syringed overhead morning and afternoon on bright days, and be kept moist at the roots; otherwise red-spider will put in an appearance. Aristolochia elegans does best trained to wires fixed underneath the roof in the stove.

Deutzia gracilis.

Where plants have been grown in 8 inches of good soil placed over a hard bottom in an open situation, no time should be lost in taking them up intact, and potting them in pots of a suitable size. Before doing so, cut back any straggling roots. In potting them, make the soil very firm between the pot and the ball of roots, and employ a mixture consisting of three-parts light loam and one of leaf-mould, and some sharp sand added. After watering the plants, stand them on the north side of a wall, or in a cool pit, and shade from sunshine for a few days—that is, until the roots have taken to the soil, the object being to get the plants well established before they shed their leaves. After a short period of rest, any of the plants may be introduced into heat for early flowering.

Cinerarias.

These plants grow well in cool frames or pits, if actual frost can be kept out, and drip and excessive atmospheric moisture avoided. Failing the condition with regard to moisture, mildew will be likely to attack them. When grown in such places, great care is needed in watering, so as not to cause water to overflow the pots, or wet the leaves, or the floor on which the plants stand. Should mildew attack the plants, dust the affected leaves while damp with flowers-of-sulphur.

Ixias.

These South African Irids should be extensively grown in pots and beds, as the bulbs may be bought at from 4*s.* to 21*s.* per 100, the latter price including in that number twenty-five named varieties, according to some trade lists. Three or four bulbs may be potted in a 3-inch pot in a mixture of three-parts light loam and one of leaf-mould, stood on a bed of coal-ashes, and covered with the same materials, and afterwards treated like Hyacinths, when they have made about an inch of growth. They will make most useful decorative stuff next June, sending up spikes from 2 to 2½ feet high of the most beautiful flowers, ranging in colour from deep crimson to pure white. When in full growth, the plants require to be kept well supplied with water at the roots. *H. W. Ward.*

PLANTING STRAWBERRIES.

In planting Strawberries, losses are often incurred through the work being improperly carried out, and in order to illustrate this, we reproduce the accompanying figures from our American contemporary, the *Orchard and Garden*. In fig. 60, A, p. 419, the plant is set far too deeply into the soil, whereby the crown is soon rotted, and the plant dies. At B, the other extreme is seen, here the crown being set too high out of the soil. In C, we have a plant hastily thrust into the soil, with its roots crowded together in a bunch. A correctly set plant is represented by the figure D. The roots are spread out evenly, and the crown is on a level with the surrounding soil, the latter being packed firmly around the plant.

Fruits Under Glass.

The Peach Houses.—In the early house the trees will be shedding their leaves, and the few shoots left at the summer pruning may now be cut out. Should the trees have suffered from attacks of red-spider, thrips, or scale, they should be dressed with some kind of insecticide, and the shoots tied up together, and the roof given a thorough washing down with hot water and soft-soap. The walls should then be whitewashed, and the house generally well cleansed. This finished, the trees may be tied to the trellis, laying in the bearing wood not less than 3 inches apart. The border should have the whole of the surface-soil removed down to the first roots met with, and if found to be dry, it should be well watered before putting on the new top-dressing. For old trees this dressing should consist of a mixture of turfy loam and Thomson's manure, and be quite firm and solid before being watered. Young, strong growing trees may be partially lifted, and the strong roots shortened a little, and then be top-dressed with loam without any manure. Any desired replanting operations should be carried out as soon as the current season's shoots are matured. Keep the early house quite cool until it is started. The fruit of late varieties should be exposed to the full sunlight, and a warm, dry temperature maintained, with some ventilation whenever possible. Late houses, in which the shoots are not yet ripe, should have a little fire-heat, especially if the weather be very dull and damp. The borders should be examined as to their condition, and, if water be needed, a thorough soaking will be beneficial. New borders should be got in readiness for intended planting.

Tomatos.—These will now be bearing a few fruit, and, if they are in pots, the slightest sprinkling of Thomson's manure on the surface will help them to swell their fruits rapidly. Keep the plants to a straight stem. Fumigate with Tobacco or syringe with Calvert's soap now and again, to keep them free from white fly. The temperature may be kept at 65° by day, with air, and 55° on cold, or 60° on mild nights. Fruits now colouring on open walls may be gathered, and placed in any warm dry house to ripen; while if planted against a wall, a few old lights placed in front of them this open season will be a sufficient protection, and give the others a chance of ripening.

Strawberries.—The equinoctial gales having set in, all the Strawberries intended for forcing should be placed where they can be protected, if possible, in frames, and close to the glass, the lights being left off night and day when the weather is fine. A little soot-water at this time of year will be found very beneficial, and care should be taken that none get dry now that they are protected from the rain. Keep the soil free from weeds, and the plants from runners, and do not let them stand too closely together, so as to prevent the air from circulating amongst them.

Melons.—The fruit of the late crop should be fully exposed to the sun, and the plants treated to a dry warmth, with ventilation whenever it is possible. Temperatures of 70° to 75° at night, and 75° to 80° by day, should be maintained for any that are swelling their fruits. La Favourite Melon is, I find, a good one to keep after being cut at this season. Too much moisture in the air or in the soil must not be afforded the plants, and water should only be given when absolutely necessary, and a warm day selected for doing so. *W. Bennett, Rangemore.*

The Hardy Fruit Garden.

Strawberry Beds.—If the runners and some of the old leaves were removed shortly after the crop of fruit was gathered, and the soil slightly loosened between the rows to prevent cracking, and a heavy dressing of manure afforded the plants, they will have made good growth, which itself is a promise of a good crop another year. The plants will require to be gone over occasionally, cutting off all flowers, and eradicating weeds. The forced plants which were put out at an early date will require attention during this month, as regards keeping them free of weeds, flower-spikes, runners, &c. If the beds have not yet been mulched, it is now time to give them a thorough dressing of rich manure.

Propagation of Bush Fruits.—Cuttings of Gooseberries and Currants of all kinds may now be made, and if put into the soil at once, good results may be looked for. The usual course is to select the suitable shoots when pruning the bushes, lay them in by the heel, to be made when bad weather compels a cessation of outdoor work. This mode of doing the operation is not so satisfactory as when the cuttings are taken off early, and put into the earth at the same time. When making the cuttings, select the ripest shoots, from 1 foot to 1¼ foot in length, and take out the lower buds, except in the case of black Currants, and if the cuttings are furnished with a heel of old wood they will root more readily. Select an open place for the bed, dig it deep, and make it firm by treading; and after making it smooth, dibble in the cuttings to a depth of 4 inches, and at a width apart of 6 inches, and 1 foot between the rows, and the cutting should be made fast in the soil. In heavy soil, if a little sand be dropped in the holes for the base of cutting to rest on, rooting will take place more readily.

Nuts.—When these are ripe, which is easily known by their shells and husks becoming brown, they should be gathered and stored in their husks, but should be thoroughly dry. Some expose them to sulphur fumes as a preventative against the husks becoming mouldy, though if gathered when dry and placed on a shelf in a cool dry room they will keep sound and good for months. *H. Markham, Mereworth Castle, Maidstone.*

Home Correspondence.

STARCH IN LEAF-STALKS.—Some seven or eight years ago I began trying to fertilise Geranium echinus, a tuberous-rooted species, with the pollen of the ordinary zonal Pelargonium; after several futile endeavours, I at last succeeded in obtaining two ripe seeds, and these I put in an envelope among other seeds, where they remained until the spring of this year, a period of five years, when I sowed them. Only one seed grew, and it is now a nice plant, with six or eight leaves. The plant has not yet flowered, so I can say nothing about what the flowers may be like; but I am puzzled at finding the visible parts of the plant so very like those of an ordinary zonal Pelargonium. The other evening, however, I sought to investigate

its cellular arrangements microscopically, and took the petiole of a leaf from the plant for transverse sections. To my utter surprise, I found the cells in the petiole heavily charged with starch grains, just as I had found, years before, the cells of the tuberous root of echinus to be. My surprise may be the result of my simplicity, but I certainly never found starch grains in the petiole of any leaf before. I enclose the remaining portions of the same petiole for your examination, and I shall feel greatly obliged if you will say whether or not it is extraordinary to find starch grains in the leaf-stalks of plants. *G. Paul, Knaresboro'.* [The occurrence of starch in a solid state in the petiole is not very rare; in a soluble form it must be almost invariably present during growth. Hybridism would not directly affect the case one way or the other when your plant flowers. We should be glad to see a flower. Ed.]

AN EXTRAORDINARY CROP OF POTATOS.—The following will, I think, be of interest to many of your readers as showing the extraordinary productiveness of a new kind of Potato sent out by Messrs. Carter & Co., London, this season, named King of the Russets. I planted 5 lb. of them in the following manner:—in the rows, 1 foot 3 inches; rows apart, 3 feet, the Potatos so cut as to make a set out of every eye. The produce obtained was as follows:—Weight of twelve of the heaviest roots: two roots 5 lb. each, two roots 4 lb. 9 oz. each, two roots 4 lb. 8 oz. each, one root 4 lb. 4½ oz., one root 4 lb. 4 oz., one root 4 lb. 1 oz., one root 4 lb., one root 3 lb. 2 oz., one root 3 lb. 1 oz. Total weight of the twelve roots, 50 lb. 14½ oz. Total weight of the whole crop, 326 lb. It should be noted that on the edge of the plot on which the crop was grown bush fruit trees are planted, also that some rows of Brussels Sprouts were planted between the rows, which must have considerably diminished the result. *J. Eyre, The Laurels, Long Buckby, Northampton, October 3.*

NOTEWORTHY PLANTS AT HIGHBURY.—There is growing in the Right Honourable J. Chamberlain's conservatory a fine group of Hedychium Gardnerianum planted out in a border. It flowers freely. Another plant richly deserving notice is a winter-blooming Begonia, named Madame Fanny Giron, a profuse bloomer of good habit, with rich salmon-scarlet flowers. This variety, when more known, will be very generally cultivated. Out-of-doors, the Pernettyas are conspicuous objects just now, clothed with bright rose-coloured berries, asserting a claim to being more generally used amongst the shrubs in the borders and plantations. The conservatory is embellished with a fine group of plants, the centre specimen being a Chamærops Fortunei, 20 feet high, with a stem of 6 feet. Anthurium Chamberlainii has grown into a very fine specimen in the fernery. There are two remarkable Yews, such as are rarely to be met with. Mr. Cooper, the gardener, says that they are mentioned in *Domesday-Book*, but I am unable to verify this statement, but certainly their age must date back several centuries, and one of them exhibits signs of immense age. This Yew stands in a field close to Highbury, and is much prized by Mr. Chamberlain. The other is in the pleasure grounds, this part of the field having been added to the gardens, and Mr. Cooper has placed some manure and soil about this tree, and laid down turf around it. The tree has made a quantity of new growth, showing what may be done to invigorate old trees by improving the soil about their roots. *W. Dean.*

MR. WILLIAMS, LATE OF CANFORD MANOR GARDENS.—This excellent gardener has left Canford, which, under his care, was an exemplary garden, always in good keeping, and able to meet the great demands on its resources. It is to be hoped that he will soon meet with another post commensurate with his abilities. *A Visitor to Canford.*

POISONOUS NATURE OF SHRUBBY SPIRÆAS.—That there are plants with juices of a highly poisonous nature is well known, but that Spiræas were of that nature, was not before generally known to cultivators. In these nurseries, a gardener making cuttings of some of the above plants [which?] inadvertently cut his thumb, so as to sever a small portion of the tip, and at the time this was considered of trifling import, but in three days symptoms of blood-poisoning appeared, and of so virulent a nature, as to cause the doctor who attended him some uneasiness as to the results. The arm became much discoloured, and the pain was so severe and protracted as to preclude the possibility of the sufferer resuming work for more than three months. Are there many plants in making cuttings of which a workman runs such a risk? *Gardener, Dicksons' Nurseries, Chester.* [Lobelia, Euphorbia, Primula obconica, possibly Stephanotis florabunda in garden plants. Ed.]

LOBELIA CARDINALIS.—This plant gets a good deal of admiration in English gardens at the present; in fact, it is the object of a kind of revival, and is rapidly coming to the front again as a bedder. What we amateurs are bothered about, is the protection in winter which it is said by the authorities it must have; whilst in Canada, where it is at home, it grows and flourishes by the sides of streams and pools. Will some of your readers give me the reason for this? Our climate is much milder in winter than that of any part of Canada; but the *crux* may be that our snow does not lay the whole winter season. *Pocahontas.*



Fig. 60.—Good and bad strawberry planting.
(See p. 418.)

"AMATEUR GARDENING." — Having but lately seen recent issues of the *Gardeners' Chronicle*, I shall be late in my present endeavour to make things pleasant with Mr. Sanders. His complaint is just. I owe it to you, as well as to him, to say that all I sought was to correct injurious newspaper errors. To cast reflections upon a worthy man was no part of my purpose. I have looked into the literary matter of the *Amateur Gardening*, and I find it excellent. *Corpo Campo.* [This correspondence must now cease. Ed.]

LISSOCHILUS SPECIOSUS.—On reading "F.R.'s" article on the above, I looked up my old plates, and found one of this grand Orchid, and find that it differs slightly from "F. R.'s" description; thus, the spike is seen emerging out of a new, half-matured growth, and not from the base of the pseudobulb. The flower is identical in colour and size, but the side-lobes of the lip are white or cream, and there are a few dark lines at the constricted part of the lip contiguous to the noticeable venation grooves. The plate is one of a few which I received from an old botanist, and is dated March, 1837. I have others of about this date, and one of Epidendrum ciliare, dated 1799, and another of Limodorum tuberosa, 1790, both by W. Curtis. If "F. R." could spare me a flower or two of Lissochilus speciosus for dissection and herbarium specimen, I would be grateful. Should he care to see them, I would gladly post to him the plate for inspection. *John Watson, 177, Moss Lane East, Moss Side, Manchester.*

EUCOMIS PUNCTATA.—I did not know that this plant was hardy until I read the note on p. 387 of the *Gardeners' Chronicle.* Four years since we had a strong plant with several bulbs, which had been growing in a cool-house, and which annually flowered freely. It was afterwards planted out, in the spring, on the rockery, in soil of good depth. The following summer it flowered freely, but in the winter succeeding it was killed by frost. Probably a warm, dry place should be chosen for it out-of-doors. The soil should be of a sandy nature, so as to prevent it holding a great quantity of moisture in the winter, which would doubtless be fatal to the plants. I fear that the nature of our soil, which is heavy and retentive, would preclude our cultivating the Eucomis with success out-of-doors. *E.*

POTATO STOURBRIDGE GLORY.—Anyone in want of a good cooking Potato, a heavy cropper, and of good appearance, could not do better than give this variety a trial. The flesh is white, the texture mealy, and flavour good. It has a striking resemblance in shape to Magnum Bonum, but it is so greatly superior in the point of good cooking to that variety that it is much preferred by the cook. It is in good condition at the present time, whilst Magnum Bonum is not. *S.*

PRECOCITY IN A HEN.—I think the following instance of precocity worthy of notice:—A chicken hatched in February last was missing, and it was found that she had made a nest in a small wood and had hatched four chicks. These were brought into my fowl-house, but two died; she is, however, going about with the other two, which are small but healthy; they were three weeks old last Sunday, September 29. The breed is silver-grey Dorking. *J. A. C., Northfield, Annan, N.B.*

Societies.

ROYAL HORTICULTURAL.

October 8.—At the meeting at Westminster last Tuesday there was a very fine display of Apples and Pears, the high colouring of the former being very noticeable. In the afternoon Mr. W. Coleman, Eastnor Castle Gardens, Ledbury, lectured on "Conifers," and, as a complement to his remarks, collections of Coniferous plants were contributed by some of the nursery firms.

Floral Committee.

Present: W. Marshall, Esq., in the chair; and Messrs. S. Hibberd, R. Dean, W. C. Leach, R. B. Lowe, E. Mawley, T. W. Girdlestone, J. Walker, H. Herbst, B. Wynne, L. Castle, W. Holmes, F. Ross, H. Cannell, Ch. Noble, and G. Paul.

Messrs. B. S. Williams & Son, Holloway, showed some interesting forms of Sarracenias, the most striking being Chelsoni, Drummondi, Flambeau, Wilsoni, &c.; also a group of Crotons in variety, small plants, and all well coloured.

Flowering and fruiting branches of the pretty Myrtle-like Eugenia Jambosa came from Mr. G. Wythes, Syon House Gardens, Brentford, the berries being long and conical, and of a deep red hue.

From Messrs. Cannell & Sons, Swanley, came some fine early flowers of Chrysanthemums, chiefly of new kinds, full of promise for the flowers a month later; Avalanche, pure white; Etoile de Lyon, very large loose flowers, white, heavily flushed rosy-red; Comte de Mun; Doric yellow; Theodore, a purplish Cullingfordi; W. Holmes, a short, erect-petalled form, of a very rich orange-chestnut; Eugène Gait, colour of Barbara; F. Marrouch. This firm also showed numerous double and single Begonia flowers, and a collection of eighteen varieties of Abutilon flowers. Of these very charming were Boule de Neige, Delicate Peach, pink; Golden Fleece, striata splendens, and Admiration, orange-red.

Messrs. Davies & Jones, Lilford Road, Camberwell, had of Chrysanthemum blooms, La Vierge, Isadore Ferral, Lady Selborne, Mrs. Hawkins, W.

Holmes, Filbert, a pretty yellow pompon; Lyon, rosy-pink, &c.

Messrs. Hawkins & Bennett, of Twickenham, showed twelve fine blooms of their true Mrs. Hawkins, yellow sport from C. Wermig, and which exhibits so great an advance in habit, colour, and size of flower on the older variety.

From the Society's gardens, Chiswick, came some small plants of Messrs. Vilmorin's strain of double Balsam, and some plants in pots of Damman's strain of Hedgehog and Liliput varieties of Asters, late, small-flowered, rich in colour, and very useful for cutting.

Mr. R. Dean staged two plants of Pyrethrum uliginosum from layers, to show the ease with which this fine hardy plant may be dwarfed for pot culture. The layers were laid in August, the plants when in bloom being but 10 inches in height.

To illustrate Mr. Coleman's paper on Conifers, several firms had furnished excellent collections of various Coniferæ, the which would have been more complete, but that a group of Cedars from Bagshot, did not come to hand, and a hamper full, which Mr. Coleman brought up with him, went astray.

Messrs. Veitch & Sons furnished a beautiful group of some twenty-five varieties of Retinospora. Green forms were found in filifera, obtusa, nana, plumosa, pisifera, and filicoides. Of golden forms there were plumosa argentea, plumosa flavescens, obtusa aurea, filifera aurea, and pisifera aurea. R. obtusa Keteleerii was a pretty silver variegated form. R. leptoclada, green, formed a perfect cone, and R. filifera gracilis is a lovely dwarf drooping form.

Messrs. W. Paul & Sons, Waltham Cross, had a remarkable collection of Yews, the whole family of Taxus apparently being represented by some fifty plants. Of green-leaved varieties were Cheshuntensis, Imperialis, and parvifolia; and of golden forms elegantissima, fœmina, and pyramidalis variegata were effective. Jacksoniana and procumbens were the best bush forms.

Messrs. G. Paul & Sons, Cheshunt, had both Cupresses and Juniperus in variety. In the former section, C. Lawsoniana and its many varieties were in force. Erecta viridis, Fraseri glauca, gracilis, Waterii, and erecta alliumi were the best; L. lutea, L. variegata, the best golden; and L. pulcherrima and alba nana the best silvery forms. The other Cupresses plants were looser in habit, some drooping or spreading in form, and were not so handsome as were those previously named.

Messrs. J. Veitch & Sons, Chelsea, sent a box of cut trusses of beautiful greenhouse hybrid Rhododendrons, one of which, named Aspasia, is a distinct addition to those already known. It has a full truss of large flowers of a rich cream-yellow colour, the stamens and pistil being of the same hue. A hybrid Begonia raised from B. Froebelli, fertilised by a tuberous variety was also shown under the name B. Prometheus; it bore rich red flowers circular in outline, and about 2½ inches in diameter, the leaf is oblique, almost round, and the plant generally is intermediate between its parents.

A handsome collection of Anthuriums was shown by Sir Trevor Lawrence, Bart., Burford Lodge, Dorking; all were finely grown plants, among which were A. Andreanum, A. carneum, and the white A. Laingi. A plant of A. Leodense was certificated, it is a hybrid of Andreanum and Veitchii, and bears a large spathe like that of Veitchii, but it has the rich colour of the other parent, the spadix is very large, white and conspicuous. Mr. Ross, Pendell Court, Bletchingley, sent a flowering stem of Ceropegia Sandersoni, with rich green flowers.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; J. O'Brien, J. Douglas, J. Dominy, H. M. Pollett, H. Ballantine, and E. Hill.

From E. G. Wrigley, Esq., Howick House, Preston, came a beautifully coloured Cattleya Hardyana, Wrigley's variety, which had a richly coloured lip of fine crimson and yellow, with a rosy-crimson shade over the other segments, a very pretty combination; the same exhibitor also sent a well-flowered C. Dowiana aurea.

An elegant novelty was seen in Lælia præstans alba, which was contributed by Mr. W. Bull, King's Road, Chelsea. It differs from the type (which was also shown) in the pure ivory-white colour of the flower in all parts except the tip of the lip, which retains the crimson of the type; there is also a white area on the median lobe of the lip corresponding to the pale blotch seen in L. præstans. A grand spike of Vanda cœrulea, with deep blue flowers of fine size and substance, was sent by Mr. E. Hill, gr. to Lord Rothschild, Tring Park, for which a cultural commendation was given.

A few well-flowered hybrid Cypripediums were sent by Mr. B. S. Williams, Victoria Nurseries, Upper Holloway, London, in which were included Cypripedium cardinale, the deep rose-coloured lip of which contrasts well with the almost white petals and sepals. C. œnanthum, and its richly coloured variety superbum, and C. Ashburtoniæ, also Cattleya velutina and Oncidium ornithorhynchum album, with a profusion of flowers of creamy-white with a yellow crest.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., sent a decided acquisition in Lælia autumnalis alba, a pure white form. The plant shown bore three fully expanded flowers, without any trace of the rosy colour of the type.

From his collection at Burford Lodge, Dorking, Sir Trevor Lawrence sent a plant named Cypripedium picturatum, which has leaves of pale green, slightly marbled, about 6 inches long, and bore one flower on a scape some 6 to 8 inches high; the flower is about 4 inches across, resembling those of C. Spicerianum in form; the lip is pale dull crimson-lake, slightly mottled; the petals pale brown with lines of dots of a deeper colour, undulate along the margin, and with a crimson flush at the apex. The dorsal sepal is triangular, with the margins reflexed, white, heavily veined with crimson on the lower half, with a prominent crimson nerve running right up the centre.

A plant of Lycaste plana var. Cumminsi came from A. H. Smee, Esq., The Grange, Wallington; it has flowers paler than the type, being almost pure white in the petals, lip dull crimson, and sepals coffee-coloured inside.

Fruit Committee.

Present:—Sir C. W. Strickland, in the chair; and Messrs. F. R. Lane, W. Balderson, J. Hudson, G. Wythes, W. Wildsmith, J. Wright, W. Warren, G. Bunyard, W. Bates, G. W. Cummins, T. J. Saltmarsh, J. Cheal, H. Weir, R. D. Blackmore, and Dr. Hogg.

There was a very extensive display of dishes of Apples and Pears, Messrs. J. Veitch & Sons having over 300 in all, and they were generally very finely-grown samples of large size. All the favourite varieties were represented, and a few large baskets of special fruits were very attractive. In such a collection it is only possible to signalise the most conspicuous fruits, which were of Apples—The Sandringham, Blenheim, The Queen, King of the Pippins, Peasgood's Nonsuch, Seaton House, Bauman's Red Reinette, Cox's Pomona, Cox's Orange, Court Pendu Plat, Annie Elizabeth, Beauty of Kent, Hawthornden, Lord Suffield, Lane's Prince Albert, and Tower of Glamis. Among Pears were Alexandre Lambré, Beurré d'Amanlis, Beurré Clairgeau, Madame Treyve, Doyenné Boussoch, Beurré Superfin, Marie Louise, Pitmaston Duchesse, and Knight's Monarch. A fruiting pot plant of Negro Largo Fig was also shown.

A representative collection of some 120 dishes of Apples and Pears, all finely coloured, was also sent from Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex; and conspicuous among Apples was a basket of branches of Forge, very heavily laden with highly-coloured fruits; and dishes of the same variety were also contributed. Others were Bismarck, Warner's King, Alexander, Court Pendu Plat, Cellini, The Queen, King of Pippins, Stirling Castle, Alfriston, Duchess of Oldenburg, and Tower of Glamis; while the Pears included first-rate and large specimens of Catillac, Doyenné du Comice, Doyenné Boussoch, Grosse Calabasse, Pitmaston Duchesse, Thompson's, and Baltet Père.

Apples and Pears were shown in fine form by Mr. Davies, Mote Park Gardens, Maidstone, who, had in addition to some fine Black Hamburgh and Muscat of Alexandria Grapes, Morello Cherries, and Warner's Grape Red Currants, some forty dishes of Apples, and as many of Pears, mostly fine samples. Of Apples very good, were Sandringham, Pomona, Prince Albert, Lord Derby, Hoary Morning, Alfriston, Warner's King, Winter Hawthornden, Gloria Mundi, Cox's Orange Pippin, very fine; Melon Apple, Ribston Pippin, &c. And of Pears, exceptionally good were Doyenné du Comice, Pitmaston Duchess, Fondante de Cuerne, Durondeau, Triomphe de Vienne, Marie Louise, Charli Basiner, whitish-green, medium size; Beurré Ballet, Duchess of Orleans, Marie Benoist, and others of the best quality, showing a selection of which any grower might well be proud to possess.

From Mr. W. Roupell, Harvey Lodge, Roupell Park, S.W., came a number of capital fruits, which had been grown in the Streatham district, and there were some fine examples of Annie Elizabeth, Peasgood's Nonsuch, Emperor Alexander, Lord Suffield, Stirling Castle, and The Sandringham. Mr. Roupell also had bunches of the Early Black Frontignon Grape, ripened out-of-doors; and of the Diamanttraube, from under glass.

Messrs. W. and J. Brown, Stamford, had three dishes of Apples.

Mr. G. Dyke, gr. to H. T. Pollock, Esq., Kirklington Hall, Southwell, Notts, had a dish of Kane's Seedling Apple, a round yellow variety, with a pale red cheek.

Mr. Maher, Yattenden Court, Newbury, sent yellow Tomato Perfection, a large slightly corrugated fruit; and M. A. Dean, Bedfont, Middlesex, a sample of a preserve from Marrows.

Awards were made as follows:—

By the Floral Committee.

First-class Certificate.

To Anthurium Leodense, from Sir T. Lawrence, Bart., M.P.

Awards of Merit.

To Rhododendron Aspasia, from Messrs. J. Veitch & Sons.

To Chrysanthemum Doric, from Messrs. H. Cannell & Sons.

Botanical Certificate.

To Ceropegia Sandersoni, from Mr. T. Ross.

Medals.

Silver Medal to Mr. B. S. Williams, for group of plants.

Silver Medal to Messrs. J. Veitch & Son, for group of Retinosporas.

Bronze Medal to Messrs. Paul & Sons, for group of Conifers.

Bronze Medal to Messrs. W. Paul, for group of Conifers.

By the Orchid Committee.

First-class Certificates.

To Lælia Autumnalis alba, from Messrs. J. Veitch & Sons.

To Cypripedium picturatum, from Sir T. Lawrence, M.P.

To Lælia Præstans alba, from Mr. Wm. Bull, Chelsea.

Awards of Merit.

To Cattleya Hardiana, Wrigley's var., from E. J. Wrigley, Esq.

To Lycaste Plana var. Cumminsi, from A. H. Smeeting.

By the Fruit Committee.

Awards of Merit.

To Apple Kane's Seedling, from Mr. Dyke.

Medals.

Silver-gilt Banksian, to Mr. M. C. Davies, for collection of Grapes, Apples, and Pears.

Silver-gilt Banksian, to Messrs. J. Veitch & Sons for collection of Apples and Pears.

Bronze Banksian, to Mr. W. Roupell, for collection of Apples.

Large Silver, to Messrs. J. Cheal & Sons, for collection of Apples and Pears.

THE NATIONAL CHRYSANTHEMUM.

October 9.—A meeting of the Floral Committee of the above Society took place at the Royal Aquarium, on the above date, there being a large attendance of the members, and a number of new varieties of Chrysanthemums; Mr. E. Sanderson was the chairman. Mr. Sullivan, gr., Downshire House, Roehampton, sent Japanese Mrs. Chapman, pinkish-magenta with a white reverse to the petals, and these being much incurved, imparted a confused appearance to the flower.

From Mr. G. Stevens, St. John's Nursery, Putney, came three new Japanese varieties, viz., Mons. Jules Lefebvre, a somewhat coarse broad-petalled flower, rosy-pink, with a white reverse, the points of the petals much toothed; M. de Comte Foucher De Careil, pale rosy-pink centre, the basal petals blush; and Le Camoens, a delicate broad-petalled flower, delicate pink and white; soft and chaste.

From Mr. R. Owen, Castle Hill Nursery, Maidenhead, came Jean Marty, a Japanese Anemone-

flowered variety, colour rosy Peach, the guard and central florets slightly tipped with white—awarded a First-class Certificate of Merit; and Lovely, a seedling single, raised by Mr. Owen, having a yellow disc, with a white ring and a margin of lilac-pink, very pretty and promising. Commended.

From Messrs. H. Cannell & Sons, Swanley, came quite a large collection of cut blooms, including Gloire de Lyon (Japanese), white, with soft rosy-pink centre; Doric (Japanese)—Certificated last year—a bright yellow small petalled flower of singularly compact appearance; Comte de Mun, blush; Theodore Bullier, magenta-red, the flowers only partially developed, in the way of, but said not to be so good, as Viscount Lewisham (the committee requested to see it again); Avalanche, a beautiful white Japanese—Certificated last year; Stanstead Surprise, Eugène Gait, a reflexed variety, orange, cinnamon and gold, in the way of Prince of Orange, commended for its colour; Thomas Stevenson, a large flowered Japanese, a sport from Criterion, and considered to be not sufficiently distinct from it; Meto, a Japanese, white, striped with rosy-lilac in the way of, but better than, albo-striatum, it lost the distinction of a first-class certificate by one only, and the Committee expressed a desire to see it again; J. H. Mann, Japanese Anemone, deep reddish salmon ground, and buff-yellow quilled florets, a very fine and distinct variety, but as one bloom only was shown, it was highly commended, and the Committee requested to see it again; Mrs. F. W. Grant, Japanese Anemone, soft lilac-pink, the ground and centre florets of one colour, considered to be not so good as Nelson; Pollie, Japanese, pale orange buff, and slight shading of reddish-brown; Mdlle. Darginet, soft pink and yellowish-amber; and Dr. Duparier, a reflexed flower, very like Elsie, but not so good, white with yellow centre.

Mr. Brice Ironside sent a plant of a Japanese Chrysanthemum, about 2 feet in height, with a very stout stem, in a 24-pot, and bearing one large flower, which he had raised from a leaf without any wood of the stem being attached, which had been treated in the same manner as a cutting. It was a very successful experiment.

CRYPTOGAMIC SOCIETY OF SCOTLAND.

The fifteenth annual Conference of this Society was held at Crieff, Perthshire on the 17th and 18th inst., Colonel Harrington Stuart, of Torrance, President. In many respects the meeting was a very successful one. Other conferences have been more largely attended; but it may be truly said of the Crieff meeting that it was wholly composed of enthusiasts, and that good work was done. The business meeting of the Society was held on the evening of Tuesday, the 17th. After the transaction of ordinary business, the President, addressed the members, dwelling upon various points of interest which had occurred to him in connection with the work of the Society. The writer contributed "In Memoriam: Rev. M. J. Berkeley;" and Professor J. W. H. Trail gave two valuable papers on the "Revision of the Scottish Uredineæ and Ustilagineæ," and "Revision of the Scottish Exoasci."

On Tuesday, the 17th, an excursion was made to Abercairny, the seat of Mr. Home Drummond Moray, who received the Society with great kindness. The members were conducted to the woods by Mr. Brown, Abercairny Gardens, who was familiar with the best localities for fungi, having contributed a fine collection to the great fungus show at Perth in 1875. The excursion on Wednesday, the 18th, was to Drummond Castle, the seat of Lord Willougby De Eresby. The old castle occupies a very striking position. The avenue, which is more than a mile in length, and completely overarched by fine Beech trees, occupies the straight ridge of a trap dyke, on the extremity of which, where the rock rises into prominence, the castle is built. The oldest portion, which was founded about 1490, is now used as an armoury. After admiring the extensive and far-famed gardens, the party prosecuted their search in the woods, to which free access was kindly permitted. Perthshire generally is a fruitful field for the mycologist, and many interesting species were found during these excursions. All of them, however, sink into insignificance when compared with one discovery which has immortalised the Crieff meeting, Mr. C. H. Spenser Perceval, a corresponding member of the Society, whom we had again the pleasure of welcoming to Scotland, had the rare good fortune to pick up Strobilomyces strobilaceus, Berk., a plant hitherto unknown in Scotland, and very rare in England. Several specimens were found, and the woods rang with delight. The bearings of the locality were carefully taken, and the sacred spot was marked. The beautiful scenery in the neighbourhood of Crieff and favourable weather, combined to make the meeting a most enjoyable one. The Society will hold its next annual Conference at Rothiemurchus, under the presidency of the Rev. Dr. Keith, of Forres. *J. S.*

CRYSTAL PALACE.

October 10.—A very fine display of hardy fruits was seen upon the tables which had been placed along the eastern transept. Apples were produced numerously, and generally of very fine quality, a brilliant colouring characterising many of the fruits.

Apples.—In the class for a collection of Apples, not exceeding 100 dishes, Messrs. George Bunyard & Co., nurserymen, Maidstone, were 1st, with a superb lot, prominent among them being highly-finished examples of Emperor Alexander, Wealthy, a rich-coloured American variety; Bismarck, Gloria Mundi, Stirling Castle, Melon, Brabant Bellefleur, Stone's, Washington, Peasgood's Nonsuch, Warner's King, Lord Derby, New Hawthornden, Blenheim Orange, Lady Henniker, Grenadier, Small's Admirable, Gravenstein, Seaton House, Alfriston, Queen Caroline, King of Pippins, Gipsy King, and Cox's Orange Pippin, were wonderful specimens; Cornish Aromatic, Evagil, Calville Rouge, Fearn's Pippin, Worcester Pearmain, Rosemary Russet, and others, equally fine; 2nd, Mr. G. S. Sclater, Devon Nursery, Heavitree, Exeter, with some remarkably good examples also, particularly of Beauty of Wilts, Waltham Abbey Seedling, Blenheim Orange Warner's King, Tippet's Pearmain, Emperor Alexander, Hoary Morning, Fearn's Pippin, Cox's Orange Pippin, &c. Messrs. Cranston & Co., Hereford, were a good 3rd, eleven collections being staged.

In the class for twenty-four dishes, Mr. G. Woodward, gr. to Roger Leigh, Esq., Barham Court, Maidstone, was 1st, with perhaps as fine a lot as was ever before seen, the varieties being The Queen, Belle Dubois, Stone's, Washington, Lord Derby, Mère de Menage, Emperor Alexander, Warner's Kingl Blenheim Orange, Peasgood's Nonsuch, Minchal, Crab, Tower of Glamis, Beauty of Kent, Cox's Pomona, Cox's Orange Pippin, Ribston Pippin, Golden Noble, Mother, Melon, Brabant Bellefleur, Calville Rouge, and the variety of a rich red colour, named Præcox; Mr. A. Waterman, gr. to H. A. Brassey, Esq., Preston Hall, Aylesford, was a remarkably good 2nd.

In the class for twelve dishes, Mr. Sidney H. Goodwin, Mereworth, Kent, was 1st, with very fine examples of Yorkshire Beauty, Nelson's Glory, Stone's, Peasgood's Nonsuch, Cellini Pippin, Kentish Fillbasket, New Hawthornden, Cox's Pomona, Cox's Orange Pippin, Worcester Pearmain, Hoary morning, and Farleigh Pippin; 2nd, Mr. W. Parker, gr. to Mrs. Evans, Moreton Court, Hereford, who had fine fruit of Yorkshire Beauty, Blenheim Orange, Warner's King, Striped Beaufin, Golden Noble, Tyler's Kernel, Stirling Castle, Tom Putt, Fearn's Pippin, King Pippin, Ribston Pippin, and Court Pendu Plat.

Pears.—Messrs. T. Rivers & Son, Nurserymen, Sawbridgeworth, had the best collection of Pears not exceeding 100 dishes, and staged very fine fruit; the leading varieties being Princess, St. Legin, Marie Benoist, Beurre Langelier, Beurre Easter, Durondeau, Gansell's Bergamot, Madame Andre Leroy, Beurré Diel, General Todleben, Beurré Alexander, Lucas, Duchesse d'Angoulême, Pitmaston Duchess, Doyenné du Comice, Louise Bonne of Jersey, Beurré d'Amanlis, Brockworth Park, Knight's Monarch, Senateur Reveil, Beurré Hardy, Verulam, Beurré Superfine, &c.; 2nd, Mr. James Butler, gr. to A. J. Thomas, Esq., Orchard Lane Gardens, Sittingbourne, with very fine fruit generally, prominent being General Todleben, Beurré Six, Columbia, Beurré Diel, Beurré Gendrou, Louise Bonne, Marie Louise, Thompson's, Pitmaston Duchess, Doyenné Bossouch, Glou Morceaux, Fertility, Beurré Hardy, &c; 2rd, Messrs. Geo. Bunyard & Co.

In the class for twelve dishes of Pears, there was a very keen competition, Mr. G. Woodward being placed 1st, with very fine fruit of Durondeau, Pitmaston Duchess, General Todleben, Duchesse d'Angouleme, Conseiller de la Cour, Beurré Hardy, Beurré Diel, Doyenné du Comice, Brown Beurré, Beurré Superfin, Fondante de Pansel, and Brockworth Park; 2nd, Mr. Chisholm, gr. to Sir Thomas Geary, Bart., Tunbridge, with a very fine lot also.

Miscellaneous Collections of Apples and Pears were shown by Messrs. James Veitch & Sons, Exotic Nurseries, Chelsea, who had about 250 dishes of Apples, and 100 dishes of Pears—a very fine and instructive exhibition in themselves; by Messrs. J. Laing & Sons, Stanstead Park Nurseries, Forest Hill, who had 100 dishes of Apples and Pears, and a large sloping table filled with gay flowering Begonias, backed by Palms; by Messrs. T. Rivers & Sons, who had pot trees of Bismarck, Wagoner, Bijou, Marengo Crab, Melon and Fairy Apples; Uvedale's St. Germain, Doyenné du Comice, and Emile d'Heyst Pears; a tree of Guigne de Winkler Cherry, laden with small red fruit; some splendid fruit of King of Tomkins County and Pigonet Apples; and monster Pitmaston Duchess Pears, with dishes of Monarch and Coe's Golden Drop Plums. Also a collection of Pears from Mr. James Butler; Begonias in pots, cut Chrysanthemums, and Gourds from Messrs. H. Cannell & Sons; and a stand of blooms of Chrysanthemum Mrs. Hawkins, from Messrs. Hawkins & Bennett, Twickenham.

Vegetables.—These were both extensively and finely shown. The best unlimited collection, arranged for effect, came from Mr. T. A. Beckett, Cole Hatch Farm, Amersham. A very fine lot, covering a good sized sloping table, and arranged with excellent effect. There were probably some fifty varieties of vegetables, all shown in excellent form. Mr. A. Waterman was 2nd, with a similar collection characterised by high quality, and Mr. William Mist, Ightam, Kent, was 3rd. Mr. J. Lambert, gr. to Colonel Wingfield, Onslow Hall, Shrewsbury, had the best twelve varieties, a very fine lot indeed, well set up; Mr. A. Waterman was a very good 2nd.

In the cottagers' class for six dishes some good vegetables were also shown, Mr. Henry Gibbs, Church Green, Ightam, being 1st; and Mr. N. Goring, Three Bridges, Worth, Sussex, 2nd.

Messrs. Sutton & Sons, of Reading, and Messrs. James Carter & Co., Holborn, offered special prizes for collection of vegetables; in the class provided by the former firm, Mr. T. A. Beckett was again 1st, and Mr. C. J. Waite, gr. to the Hon. Colonel Talbot, Glenhurst, Esher, 2nd.

In Messrs. Carter & Co.'s class, Mr. C. J. Waite was awarded 1st, and Mr. R. Lye, The Gardens, Sydmonton Court, Newbury, was 2nd. Admirable vegetables were staged in both cases. But the practice of covering up the collections with the advertising cards of rival seed houses is one which cannot be too strongly condemned, and should be suppressed.

Messrs. J. Cheal & Son, nurserymen, Crawley, also offered prizes for a collection of six dishes of vegetables, but one competitor only, Mr. N. Goring, put in appearance, and was awarded 1st.

Gourds, &c.—The heaviest Gourd or Pumpkin weighed 119½ lb.—a huge yellow variety, 6 feet round, from Mr. G. Sheppard, Pilborough; Mr. John Redbourn, South Croydon, was 2nd, with a green ribbed Gourd weighing 95 lb.

The best collection of Pumpkins and Gourds came from Mr. C. Osman, Sutton Schools, who had a remarkably fine lot, consisting of white, green, Yokohama Squash, Custard Marrow, Moore's Cream, &c. 2nd, Mr. Sturgess, Court House Gardens, Banstead, with some very fine forms also, especially of the Turk's-cap type.

Mr. Osman was the only exhibitor of a collection of ornamental Gourds, having Turk's Cap, Roller-shaped, Orange, White, and Yellow Custard, Long White, &c.

MARKETS.

COVENT GARDEN, October 10.

Trade dull; supplies good; prices unaltered. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve ...	1	6– 5 6	Peaches, per doz. ...	4 0– 8 0	
Cobs, per 100 lb. ...	100	0– ...	Pine-apples, Eng.. lb.	1 6– 3 0	
Grapes, per lb. ...	0	6– 2 6	— St. Michael, each	2 0– 6 0	
Lemons, per case...	21	0–45 0	Plums, ½-sieve ...	2 6– 5 0	

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.
Beet, red, per dozen	1 0–	2 0
Carrots, per bunch...	0 6–	...
Cauliflowers, each ...	0 3–	...
Celery, per bundle ...	1 6–	2 0
Cucumbers, each ...	0 6–	0 9
Endive, per dozen ...	2 0–	...
Green Mint, bunch...	0 4–	...
Herbs, per bunch ...	0 4–	...
Leeks, per bunch ...	0 3–	...
Lettuce, per dozen ...	1 6–	...
Mushrooms, punnet	2 0–	...
Mustard and Cress, punnet	0 4–	...
Onions, per bunch ...	0 5–	...
Parsley, per bunch...	0 4–	...
Shallots, per lb. ...	0 6–	...
Spinach, per bushel...	2 6–	...
Tomatos, per lb. ...	0 9–	...
Turnips, per bunch, new	0 5–	...

POTATOS are about the same price as previously quoted. Trade better. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	18 0
Asters, per dozen ...	4 0–	8 0
Begonias, dozen ...	4 0–	12 0
Chrysanth., dozen ...	6 0–	15 0
Cyperus, per dozen .	4 0–	12 0
Dracæna terminalis, per dozen ...	30 0–	60 0
— viridis, per doz.	12 0–	24 0
Ericas, various, doz.	8 0–	18 0
Euonymus, in var., per dozen	6 0–	18 0
Evergreens, in var., per dozen	6 0–	24 0
Ferns, in var., doz.	4 0–	18 0
Ficus elastica, each .	1 6–	7 0
Foliage plants, various, each	2 0–	10 0
Fuchsias, dozen ...	3 0–	6 0
Hydrangea, per doz.	9 0–	18 0
Marguerites, doz. ...	6 0–	12 0
Mignonette, doz. ...	3 0–	6 0
Palms in var., each	2 6–	21 0
Pelargoniums, scarlet, per dozen ...	4 0–	6 0
Solanums, per dozen	6 0–	12 0

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.
Abutilons, 12 bun. ...	2 0–	4 0
Asters, English, bun.	4 0–	8 0
Bouvardias, per bun.	0 6–	0 9
Calla æthiopica, 12 bl.	3 0–	6 0
Camellias, 12 blooms	3 0–	6 0
Carnations, 12 blms.	1 0–	2 0
Chrysanth., 12 bun.	3 0–	9 0
Chrysanth., 12 blms.	0 6–	3 0
Cornflowers, 12 bun.	1 0–	3 0
Dahlias, 12 bun. ...	2 0–	4 0
Eucharis, per dozen	3 0–	6 0
Gaillardias, 12 bun.	2 0–	4 0
Gardenias, 12 blooms	2 0–	4 0
Gladioli, 12 bun. ...	6 0–	12 0
— 12 sprays ...	1 0–	1 6
Heliotropes, 12 spr.	0 3–	0 6
Lilium, var., 12 bl....	2 0–	6 0
Marguerites, 12 bun.	3 0–	6 0
Maiden Hair Fern, 12 bun.	4 0–	9 0
Mignonette, 12 bun.	1 0–	4 0
Pelargoniums, 12 spr.	0 6–	1 0
— scarlet, 12 spr....	0 4–	0 6
Primulas, double, 12 sprays	0 9–	1 0
Roses, Tea, per doz.	0 6–	1 6
— coloured, dozen.	2 0–	4 0
— red, per dozen ...	0 6–	1 0
— Safrano, dozen...	0 6–	1 0
Stephanotis, 12 spr.	3 0–	6 0
Sunflowers, various, per 12 bun. ...	3 0–	6 0
Sweet Sultan, 12 bun.	3 0–	4 0
Sweet Peas, 12 bun.	2 0–	4 0
Tuberoses, 12 blms....	0 4–	1 0

Orchid bloom in variety; fairly good supply, for this time of year.

SEEDS.

LONDON: *Oct.* 9. — Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report a poor attendance on the seed market to-day, with nothing of interest passing, dulness prevailing in almost all articles. Clover seeds all round are cheap and neglected. Winter Tares now tend upwards. Rapeseed meets an improved inquiry. Mustard unchanged. Canaryseed is cheap and abundant. Spot Hempseed is scarce. There is more doing in Blue Peas. Moderate prices are asked for the new Haricot Beans.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended October 5:—Wheat, 29*s.* 3*d.*; Barley, 29*s.* 4*d.*; Oats, 16*s.* 8*d.* For the corresponding week in 1888:—Wheat, 30*s.* 7*d.*; Barley, 29*s.* 1*d.*; Oats, 16*s.* 3*d.*

FRUITS AND VEGETABLES.

STRATFORD: *Oct.* 8.—Trade and supply have been excellent at this market during the past week:—Cabbages, 2*s.* to 3*s.* per tally; Savoys, 4*s.* to 6*s.* do.; Collards, 1*s.* 6*d.* to 2*s.* 3*d.* do.; Turnips, 2*s.* 6*d.* to 3*s.* per dozen bunches; do., 40*s.* to 50*s.* per ton; Carrots (household), 30*s.* to 35*s.* do.; do. (cattle feeding), 24*s.* to 26*s.* do.; Mangels, 14*s.* to 18*s.* do.; Swedes, 18*s.* to 24*s.* do.; Onions, Dutch, 5*s.* 6*d.* to 6*s.* per bag; do., Valencias, 6*s.* to 7*s.* 6*d.* per case; Apples, English, 2*s.* to 6*s.* per bushel; Watercress, 6*d.* per dozen; Marrows, 2*s.* to 3*s.* 6*d.* per tally; Pears, 5*s.* to 9*s.* per bushel; Walnuts, 10*s.* to 12*s.* per bag.

POTATOS.

BOROUGH AND SPITALFIELDS: *Oct.* 8.—Moderate supply, and steady demand, at unaltered rates. Early Rose, 40*s.* to 50*s.*; Regents, 55*s.* to 75*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 45*s.* to 70*s.*; Imperators, 45*s.* to 65*s.* per ton.

SPITALFIELDS: *Oct.* 9. — Quotations:—Magnums, 45*s.* to 60*s.*; Regents, 60*s.* to 80*s.*; Imperators, 50*s.* to 65*s.*; Hebrons, 50*s.* to 70*s.*; Early Rose, 50*s.* to 60*s.* per ton.

STRATFORD: *Oct.* 8. — Quotations:—Magnums, light, 50*s.* to 70*s.*; do., dark, 45*s.* to 50*s.*; Hebrons, 50*s.* to 70*s.*; Elephants, 50*s.* to 70*s.*; Imperators, 50*s.* to 65*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime 1887 Clover, 115*s.* to 130*s.*; new, 80*s.* to 100*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 100*s.*; inferior, 20*s.* to 50*s.*; straw, 20*s.* to 40*s.* per load.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending October 7, is furnished from the Meteorological Office:—

"The *weather* has been in a cloudy and unsettled condition very generally, with frequent (and at times heavy) falls of rain. Thunder and lightning were experienced over the south of England during the afternoon or evening of the 4th.

"The *temperature* has continued below the mean in all districts, the deficit having ranged from 1° to 3°. The highest of the maxima, which were recorded on somewhat irregular dates, varied from 55° in 'Scotland, N.' to 62° in 'Scotland, E.,' 'England, S.W.,' and 'Ireland, S.,' and 63° in the 'Channel Islands.' The lowest of the minima (which were also registered at varying times), ranged from 30° in 'England, S.W.,' and 32° in 'Scotland, N.' and the Midland Counties, to 39° in 'England, S.,' and to 44° in the 'Channel Islands.' During the greater part of the week the minima were rather above the mean for the time of year.

"The *rainfall* has been less than the mean in 'England, N.E.' and the 'Midland Counties,' but more in all other districts.

"*Bright sunshine* shows a decrease in nearly all places, and has been very deficient generally. Over the greater part of the kingdom, the percentage of the possible amount of duration ranged from 10 to 25, but in 'England, S.W.,' 34 was recorded, and in the 'Channel Islands,' 39."

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending October 7.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	39	0	+ 163	+ 9	8 +	186	31.8	21	23
2	1 —	42	1	— 19	+ 12	3 +	151	20.6	22	30
3	2 —	49	0	— 21	+ 11	1 —	138	18.1	15	28
4	3 —	53	0	— 48	+ 119	1 +	144	20.7	13	31
5	3 —	46	0	— 50	+ 65	2 —	134	22.1	17	29
6	2 —	65	0	— 3	+ 74	5 +	135	18.8	23	32
7	2 —	46	0	+ 19	— 22	5 +	159	31.2	21	31
8	3 —	53	0	+ 23	— 1	2 +	145	24.4	10	30
9	3 —	60	0	— 84	+ 87	3 +	144	25.7	34	36
10	2 —	52	0	+ 28	— 53	8 +	177	29.8	12	26
11	3 —	57	0	— 5	— 14	3 +	156	27.5	25	33
12	3 —	83	0	+ 79	— 16	2 +	150	19.2	39	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

NOTICES TO CORRESPONDENTS.

ANIMAL CHARCOAL: *W. O. N.* Useless as a manure, the roots not absorbing carbon in any form. Animalised charcoal such as is got from sugar refineries, and containing sometimes as much as 20 per cent. of blood, has good value as a manure. As it is mild in its action, considerable quantities per acre may be employed.

BEGONIA: *J. M.* When the growths get matured and the frost cuts down the stems, the tuber is uninjured, and may remain in the ground or be taken up and stored. In its native country, South America, we should suppose that the Begonia dies down during the resting period.

BOOKS: *L. C. H. Vines and Vine Culture*, by A. F. Barron, published by the author, Royal Horticultural Society, Chiswick. DECORATION: *Decorator. Domestic Floriculture*, by F. W. Burbidge (W. Blackwood & Sons), 1875, second edition; *Floral Decorations*, by Annie Hassard (Macmillan & Co.), 1875.

CORRECTION, p. 390.—Owing to bad writing, Mr. Hollington's initials were given as T. W. instead of A. J., and Mr. Treeton, the patentee of the staging, as Mr. Tredon.

CHRYSANTHEMUM BUDS GREEN: *A. R. C.* The reason that the buds in the centre of the flower are green is that they are very early, and were "taken" too soon for the various varieties which belong to the Queen family. These are noted for showing green-centred buds when they develop at an early date, as these are doing. If you do not interfere with the buds in their present condition, it will be found that the petals will gradually expand, even from the at present green centres, and you need not fear that all the buds now so green will be lost, as they certainly will flower in due time; but the blooms may have a rough appearance, and show but few signs of incurving. The best formed blooms of this family of Chrysanthemums are produced from buds which form a little later than those sent, and show none of the green scales so prominent in this case; and the petals incurve much better. The buds should have been removed when they formed early in August, and the next to set should have been left, which would have produced well-formed blooms, although a trifle smaller than the first. The bud of Alfred Salter disclosed a decayed speck in the centre, a symptom of high feeding; or, if that be not the case, it may be due to the early setting of the buds, or some check to the plants at about the time the buds were forming.

CLEANING ASTER SEED: *A. S.* The seeds should be drawn out of the flower with the fingers, lightly grasping them in a bunch; the petals would then remain in the other hand. Sifting the seeds in fine sieves, or winnowing with a pair of dust-bellows, after rubbing them with the hand, would remove the chaffy portion.

LILY OF THE VALLEY: *E. N.* Roots intended to be forced had better not be allowed to get frozen—that is, if these are still where they grew—but should be slightly mulched. Roots bought from the nurserymen should certainly not be exposed to frost.

MULBERRY LEAVES: *J. H.* Such appearances are not unusual in old trees.

NAMES OF FRUITS: *J. H. B. Plum:* Coe's Golden Drop. Where did the fruit grow, open or walls? —*J. L.* 1, Lord Suffield; 2, Fearn's Pippin; 4, King of the Pippins; 5, Kerry Pippin; 6, Emperor Alexander. — *Constant Reader.* 1 and 2, Doyenné Boussoch; 3, Comte de Lamy; 4, Fondante d'Automne; 5, Duchess d'Angoulême. — *A. B.* 1, Dutch Codlin; 2, Brabant Bellefleur; 3 and 8, Gloria Mundi; 6 and 7, Alfriston; 10, Dumelow's Seedling; 11, Cellini; *Pears:* 3, Winter Nelis; 4, Maréchal de la Cour. — *T. H.* 1, Josephine de Malines; the largest fruit, Vicar of Winkfield; the others Nouveau Poiteau. The tickets loose in the bottom of the box.—*Lymington.* 1, Van Mons Léon Leclerc; 2, Chaumontel; 3, not quite sure of; 4, Beurré Capiaumont; 5, Kerry Pippin.—*Charles Cundy. Apple:* Brabant Bellefleur.—*G. W. S.* 1, Marie Louise; 2, Maréchal de la Cour.

NAMES OF PLANTS: *Benshanii.* A species of Amaranthus — probably sylvestris — a common weed on the Continent. — *L. C. H.* 1 and 4, Blechnum spicant; 2, Polypodium vulgare; 3,

Asplenium Trichomanes; 5 and 10, A. adiantum nigrum; 6, A. Ruta muraria; 7, Aspidium aculeatum; 8, A. spinulosum; 9, Cystopteris fragilis; mostly bad specimens, and determination in consequence more or less uncertain.—*S. C.* Probably Aristolochia Sipho.—*G. W. B.* Calceolaria Sultan, one of the best dark varieties.—*J. B.* 3, Thuia (Biota) orientalis var.; 4, Cupressus torulosa; 5, C. Goveniana.—*O. F. N.* Nephrolepis exaltata.—*G. P.* 1, Stauntonia latifolia; 2, Lardizabula biternata.—*E. C., Bordeaux.* Cattleya Mossiæ speciocissima.—*T. E. H.* Cattleya Eldorado; Oncidium lanceanum.—*H. B.* Dendrobium formosum giganteum.—*F. R.* 1, Aphilandra pectinata; 2, Aphilandra, with variegated leaves, we are unable to name.—*G. Southwell.* 1, Doodia lunata; 2, Adiantum excisum multifida; 3, Duranta Baumgardti; 4, Jasminum Sambac, fl.-pl. Trees next week.

Organisation of Gardeners: *H. L.* We do not think any such organisation as you mention would help you to remedy the fact that there are more gardeners than there are places to fill. In the colonies there are many openings for a man able and willing to work, and in the United States English gardeners of good character and competence are in request.

Pear: *W. J. Brown.* The variety is Marie Louise, an excellent autumn Pear. The tree—an older one, judging by the large diameter of the stem, than you believe it to be—is hardly worth the trouble and expense of transplantation, but that is the only remedy, its roots having reached the impoverished subsoil. The better plan would be to cut it down, and plant the same variety, on the Pear stock, against a west or east wall; or plant bush, pyramid, or cordon trees on the Quince stock on walls or in the open. Those on the Quince will bear fruit in one or two seasons.

To Get Dutch Bulbs to Flower Early: *Philetus.* It is now rather late to attempt to do this, still something may be done in the way of hastening rooting of the bulbs. Pot at once in rich sandy loam, and use 48's or small 32's for the Hyacinths, one bulb in a pot, Tulips four or five in a pot. Narcissus make much root, and should be put three in a large 32, or one in a 48. After watering the soil, let the surface become firm before placing them away. If you have a worn-out hotbed, within a pit or in the open, dig out of the middle of this a square hole down to the bottom, and large enough to hold your bulb-pots when standing close together, or, if needs be, in a double layer. Put some coal-ashes at the bottom, and arrange the pots thereon. Cover with boards 1 foot above the pots, and return most of the dug-out materials on to the top of these. In five or six weeks make an examination of the bulbs, and if rooting has made much progress with any of them, those must be taken out, and the boards and dung replaced. Other examinations must be made at fortnightly intervals until all the pots are removed. This method is a better one than that of placing the pots in dark places above ground, where the temperature may vary considerably.

CATALOGUES RECEIVED.

Hallett's Pedigree Seed Co., 5, Seymour Street, Brighton—Pedigree Cereals.
S. G. Rumsey, Wrotham, Kent—Roses.
Lambert & Reiter, Trier, Germany—Roses.
Isaac Davies & Sons, Ormskirk, Lancashire—Rhododendrons, Azaleas, Shrubs, &c.
Ketten Bros., Luxembourg—Roses.
Dicksons & Co., 1, Waterloo Place, Edinburgh—Roses.
T. Warner, The Abbey, Leicester—Fruit Trees, Shrubs, &c.
Buckland & Broadbent, Gee Cross, near Manchester—Carnations and Picotees.
J. Waterer & Sons, Bagshot, Surrey—Rhododendrons, Trees, and Shrubs.
James Walters, Mount Radford Nursery, near Exeter—Roses.
J. Cheal & Sons, Lowfield Nurseries, Crawley, Sussex—Trees and Shrubs, Fruit Trees, Bulbs, &c.

Communications Received.—W. P. Jackson.—H. R. B.—E. J. Lowe.—Sutton & Sons.—G. Croucher.—J. H., York.—A. P. C.—J. Geddes.—W. C. & Son.—P. & Co.—Mungo Chapman.—M. T. M.—W. H.—J. Hughes.—V. L.—Dr. M. C. C.—J. R. J.—J. Veitch & Sons.—W. C.—W. G. Smith.—J. S.—H. E.—W. D.—T. H. M.—E. C.—S. D.—U. D.—W. Roberts.—W. Paul.—R. D.

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CYCLAMEN (of sorts)
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DEUTZIA GRACILIS
,, CRENATA fl. pl. (in pots)
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EPACRIS (of sorts)
EPIPHYLLUMS (of sorts)
ERICAS (of sorts)
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Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
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And in 6*d.* and 1*s.* packets.
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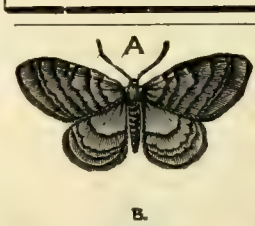
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IMPROVED & ONLY GENUINE
MEDICATED TOBACCO PAPER
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REDUCED PRICE, 1/6 per lb.
28 lbs. and upwards—Carriage Paid.
Parcels for trial, sent Free by Parcels Post, viz:—
2 lbs. 3/4, 4 lbs. 6/8, 6 lbs. 9/9, 8 lbs. 13/-, 10 lbs. 16/-
Dicksons Improved Fumigating Pan
Is vastly superior to any other.
PRICE in Iron 6/6, or in Copper, 21/-



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(Limited)
The Royal Seedsmen,
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HORNE'S TREE DRESSING.
Now Ready for Catching the Winter Moths.
INVALUABLE.
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SAVE HALF THE COST.
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COARSE AND FINE SILVER SAND
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Consumers should **Buy Direct** from the Owner of these Celebrated and Extensive Pits, which contain a practically inexhaustible supply of Splendid Sand, and thus save half the ordinary cost. NO TRAVELLERS OR AGENTS.
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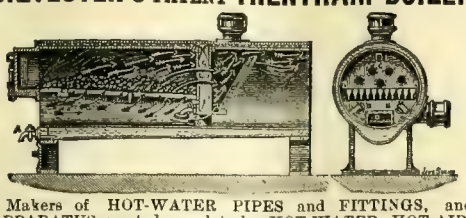
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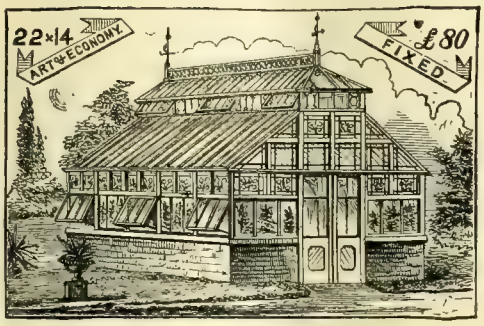


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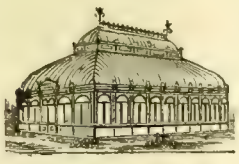
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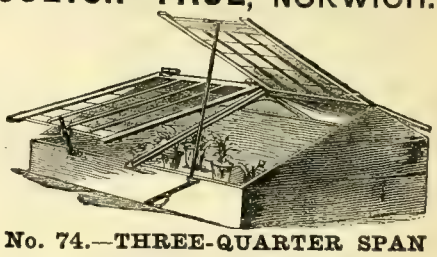
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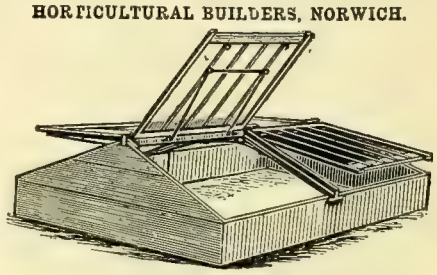
	Length.	Width.		
1 Light Frame,	4 ft.	by 6 ft.		£2 15 0
2 " "	8 "	by 6 "	Cash	4 7 6
3 " "	12 "	by 6 "	Prices,	6 0 0
4 " "	16 "	by 6 "	Carriage	7 12 6
5 " "	20 "	by 6 "	Paid.	9 5 0
6 " "	24 "	by 6 "		10 17 6

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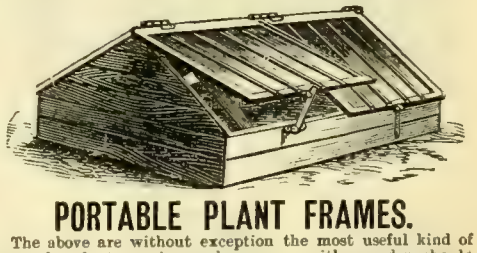
The illustration shows a Frame 8 feet by 6 feet. Made of good redwood deal, sides and ends 1¼ inch thick, painted three coats of oil colour; lights 2 inches thick, glazed with 21-oz. sheet glass. Height of sides, 14 inches. Height at ridge, 32 inches. The lights are hinged and fitted with "Registered" Set-opes, which safely support them for ventilation, &c., and the hinges are so formed that the lights can be turned quite over, or taken off at pleasure.

	Length.	Width.		
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2 " "	8 feet by 6 feet ...		Cash Prices,	4 7 6
3 " "	12 feet by 6 feet ...		Carriage	5 17 6
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6 feet long, 3 feet wide		2	0	0
6 feet " 4 feet "	Packing	2	10	0
12 feet " 4 feet "	Cases	4	7	6
6 feet " 5 feet "	Free.	3	10	0
12 feet " 5 feet "		5	17	6

Larger sizes at proportionate prices.

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Hothouse Builders and Engineers, Royal Horticultural Works,

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8	„ ..	0	5	0	19	„ ..	0	10	6
9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
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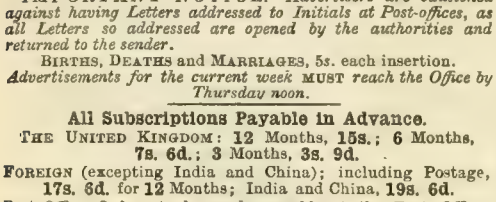
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Mr. RICHARDSON has been engaged as Head Gardener to JAMES BLYTH, Esq., Wood House, Stanstead, Essex.

Mr. E. HINDRY has been engaged as Gardener to Mrs. KNIGHT, Roke Manor, Romsey, Hampshire.

Mr. F. CAPP, late of Northcroft, Englefield Green, has been engaged as Gardener to J. GARDINER MUIR, Esq., Newport House, Eardisley, Herefordshire.

Mr. W. MOXHAM has been engaged as Gardener to the Hon. FITZGERALD FOLEY, Fordingbridge, Hants.

Mr. W. GRACE, late Gardener to W. H. ALEXANDER, Esq., Shipton, Andover, has succeeded Mr. MOXHAM as Gardener to W. R. NEAVE, Esq., Bickton, Fordingbridge.

Mr. WILLIAM FENNELL, late Foreman to the Metropolitan Public Garden Association, has been appointed Superintendent of St. Martin's Gardens, London, N.W.

WANT PLACES.

Letters addressed "Poste Restante" to initials or to fictitious names are not forwarded, but are at once returned to the writers.

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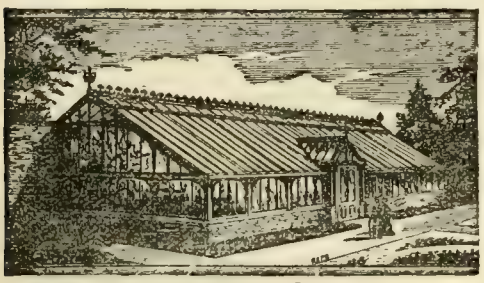
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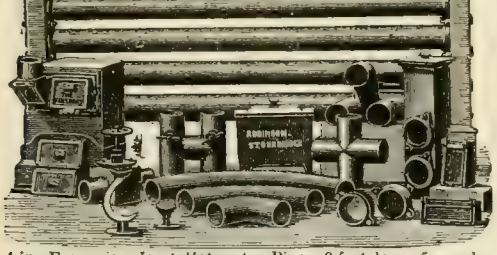
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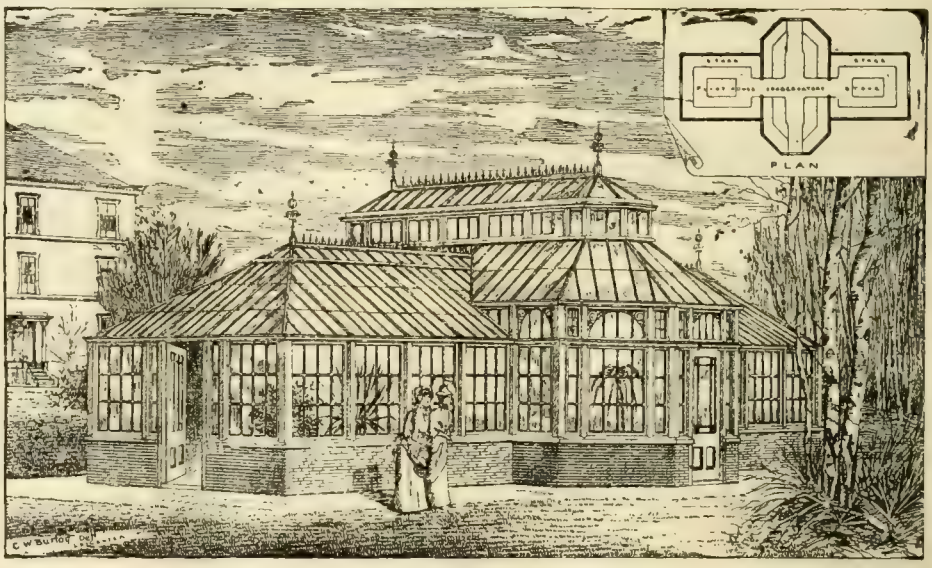


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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, October 12, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2547.

No. 147.—Vol. VI. {Third Series.} SATURDAY, OCTOBER 19, 1889. {Regt. as a Newspaper. WITH SUPPLEMENT. {PRICE 3d. POST-FREE, 3½d.

MASSACHUSETTS AGRICULTURAL COLLEGE

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,, winter garden at (Supplement).
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Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position be guaranteed for advertisements occupying less space than an entire column.

Now ready, in cloth, 11s. 6d.

THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

THE GARDENERS' CHRONICLE IN AMERICA.
The Subscription to America, including Postage, is $4.30 for Twelve Months.
Agent for America:—E. H. LIBBY, Manager, "The American Garden," 10, Spruce Street, New York, to whom American Orders may be sent.

ROYAL HORTICULTURAL SOCIETY. CHRYSANTHEMUM CENTENARY CONFERENCE and EXHIBITION, 1889.
A CONFERENCE and EXHIBITION to celebrate the Centenary of Chrysanthemum Culture in this country will be held at the Royal Horticultural Society's Gardens, Chiswick, on TUESDAY and WEDNESDAY, November 5 and 6, 1889.
Papers will be read by leading authorities on Chrysanthemum Culture each day at 1.30 P.M.
The EXHIBITION will embrace all subjects pertaining to the Chrysanthemum, whether in its botanical, its horticultural, its literary, or its artistic aspects; and it will seek to bring together for the purposes of reciprocal information and friendship all those interested in the Chrysanthemum and its culture.
Admission: Tuesday, from 1 o'Clock, and Wednesday, from 10 o'Clock, One Shilling.

BRIGHTON and HOVE SEVENTH ANNUAL CHRYSANTHEMUM SHOW, NOVEMBER 5 and 6. Cut Blooms—1st Prize, a 12-Guinea Cup and £7; 2nd, £8; 3rd, £3; 4th, £2. Schedules of
MARK LONGHURST, Sec., 18, Church Road, Hove.
L. B. and S. C. R. take all Exhibits to and from the Show free of charge if unsold.

MARKET HARBOROUGH CHRYSANTHEMUM SHOW, WEDNESDAY and THURSDAY, November 6 and 7, 1889. Open Class, for 36 Cut Blooms, 18 Japanese and 18 Incurved, distinct varieties. 1st, £5; 2nd, £3; 3rd, £1. Entrance fee, 5s. Further particulars from
GEO. GREEN, Hon. Sec.

The Finest Tulips for Massing.
SUTTON'S INIMITABLE BEDDING TULIPS, in distinct shades of colour, for simultaneous flowering. First Early Single Tulips, various colours; Second Early Single Tulips, various colours; First Early Double Tulips, various colours; Second Early Double Tulips, various colours.
"Your Inimitable Tulips made a splendid show."—Mrs. MORLEY, *St. Brelades.*
For full particulars see SUTTON'S BULB CATALOGUE, containing complete Lists of the best Bulbs of the season. Beautifully Illustrated. Price 6d., post-free.
Sutton's Bulbs Genuine only Direct from—
SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.
(All Bulbs Carriage Free, except orders under 20s. value.)

ROMAN HYACINTHS, NARCISSUS, LILIUMS, TUBEROSES, and many other FRENCH BULBS, grown and offered by LOUIS BREMOND, fils, Ollioules, France.
WHOLESALE LIST on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, London, W.C.

Rhododendrons.
H. LANE AND SON have a splendid stock of best-named sorts well set with buds for forcing or planting, also Hybrid Seedlings and Ponticums for wood planting. CATALOGUE on application.
The Nurseries, Birkhamsted, Herts.

Paul & Son's Rose Catalogue.
PAUL AND SON, The "Old" Nurseries, Cheshunt, will be happy to send this to any intending Purchaser. It is carefully revised on the lines which have served as a model for several of the other growers' lists.

FERNS—FERNS.—Trade offer.—Great Annual Sale of Surplus Stock cheap; 100,000 to select from, in 20 most saleable sorts; 10s. and 12s. per 100 Adiantums, Pteris, &c. Adiantum cuneatum and Pteris Mayii, 12s. per 100. SMITH, The London Fern Nurseries, Loughboro' Road, Brixton.

EVERGREEN HEDGES.—Fine bushes of LINGUSTRUM OVALIFOLIUM and THUIA LOBBII, from 3 feet to 6 feet. Plant now. Price LIST free.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

STRAWBERRY PLANTS.—Sir J. Paxton and Elton Pine, 2s. 6d. per 100; Laxton's Noble, 2s. 3d. per doz., free; Paxtons, in fruiting pots, 16s. per 100, on rail.
H. BOTTING, Botley, Hants.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

J. W. BARNHAM (late of Squelch & Barnham) RECEIVES ON COMMISSION, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

AUSTIN ROBERTS is prepared to RECEIVE CHOICE FLOWERS for Disposal at best Market Prices. Quick Sales, prompt returns, and Weekly Settlements. Good references. Boxes and Labels supplied.
26, Russell Court, Catherine Street, Strand, London, W.C.

Surplus Cut Flowers.
HOOPER AND CO. (Limited) RECEIVE and DISPOSE of any quantity of above at best Market Prices. Boxes, &c., supplied.—Address, Commission Department, HOOPER AND CO. (Limited), Covent Garden, W.C.

CHOICE FLOWERS—CHOICE FRUIT.—Highest Market Prices guaranteed. Prompt cash.
HENRY RIDES, Covent Garden, W.C.

HENRY SQUELCH (late Squelch & Barnham) RECEIVES CONSIGNMENTS of good Black Grapes, Muscats, Cucumbers, Tomatos, and Beans; also all kinds of choice Hothouse Flowers. H. Squelch's trade being especially for First-class Hothouse Produce, and he having a connection amongst the best Houses in London and Country, is able to command highest Market Prices. Account Sales furnished daily, and accounts settled weekly, or as desired.
Empties and Labels Supplied. Bankers' and other references.
North Row, Covent Garden Market, W.C.

BOOKS on ROSES by Wm. PAUL, F.L.S.—"The Rose Garden," ninth edition, 4to, 360 pp., fifteen coloured plates, numerous engravings, 17s. 6d. nett; the same 8vo, without plates, 8s. 9d. nett. "Roses in Pots," sixth edition, illustrated, 2s. "Roses and Rose Culture," sixth edition, illustrated, 1s. The *Journal of Horticulture* says:—"The best works on Roses are those by Mr. Wm. Paul."
Wm. PAUL AND SON, Waltham Cross, Herts.

CAPE BULBS.—Botanic Gardens, Capetown. The usual Orders from the Trade are solicited.
Output December to February.
P. MACOWAN, Director, Capetown.

ORCHIDS, The Specialty.—New Interleaved Catalogue of an exceedingly healthy and well-grown Stock, just published, post-free on application.
FRED HORSMAN AND CO., Colchester.

RICHARDIA ALBA MACULATA.—Strong Bulbs of the above-mentioned can be had at moderate prices. Apply to
P. VAN TIL JZ., AND CO., Florists, Hillegom, near Haarlem, Holland.

SCHUBERTIA GRANDIFLORA.—See page 354 of this Paper, September 28 last, for recommendation of this New Plant exhibited, with large white flowers 2 inches in diameter, in rich bunches powerfully and deliciously scented. Strong Plants, 3s. 6d. each.
HOOPER and CO. (Ltd.), Pine-Apple Nursery, Maida Vale, W.

DESCRIPTIVE CATALOGUE. — Roses, Fruit Trees, Rhododendrons, Conifers, Deciduous and Evergreen Trees and Shrubs, Forest Trees, Clematis, Ivies, &c., on application.
150 Acres devoted to Nursery Stock.
H. LANE AND SON, The Nurseries, Great Berkhamsted, Herts.

A COLLECTION of SUCCULENTS for SALE, consisting of Gasterias, Howorthias, Echeverias, Aloes, Cacti, &c., as a whole or part.—Apply, N., 5, Sylvester Terrace, Markhouse Road, Walthamstow.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15s. to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

W. GORDON'S first consignment of LILIUM AURATUM has arrived. Prices, 4d., 6d., 9d., 1s., and 1s. 6d. each; per 100, 30s., 35s., 45s., 55s., and 70s. Liberal allowance to the Trade. Apply for CATALOGUE to
The Nurseries, Amyand Park Road, Twickenham.

PLANTING SEASON. — FRUIT TREES, COB NUTS, FOREST TREES, and SHRUBS. Several thousand for sale, all well rooted, strong and healthy.—Apply, TODDINGTON ORCHARD CO., Winchcomb, Gloucestershire.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. 15s. per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.

GEORGE LEE, F.R.H.S., has a few thousand LAXTON'S "NOBLE" STRAWBERRY PLANTS for Sale, at from 5s. to 12s. per 100; KING OF THE EARLIES, 3s. Clevedon, October 9.

Strawberries, from the Garden of England.
GEORGE BUNYARD AND CO. can now offer very fine Runners and Plants in small pots of all the finest kinds. LIST free.
Old Nurseries, Maidstone.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SENT GRATIS.—WOOD AND SON'S interesting Pamphlet on Fertilizing Moss. Most valuable information on Plant and Bulb Culture.
WOOD AND SON, Wood Green, N.

CHRYSANTHEMUM CULTURE.—Standen's Manure, admitted by growers to be unrivalled for this purpose; in tins, 1s., 2s. 6d., 5s. 6d., and 10s. 6d. each.
Sold by all Seedsmen.

SALES BY AUCTION.

Important Notice.

MESSRS. PROTHEROE AND MORRIS beg to call attention to their FORTHCOMING SALES as advertised in THIS DAY'S PAPER, and will be GLAD TO RECEIVE the NAMES of those desirous of Receiving Catalogues, which are sent free of charge. Messrs. P. & M. will also be pleased to add the names of intending purchasers to their permanent lists for Catalogues to be forwarded from time to time. Auction and Estate Offices, 67 and 68, Cheapside, London, E.C.

Dutch Bulbs.

GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Isleworth.

SPECIAL ANNUAL TRADE SALE of thousands of beautifully grown Golden EUONYMUS and young CONIFERS, for immediate potting, window boxes, or for growing on, by order of Messrs. Charles Lee & Son.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Wood Lane Nursery, Isleworth, on MONDAY NEXT, October 21, at 12 o'Clock precisely, in consequence of the unusually large number of Lots, 5000 of the best Silver and Golden EUONYMUS, splendidly coloured; 1000 AUCUBAS, 1 to 3 feet; 500 AZALEA MOLLIS; 1000 Standard APPLES, of the best sorts; thousands of various CONIFERS for potting and planting out; 600 Standard, Victoria, and Gisborne PLUMS; thousands of Standard DAMSONS; hundreds of SOLANUMS, profusely berried; ERICA GRACILIS AUTUMNALIS, and HYEMALIS, and other Plants.

May be viewed any day prior to the Sale. Catalogues obtained on the Premises; at the Royal Vineyard Nursery, 2, Hammersmith Road, W.; and of the Auctioneers, 67 and 68, Cheapside, E.C.

East Dulwich.—Without Reserve.

MESSRS. PROTHEROE AND MORRIS are instructed by A. Briant, Esq., of East Dulwich, to SELL by AUCTION, at the Shawbury Hall, Shawbury Road (5 minutes' walk from East Dulwich Station), where the plants have been removed for convenience of sale, on MONDAY NEXT, October 21, at 1 o'Clock, his entire COLLECTION of ORCHIDS, ill-health compelling him to relinquish their cultivation. The plants are in excellent condition, and include many rare and choice species.

On view the morning of Sale at Shawbury Hall, as above, where Catalogues can be had; also from the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

SPECIAL SALE of LILIES.—Important to the Trade.

5000 Lilium auratum, splendid Bulbs, just received from Japan; also several thousands of various Lilies, including 2000 Lilium rubrum cruentum, 1600 Lilium album Kroetzeri, 5500 Lilium longiflorum, grand bulbs; 200 Lilium auratum, rubro vittatum and virginale, tigrinum, eximium, elegans, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 22, at half-past 11 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Heaton House, Cheshunt.

The well-known Collection of ESTABLISHED ORCHIDS, formed by the late C. J. Partington, Esq., and including undoubtedly the finest lot of Phalænopsis that has been offered for many years.

MESSRS. PROTHEROE AND MORRIS have been favoured with instructions from the Executors to SELL by AUCTION, on the Premises as above, about 1 mile from the Cheshunt Railway Station, on TUESDAY and WEDNESDAY, October 22 and 23, at half-past 12 o'Clock precisely each day, without the least reserve, the above well-known Collection of ESTABLISHED ORCHIDS, including an exceptionally fine lot of Phalænopsis, the whole of the plants being remarkably well-grown, and in excellent condition. The Collection also includes a very fine batch of Cattleya Mendelii, five plants of Cattleya Gaskelliana alba, Cattleya Mossiæ, a splendid lot of Masdevallias, Odontoglossum Alexandræ, and others.

May be viewed by appointment with the Gardener any day prior to the Sale. Catalogues are now ready, and may be obtained of the Gardener, on the Premises, or of the Auctioneers, 67 and 68, Cheapside, E.C.

Brixton.

Periodical Sale of well-grown NURSERY STOCK of GREENHOUSE PLANTS, by order of Messrs. Ponsford & Son.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Loughborough Park Nursery, Brixton, S.W., close to the Loughborough Park Station, on TUESDAY and WEDNESDAY, October 22 and 23, at 12 o'Clock precisely each day, a large quantity of well-grown NURSERY STOCK, particularly adapted for the London suburbs, including 4000 Golden and Silver Euonymus, 6000 Green Euonymus, 2500 Box, mostly for potting; 1500 Cupressus and Thuias, 3000 Aucubas, 1000 Laurels of sorts, 3000 Oval-leaved Privet, 2000 Variegated and Green Ivies, 1000 Ampelopsis, and other Climbers; 2000 Limes, and other Standard Trees; 1000 London Planes, 1000 Standard Mulberries, fine young trees; together with a large assortment of unusually well-grown Palms and Decorative Plants, Camellias, Azaleas, &c.

May be viewed one week prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

AZALEAS, PALMS, FERNS, and other PLANTS, from Belgium; Decorative PLANTS from an English Nursery, 300 lots of first-class DUTCH BULBS, DAFFODILS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on WEDNESDAY NEXT, October 23, at half-past 11 o'Clock precisely, without reserve.

On view morning of Sale, and Catalogues had.

Knockholt, near Sevenoaks.

Two and a half miles from Halstead Station, S.E.R.

UNRESERVED SALE of beautifully-grown NURSERY STOCK, by order of Mr. W. Dale, who is letting the Nursery.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, on the Premises, The Hickmandia Nursery, Knockholt, Kent, on THURSDAY and FRIDAY, October 24 and 25, at 1 o'Clock each day precisely, the whole of the well-grown NURSERY STOCK, comprising thousands of Conifers and Evergreen Shrubs in great variety, many of them being very fine specimens, adapted for immediate effective planting; 3000 Green Hollies, 2 to 4 feet; 2000 Rhododendrons, 1000 Cupressus Lawsoniana, 3 to 7 feet; 500 English Yews, 3 to 5 feet; thousands of Forest Trees, a large quantity of well-grown Fruit Trees, Laxton's new Strawberry ("Noble"), Climbing Plants, 60 bushels of Potatos, &c.

May be viewed one week prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

N.B.—The capital NURSERY, comprising 4 acres of Land, with Dwelling-house, Seed Shop, five Greenhouses, Sheds, &c., TO BE LET, on Lease, at a very low rental. Full particulars of the Auctioneers.

Friday Next.

Standard, Dwarf, and Climbing ROSES, including the best Hybrid Perpetuals and Teas; choice Hardy AMERICAN PLANTS, RHODODENDRONS, and other Evergreen Shrubs; ORNAMENTAL and FRUIT TREES, and a variety of GREENHOUSE and DECORATIVE PLANTS, CARNATIONS, PICOTEES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on FRIDAY NEXT, October 25, at half-past 12 o'Clock.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday Next.

UNFLOWERED CATTLEYAS.

For Sale absolutely Without Reserve, by order of Mr. G. T. White.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, October 25, at half-past 12 o'Clock, several hundreds of fine CATTLEYA MENDELII, MOSSIÆ, &c., mostly in sheath, and unflowered, together with a good lot of ODONTOGLOSSUM CRISPUM, PESCATOREI, HASTILABIUM, and other COOLHOUSE PLANTS, CYPRIPEDIUMS, &c.

Also about 350 well-grown ESTABLISHED ORCHIDS, another property for Sale without reserve.

On view morning of Sale, and Catalogues had.

Harrow, Middlesex.

Most favourably situate, overlooking Harrow School, about 20 minutes walk from Harrow Station, Metropolitan Railway, and 35 minutes walk from Harrow Station, L. and N. W. Railway.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. T. Chamberlain, who is retiring from the Business, to SELL by AUCTION, on the Premises, the Nursery, Sheepcote Road, Harrow, on MONDAY, October 28, at half-past 11 o'Clock precisely (immediately preceding the Sale of the Nursery Stock), the choice FREEHOLD BUILDING ESTATE, known as the Harrow Nursery, Harrow, possessing a commanding frontage of about 600 feet to the Sheepcote Road, and containing an area of 2 ac. 3 rds, 5 perches, or thereabouts, adapted for the erection of Villa Residences or Cottage Property, so much in demand in the neighbourhood, or for continuing as a Nursery.

Particulars and conditions of Sale may be had on the Premises, of Mr. E. T. CHAMBERLAIN, 1, College Terrace, College Road, Harrow; of Messrs. CANNON AND PALMER, Solicitors, Wool Exchange, Coleman Street, E.C.; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

Exeter.

SIX DAYS UNRESERVED SALE of particularly well-grown NURSERY STOCK, presenting to Gentlemen and the Trade, largely engaged in Planting, a splendid opportunity of securing acres of well-assorted and thriving young Stock.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co., who are relinquishing the business, to SELL by AUCTION, on the Premises, the Nurseries, Exeter, on MONDAY, October 28, and five following days, at half-past 12 o'Clock precisely each day, without the slightest reserve, the First Portion of the extensive NURSERY STOCK, comprising specimen Border Shrubs, in rich assortment, and in considerable quantities; 25,000 Conifers of the choicest description, beautifully grown and in various sizes; 20,000 Evergreens, comprising Variegated and Green Hollies, Golden and English Yews, &c.; 3000 Hybrid Rhododendrons, 28,000 Fruit Trees, consisting of 6000 Standard, Dwarf, and Pyramidal Apples; 4000 ditto Pears, 1000 Dwarf-trained Peaches, Nectarines, and Apricots, not injured by frost. Thousands of Ornamental Trees, Deciduous Shrubs and Climbing Plants; 15,000 GREENHOUSE PLANTS, including 3000 well-grown Ericas, 1500 Camellias and Azaleas, 250 Daphnes, 2500 Genistas, 3000 various Ferns, of sorts, 600 Roses in pots, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—Purchasers may arrange with the Manager at the Nursery to have their lots packed and forwarded to any part of the kingdom at the usual charge. The old-established NURSERY is TO BE LET or SOLD, on very advantageous terms.

Full particulars may be obtained of Messrs. PROTHEROE AND MORRIS as above.

Harrow.

CLEARANCE SALE, by order of Mr. E. T. Chamberlain, who is retiring from the business.

Important to Nurserymen, Gentlemen, Builders, and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Harrow Nursery, Harrow, about 20 minutes' walk from Harrow Station, Metropolitan Railway, on MONDAY and TUESDAY, October 28 and 29, at 12 o'Clock precisely each day, without reserve, the whole of the valuable and well-grown NURSERY STOCK, including 1000 Aucubas, 2 to 3½ feet, 500 Irish; English, and Golden Yews, a great variety of Coniferæ, Evergreen and Deciduous Shrubs, Hardy Climbers, a large number of Ornamental, Forest, and Fruit Trees, 1000 Currants and Gooseberries, 800 Standard and Dwarf Roses; also the loose Utensils-in-Trade, Van, Cart, Wagonette, light Phaeton, in good condition, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; of Mr. E. T. CHAMBERLAIN, 1, College Terrace, College Road, Harrow, N.W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Groombridge, near Tunbridge Wells.

GREAT UNRESERVED SALE of VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. Hollamby to SELL by AUCTION on the premises, Hollamby's Nurseries, Groombridge, Tunbridge, Tunbridge Wells, close to the Groombridge Railway Station, on WEDNESDAY and THURSDAY October 30 and 31, at 12 o'Clock precisely each day, enormous quantities of CONIFERÆ, Ornamental, Deciduous and other SHRUBS, 2,000 Standard Dwarf and Climbing ROSES, 40,000 LARCH FIRS, 2 to 3 feet, 28,000 Portugal, Caucasian and other LAURELS, 10,000 named and other RHODODENDRONS, 5,000 Hardy CLIMBERS established in pots, and other Stock.

May be viewed any day (Sundays excepted), prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, and Estate Agents, 67 and 68, Cheapside, E.C.

Friday, November 1.

A SPLENDID IMPORTATION from Messrs. Walter Kemsley & Co., of VANDA SUAVIS, the true kind, such as have not been imported for over six years, together with a fine lot of VANDA LIMBATA. None of this have arrived yet, but Messrs. Kemsley & Co.'s importations have always opened out well.

MESSRS. PROTHEROE AND MORRIS will SELL the above, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, November 1, at half-past 2 o'Clock.

On view morning of Sale and Catalogues had.

Upper Tooting Park, S.W.

CLEARANCE SALE without reserve, in consequence of the approaching expiration of the Lease.

Well-grown and thriving NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Upper Tooting Park, S.W., a short distance from the Balham Railway Station, on FRIDAY, November 1st, at 12 o'Clock, by order of Mr. J. R. Box, a large quantity of well-grown and thriving NURSERY STOCK, in excellent condition for removal, consisting of thousands of Conifers and Shrubs, in great variety; Forest and Ornamental Trees, including Limes, Planes, and Poplars, Standard Apples, Pears, and other Fruit Trees, Roses, Climbers, several large Camellias, and other Stock.

May be viewed one week prior to the Sale. Catalogues obtained on the Premises; at Mr. J. R. BOX'S, East Surrey Seed Warehouse, Croydon, at the Balham Hill Nursery, S.W.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Cliffe, near Rochester, Kent.

Adjoining the Cliffe Railway Station, South-Eastern Railway.

GREAT SALE OF FRUIT TREES.

Important to Nurserymen, Market Gardeners, and Fruit Growers.

MESSRS. PROTHEROE AND MORRIS are, instructed by Mr. W. Horne to SELL by AUCTION without reserve, on the Premises, Perry Hill' Cliffe, near Rochester and Gravesend, on MONDAY, November 4, at 12 o'Clock punctually, 30,000 FRUIT TREES of the best Market sorts, comprising:—

11,000 Maiden Apples	50,000 Sir Joseph Paxton Strawberry Roots
2,000 English Paradise Apples	1,500 Wild Cherries
1,000 Standard and Half-Standard Apples	500 Standard Bigarreau and other Cherries
1,000 Maiden Plums	500 Standard Farleigh Prolific Damsons
1,000 Standard and Half-Standard Victoria Plums	1,500 Standard and Half-Standard Pears
1,000 Standard Bush Plums	20,0 0 Two-year Connover's Colossal Asparagus
4,000 Gooseberries and Currants	
3,000 Maiden Pears	

May be viewed one week prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Bagshot, Surrey.

Highly important to the Trade and Gentlemen engaged in Planting.

EXTENSIVE SALE of SURPLUS NURSERY STOCK grown to the greatest perfection and exceedingly well-rooted.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. John Waterer & Sons, to SELL by AUCTION, on the Premises, the Celebrated Bagshot Nurseries, Bagshot, Surrey, on TUESDAY, November 5, and three following days, at 12 o'Clock precisely each day, and without reserve, an unusually large quantity of attractive NURSERY STOCK, beautifully grown and well-rooted, comprising 5000 Conifers, 2 to 6 feet, in rich assorment; 6000 Evergreens, 2 to 6 feet; 5000 Rhododendrons, 2 to 4 feet, an exceptionally fine lot, freely set with bloom-buds, and embracing all the choicest varieties in cultivation; fine Limes, 10 to 12 feet; and other Standard Trees; 10,000 Spruce Firs, 2 to 3 feet, many fit for Christmas Trees; and other Stock.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

N.B. Bagshot Station being situated on the Nurseries facilities are presented for the conveyance of purchasers, and Messrs. J. Waterer & Sons, will undertake to despatch any goods bought at the Sale, simply charging for the time and labour occupied.

Tottenham, N.

ANNUAL SALE of remarkably well-grown NURSERY STOCK, HERBACEOUS PLANTS, and BULBS, for the growth of which Mr. Ware has gained a great reputation.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware to SELL by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, adjoining the Tottenham Hale Station, G. E. Railway, on TUESDAY, November 5, at 11 o'Clock precisely, in consequence of the unusually large number of lots, a large quantity of beautifully-grown NURSERY STOCK, comprising :—

5,000 Oval-leaved Privet, 2½ to 5 feet, grown singly
5,000 well-grown dwarf Roses
10,000 Hardy Climbers
3,000 Veronica Traversii
1,000 Ornamental Grasses
10,000 Border and Tree Carnations
5,000 Ornamental Shrubs
30,000 exceptionally strong Seakale
100,000 Forcing Plants and Bulbs
5,000 Choice Lilies
5,000 Standard Ornamental Trees
And other valuable Stock, all in the finest possible condition

The famous new yellow Chrysanthemum "Mrs. Hawkins," &c.

The Stock may be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, or will be forwarded free by post on application to the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call the special attention of Gentlemen and the Trade to this highly important Sale. It is impossible to enumerate within the limits of an ordinary advertisement the many items of stock, as it is seldom such a quantity is offered by auction in one day. The whole will be found to be in excellent condition.

Hammersmith, W.

SALE of well-grown NURSERY STOCK, by order of Mr. F. Herridge.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, 47, Fulham Palace Road, Hammersmith, on WEDNESDAY, November 6, 3000 Green HOLLIES, 6000 AUCUBAS, 6000 Golden and Green EUONYMUS, 2000 PRIVET, and other NURSERY STOCK.

Further particulars will appear.

Brockley, S.E., close to Ladywell Station.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Brockley Nursery, Ivy Lane, Brockley, S.E., on THURSDAY and FRIDAY, November 7 and 8, by order of Messrs. B. Maller & Sons, without reserve, a large quantity of well-grown NURSERY STOCK, 500 bushy Aucubas, 3 to 4 feet ; 1,000 London Planes, for avenue planting, &c.

Further particulars will appear.

Leytonstone, close to the Railway Station.

ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the American Nurseries, Leytonstone, on MONDAY and TUESDAY, November 11 and 12, a large quantity of unusually well-grown NURSERY STOCK.

Lee.

In the High Court of Justice, Chancery Division.

CLEARANCE SALE of NURSERY STOCK, PLANTS in POTS, GLASS ERECTIONS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Manor Lane Nursery, Lee, S.E., on WEDNESDAY and THURSDAY, November 13 and 14, the whole of the GENERAL NURSERY STOCK, 5000 Aucubas, 6000 Golden and Green Euonymus, 11 Greenhouse Plants; 11 GREENHOUSES, Hot-water PIPING, CARTS, Market VAN, &c.

Catalogues may be had, when ready, of the Auctioneers, 67 and 68, Cheapside, E.C.

Eltham.

GREAT UNRESERVED CLEARANCE SALE of over 20 Acres of remarkably well-grown and thriving NURSERY STOCK, by order of Mr. Todman, in consequence of the expiration of the Leases, to be Sold by

MESSRS. PROTHEROE AND MORRIS, on the Premises of the Eltham Nursery, Eltham, Kent, 1 mile from the Eltham Railway Station, on MONDAY, November 18, 1889, and following days, at 12 o'Clock punctually each day, without reserve, the whole of the unusually well-grown NURSERY STOCK, extending over 20 acres, now in excellent condition for removal.

Fuller particulars will appear in due course.

Maresfield, near Uckfield, Sussex.

PRELIMINARY NOTICE.

CLEARANCE SALE of the first portion of the GENERAL NURSERY, including a great variety of CONIFERS, named RHODODENRONS, 3,000 Standard and Dwarf Roses, 80,000 Spanish CHESTNUTS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Louisa Lady Shelley, of Maresfield Park, to SELL by AUCTION, on the premises, the Piltdown Nursery, Maresfield, near Uckfield, on TUESDAY, November 19, and following days, the first portion of the GENERAL NURSERY STOCK.

N. B.—The well-known Nursery is to be Let on very advantageous terms. Full particulars of the Auctioneers.

Castle Nursery, Ottershaw, near Chertsey.

MESSRS. WATERER AND SONS are instructed by Mr. Cooper to SELL by AUCTION, upon the Premises, as above, adjoining the "Castle" Public-house, on MONDAY, October 21, 1889, at 11 for 12 o'Clock precisely, the whole of the well-grown NURSERY STOCK upon this portion of the Nursery, comprising 31,000 1-year and Seedling Hollies ditto, 2 feet to 4 feet; 3000 Caucasian and Portugal Laurels, Aucubas, Cupressus, Golden Yew, a large quantity of Standard and Dwarf Roses, Syringa, Weigela rosa, and other Flowering Shrubs, Forest Trees, and many other items.

May be viewed, and Catalogues obtained of the Auctioneers, at either of their Offices, Chertsey, Weybridge Station, and opposite the Station Entrance, Walton-on-Thames, Surrey. (9637.)

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Monday Next, October 21.

IMPORTANT TO THE TRADE.

30,000 finest Berlin LILY OF THE VALLEY CROWNS (the first consignment of the season); 3500 Early White Roman Hyacinths, 7000 Paper White and Double Roman NARCISSUS, 1200 Italian HYACINTHS, 5000 South African Tuberoses, &c. All for Forcing, and in Trade Lots.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on MONDAY NEXT, October 21.

On view morning of Sale, and Catalogues had.

Thursday Next, October 24.

CHOICE ESTABLISHED ORCHIDS, MANY IN FLOWER AND BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 24, at half-past 12 o'Clock precisely, choice ESTABLISHED ORCHIDS, from various Collections, many in FLOWER and BUD, mostly without reserve.

On view morning of Sale, and Catalogues had.

Thursday Next. (Sale No. 8016.)

10,000 Bulbs of LILIUM AURATUM, just received from Japan.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 24.

On view morning of Sale, and Catalogues had.

Thursday, October 31.—Englefield Green, near Staines.

ORCHIDS and ORCHID-HOUSES.—Without reserve.

MR. J. C. STEVENS has received instructions from Col. Deare, to SELL by AUCTION, on the Premises, Englefield Green, near Staines, on THURSDAY, October 31, at half-past 12 o'Clock precisely, without reserve, the Collection of ORCHIDS and other STOVE PLANTS, the GLASS-HOUSES, Hot-water PIPING, BOILERS, SLATE STAGING, &c.

On view the day prior from 10 till 5, and morning of Sale; and Catalogues had, on the Premises; and at the Auction Rooms and Offices, 38, King Street, Covent Garden, London, W.C.

Thursday, November 14.

SPECIAL SALE OF ORCHIDS IN FLOWER AND BUD.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD, will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 14, at half-past 12 o'Clock precisely, and he will be glad if Gentlemen desirous of ENTERING PLANTS for this SALE will PLEASE SEND LISTS AS SOON AS POSSIBLE.

Nursery Stock.—West Wickham, Kent.

Under Bill of Sale, and by order of Trustee.

AUCTION SALE of about 40,000 well-grown FOREST and FRUIT TREES, CONIFER, AUCUBAS, specimen WELLINGTONIA, border and pot SHRUBS, about 10,000 Standard and Dwarf ROSES, &c.

MR. W. LEVENS will SELL the above, on THURSDAY, October 31, 1889, and two following days, at 11 for 12 o'Clock each day.

Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham; and also at 6, Kirkdale, Sydenham, S.E.

N.B. West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

To Nurserymen, Seedsmen and Florists.

Borough of Loughborough, near Leicester.

FOR DISPOSAL, a sound going concern, as MARKET GARDENER'S and NURSERYMAN'S BUSINESS, comprising five Glasshouses, Orchard, small but well-stocked nursery, 25 acres of Land, good House and Premises, and Sale Shop in market. The Nursery and House is situate within fifteen minutes walk of the market-place.

For further particulars apply to Mr. W. ARMSTRONG, Auctioneer and Valuer, 33, Cattle Market, Loughborough.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, by Private Treaty, a first-class NURSERY, well stocked; 7 Hothouses, about 2 Acres of Land, lock-up Shop in Market-place.

For particulars, apply to GRAHAM AND MADELEY, Valuers, Burton-on-Trent.

NURSERYMEN and FLORISTS: large fashionable town. Handsome and prominent Conservatory, Gardens, &c. Moderate rental. Price for good stock and four large, well-built and heated houses, £800. Excellent opportunity for practical man desirous of obtaining a high-class business.

Apply personally (or stamp), B. POMFRET, Business Agent, High Street, Tunbridge Wells.

TO LET, a compact, well-built, and well-arranged MARKET NURSERY, about 1 hour from London, in a garrison town of 40,000 inhabitants (practically no opposition), comprising 7 Houses and 4 Span Pits built by Boulton & Paul, Norwich, and efficiently heated with Hot Water. Well stocked with Plants for Cut Flowers (for which there is a large and increasing demand at home). Lease 13 years left to run. Price for Stock, £175; Goodwill, &c., gratis.

Full particulars, and satisfactory reason for relinquishing, on application to G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, on Lease, a well-established FLORIST NURSERY, with good Dwelling House (8 rooms and cellars), 7 Glass Houses, Pits, &c., Outbuildings, Stabling, and Orchard, in one of the most thriving manufacturing towns in the Midlands.

Full particulars, apply to J. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO BE LET, on Lease, about 2 Acres of productive NURSERY LAND, with Stabling, Outbuildings, and about 13,500 super. feet of Glass.

About 5 minutes from Waltham Cross Station, Great Eastern Railway.

Apply to B. A. H., Queen Anne Lodge, Waltham Cross, N.

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

Landscape Gardening.

OUR THOMAS H. MAWSON advises on all classes of Work under the above heading; also Rock Building, General Estate Improvements, Planting, &c.

See *Gardeners' Chronicle*, No. 146, p. 412.

Address, MAWSON BROTHERS, Nurserymen, Windermere.

Landscape Gardening.

R. COWLES, Certificated Royal Botanic Gardens, Kew, having great experience in the above work, is able to Advise, Plan, and Estimate for any Lady or Gentleman about to Lay-out a New Estate, or Improve existing Grounds. Extensive knowledge of all the best Fruits, Shrubs, Trees, &c.—Address, R. COWLES, Landscape Gardener, North Finchley, N.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

THE SHEFFIELD and HALLAMSHIRE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.

The TWELFTH ANNUAL CHRYSANTHEMUM SHOW of this SOCIETY will be held in the Cutlers' Hall, Sheffield, on NOVEMBER 15 and 16. Schedule of Prizes on application to—

WILLIAM MARSHALL, Secretary.
17, Croydon Street, Sharrow, Sheffield.

NATIONAL CHRYSANTHEMUM SOCIETY, Royal Aquarium, Westminster.

GRAND EXHIBITION, CHRYSANTHEMUMS, FRUIT, and VEGETABLES,

TUESDAY and WEDNESDAY, November 12 and 13.

Schedules free on application to WILLIAM HOLMES, Frampton Park Nurseries, Hackney, London, E.

"The National Chrysanthemum Catalogue," including Supplement for 1889, now ready, 1s. 1d., post-free.

SPECIAL NOTICE to Horticultural Sundriesmen, Builders, Engineers, &c.—SPACES may now be secured for Exhibits, at the Grand Fête of the National Chrysanthemum Society, to be held on Tuesday and Wednesday, November 12 and 13, at the Royal Aquarium, Westminster. Early application necessary. WILLIAM HOLMES.
Frampton Park Nurseries, Hackney, London, E.

UNITED HORTICULTURAL BENEFIT and PROVIDENT SOCIETY.

The ANNUAL DINNER of this Society will take place on WEDNESDAY, October 23 inst., at the Cannon Street Hotel, E.C., at 5.30 P.M. N. N. SHERWOOD, Esq., will preside.

Tickets 5s. each, to be had of the Secretary,
W. COLLINS, 9, Martindale Road, Balham, S.W.

HIMALAYAN PRIMROSES for Spring Bedding, in quantity, cheap. Any one requiring Primula rosea, the hardy Himalayan Cowslip, brilliant pink, good plants, amateur's stock.—Please address, for price per 100
F. E., Messrs. Street & Co., 30, Cornhill, E.C.

GIANT ASPARAGUS, for forcing. Price for grand clumps per 100 or 1000 on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

TWELVE really good AZALEAS for Sale, splendid plants for Conservatory; well grown and healthy; will bloom freely in spring. To be sold for want of room.

Apply to Mr. J. WHITEHEAD, Guildhall Street, Thetford, Norfolk.

GENISTAS.—For Sale, a few thousands, in 3-inch pots, at 8s. per 100; fine bushy plants, in 40-pots, 34s. per 100.

Cash with order, to be made payable at High Street Leyton.

T. BALDWIN AND SON,
Edith Nursery, Burchall Road, Leyton.

MR. CHARLES TURNER has placed the Wholesale Distribution of the NEW CUCUMBER "LOCKIE'S PERFECTION," in the hands of Messrs. HURST AND SON, who will duly announce when they are prepared to deliver the same. This splendid variety has received the highest possible awards wherever exhibited, including First-class Certificates at the Royal Horticultural Society, Royal Botanic Society, Crystal Palace, Oxford, Maidenhead, Ealing, Acton, and at the Vegetable Conference, Chiswick, September 24, 1889, and is generally acknowledged to be the most perfect Cucumber yet sent out.

Messrs. HURST AND SON, are also appointed Wholesale Agents for Messrs. DOBBIE AND CO.'S Specialties for Exhibitors, particulars of which will be duly forwarded to all their Customers.

152, Houndsditch, London, E.

J. E. DIXON'S "PRESIDENT CARNOT" BRUSSELS SPROUTS.

J. E. D. will be able to supply this extraordinary fine strain at 1s. per packet, for season 1890. The following testimonial (one of many similar) has been received from—

Mr. GEORGE SUMMERS, *Gardener to the* Earl of Scarbrough:—

"DEAR SIR,—I have grown your President Carnot Brussels Sprouts by the side of several other well-known varieties, and have come to the conclusion that it is the hardiest and best variety grown."

London Wholesale Agents:—HURST AND SON, 152, Houndsditch, E.; COOPER, TABER AND CO. (Limited), 90, Southwark Street, Borough, S.E.

JOHN ETHERINGTON DIXON (second son of the late Edmund Philip Dixon, Seed Merchant, Hull), Seedsman, 21 and 23, Lord Street, Gainsborough.

LARGE IRISH BEACONSFIELD YELLOW PRIMROSE SEED, for naturalisation and exportation. New crop, 1889, just gathered, in fine condition, per lb., 50s.; ½ lb., 27s. 6d.; 4 ounces, 15s.; ounce, 5s. Also rare Daffodil seed and Glory of the Snow, in trade packets, 2s. 6d. and 5s. each.—WM. BAYLOR HARTLAND, Old-established Seed Warehouse, 24, Patrick Street, Cork.

*** Trade offer for his "Soleil d'Or" Sunflower, and immediate orders for spring delivery in strong Stuff. The character of this plant is now fully established. See Advertisement in "H. A." next *week*. *A box of specimen blooms for six stamps.*

STRONG, EARLY LAYERED PLANTS, in large 60's, now ready, of CARNATIONS, Pride of Penshurst, Gloire de Nancy, Souvenir de Hans Makart, 3s. per doz.; true old CRIMSON CLOVE, extra strong for forcing, 2s. per dozen, 14s. per 100; ditto in 48's, 4s. per dozen.

Free on rail. Cash with order.

GEO. POULTON, Fountain Nursery, Upper Edmonton, London.

TO LARGE GROWERS of STRAWBERRIES and OTHERS.—Special quotations of Noble, A. F. Barron, King of Earlies, Oxonian; also most of the old kinds, which include Aberdeen Favourite, and others.

R. GILBERT, High Park, Stamford.

"GEMS"—"GEMS"—"GEMS" of Choice Stove Plants.

OXERA PULCHELLA—dense clusters, 8 to 10 inches across, of pure white, funnel-shaped flowers, about 2 inches long and 1 inch across. Flowers in winter very lasting, graceful and beautiful. 5s.

SCHUBERTIA GRANDIFLORA—flowers white with delightful, almond-like fragrance, produced in large trusses, similar to Stephanotis. Excellent for cutting. 2s. 6d. and 3s. 6d.

STEPHANOTIS FLORIBUNDA—the finest variety in cultivation, and freest bloomer, flowering at every joint, and blooms in a lower temperature than any other variety we know. 1s., 1s. 6d., 2s. 6d., 3s. 6d., 5s.; and fine specimens, 21s., 31s. 6d., and 40s. each.

STIGMAPHYLLUM CILIATUM (Golden Vine)—flowers rich orange, similar to the lovely Orchid Oncidium flexuosum. Very distinct. 2s. 6d. each.

TOXICOPHLÆA SPECTABILIS (Winter Sweet)—large dense sprays of white flowers, sweetly perfumed. Beautiful winter-flowering plant. 2s. 6d. and 3s. 6d. each.

GLONERA JASMINIFLORA—one of the most beautiful white-flowering plants for either cutting or decoration. Blooms in the winter or early spring, and worthy of a place in the most select collection. 2s. 6d. and 3s. 6d.

CATALOGUES of these, and all you want for a Garden free, by post from

WM. CLIBRAN AND SON, Oldfield Nursery, Altrincham; 10 and 12, Market Street, Manchester.

A VERY EXTENSIVE STOCK OF

ORNAMENTAL TREES

For AVENUE and STREET PLANTING,

offered by

WILLIAM WOOD & SON, The Nurseries,

Maresfield, Uckfield, Sussex.

Consisting of the following, from 6 to 8 and 10 to 12 feet.

Prices from 15s., 18s., 24s., to 30s. per dozen.

Acacias, Ailantus, Ash in variety, Birch, Spanish and Horse Chestnuts, Elms, Chichester, English, and Cornish; Poplars, Black Italian, Improved Lombardy, White Dutch, Bolleana, and Balsam; Sycamores, Flowering Thorns, Maples of sorts, Acer negundo variegata, &c.

Strong QUICK, for hedges, at 25s., 30s., and 40s. per 1000.

JARMAN'S

BULBS,

ROSES,

FRUIT TREES, &c.

Illustrated Catalogue post-free on application.

JARMAN & CO.,

CHARD, SOMERSETSHIRE.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.

A Large and Select Stock is now offered for Sale.

The Illustrated and Descriptive Catalogue of Fruits post-free.

The Descriptive Catalogue of Roses post-free.

THOMAS RIVERS & SON,

The Nurseries, Sawbridgeworth, Herts.

PLANTING SEASON.

HARDILY-GROWN

FOREST, FRUIT,

& ALL OTHER

TREES & PLANTS,

Evergreens, Roses, &c.

NURSERIES 400 ACRES.

Largest & Finest Stocks in Europe.

INSPECTION EARNESTLY INVITED.

PRICED CATALOGUES GRATIS & POST FREE.

ESTIMATES & ALL PARTICULARS ON APPLICATION.

DICKSONS

(LIMITED),

The Nurseries,

CHESTER.

Address for Letters & Telegrams— Dicksons Chester.

SEEDS.—CROP 1889.

TO THE TRADE.

We shall be pleased to make Special Prices for

PEAS, BEANS, ONIONS, &c.,

on receipt of requirements.

HOWCROFT AND WATKINS, Wholesale Seed Merchants, Hart Street, Covent Garden, London, W.C.

FRUIT TREES.

Many Acres of well-grown Trees offered at reasonable prices, adapted alike for Private Gardens and Market Growers, offered by

WILLIAM WOOD & SON, The Nurseries,

Maresfield, Uckfield, Sussex.

Pyramidal Apples, Pears, Plums, and Cherries.

Standard Pears, Plums, and Cherries.

Dwarf-trained Apples, Pears, Plums, Cherries, Peaches, Nectarines, &c.

Bush Filberts and Cob-nuts, Gooseberries, Currants, &c.

A Descriptive CATALOGUE of Fruits gratis on application.

FOR FRUIT TREES OF ALL KINDS, WRITE TO GEO BUNYARD & CO MAIDSTONE, KENT.

WHO CULTIVATE 800 KINDS TRUE TO NAME.

ILLUSTRATED LIST 6 STAMPS. LIST OF NAMES GRATIS.



FRUIT TREES

For Market and Private Growers.

ORNAMENTAL TREES, SHRUBS, ETC.

Descriptive CATALOGUES Post-free.

J. CHEAL & SONS

Crawley, Sussex.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6s. per bushel (1s. extra per bushel for package), or 6d. per cake; free by parcel post, 1s.

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

ISAAC DAVIES & SON'S

NEW CATALOGUE of GENERAL NURSERY STOCK

Is now ready, and will be forwarded gratis on application.

Their HARDY RHODODENDRONS are unusually fine bushy plants, covered with flower-buds. The SWEET-SCENTED RHODODENDRONS, and other Greenhouse varieties, are also well-budded. The AZALEA MOLLIS, and other choice kinds, are a mass of flower-buds. Early orders are respectfully solicited.

ORMSKIRK, LANCASHIRE.

ORCHIDS.

BRAZILIAN ORCHIDS

offered to the Trade in large or small quantities upon the most advantageous terms.

Particulars and CATALOGUES on application to

A. H. GRIMSDITCH, 5, Clayton Square, Liverpool.

Sole Agent for Senhor Carlos Travassos, Rio de Janeiro.

CANT'S NEW ROSE CATALOGUE.

The Best and Most Reliable Descriptive List ever published.

Post-free on application to

BENJAMIN R. CANT,

COLCHESTER.

GREAT BARGAINS.

Having purchased the Nursery, together with the Stock, up to lately occupied by W. Beard, we are prepared to Sell the following, at less than valuation prices, to clear the ground:—

RHUBARB LINNÆUS, forcing roots, 3s. per dozen, 17s. per 100, £7 10s. per 1000.
" " planting roots, 12s. per 100, £5 10s. per 1000.
THYME, LEMON, Green and Yellow, 1s. per dozen, 6s. per 100.
PINKS, White and Striped, 1s. per dozen, 6s. per 100, 50s. per 1000.
IBERIS CORREÆFOLIA, 1s. per doz., 6s. per 100, 50s. per 1000.
SWEET WILLIAMS, 1s. per dozen, 6s. per 100, 50s. per 1000.
BROMPTON STOCKS, 1s. per dozen, 6s. per 100, 50s. per 1000.
SILENE PENDULA COMPACTA, Red and White, 1s. per dozen, 6s. per 100, 50s. per 1000.
FOXGLOVES, mixed, 1s. per dozen, 6s. per 100.
SNAPDRAGON, 1s. per dozen, 6s. per 100.
WALLFLOWERS, Early Feltham, Harbinger, Dark Blood, Yellow and Double German, 9d. per dozen, 4s. per 100, 30s. per 1000.
ARENARIA MONTANA, alba and rubra (Thrift), 1s. per doz., 6s. per 100.
LAVENDER, 1s. per dozen, 6s. per 100.
STATICE LATIFOLIA, 2s. per dozen, 14s. per 100.
FUNKIA SIEBOLDII, 2s. per dozen, 14s. per 100.
" VARIEGATA, 2s. per dozen, 14s. per 100.
SOLOMON'S SEAL, 2s. per dozen, 14s. per 100.
SAXIFRAGA UMBROSA, " CORDIFOLIA, " GLAUCUS, " TRIFURCATA } 2s. per dozen, 14s. per 100.
SEDUM SPURIUM, " FABARIA, " RUPESTRE, " ALBUM and AUREUM } 1s. 6d. per dozen, 10s. per 100.
TROLLIUS EUROPÆUS, 2s. per dozen, 14s. per 100.
VERONICAS, Austriaca variegata, japonica, salicifolia, Lindleyana, 1s. 6d. per dozen, 10s. per 100.
ŒNOTHERA YOUNGII, 2s. per dozen, 14s. per 100.
ASTER ALPINUS, 2s. per dozen, 14s. per 100.
POLEMONIUM RICHARDSONII, 2s. per dozen, 14s. per 100.
LYCHNIS DIOICA rubra plena, 1s. 6d. per dozen, 10s. per 100.
CENTAUREA MONTANA, Red and Blue, 1s. 6d. per dozen, 10s. per 100. [14s. per 100.
HELIANTHEMUM (Rock Rose), six varieties, 2s. per dozen,
CAMPANULA GLOMERATA DAHURICA, 1s. 6d. per dozen, 10s. per 100.
" PERSICIFOLIA alba plena, 1s. 6d. per doz., 10s. per 100.
CHEIRANTHUS (Alpine Wallflowers), 1s. 6d. per dozen, 10s. per 100.
SOLIDAGO MULTIRADIATA, 1s. 6d. per dozen, 10s. per 100.
POLYANTHUS, Gold-laced, 1s. per dozen, 7s. per 100.
LYSIMACHIA NUMMULARIA, 1s. 6d. per doz., 10s. per 100.
ANEMONE HONORINE JOBERT (Japonica alba), 2s. per doz., 14s. per 100.
CENTRANTHUS RUBER, 1s. 6d. per dozen, 10s. per 100.
PHLOX SETACEA RUBRA, 1s. 6d. per dozen, 10s. per 100.
SOUTHERNWOOD, 1s. per dozen, 6s. per 100.
ANTENNARIA MARGARITACEA, 1s. per doz., 6s. per 100.
ARABIS, Green and Variegated, 1s. per dozen, 6s. per 100.
SWEET MAIZE, 1s. per dozen, 6s. per 100.
EARLY CABBAGE PLANTS, 3s. 6d. per 1000.
VIOLAS, in variety, 6s. per 100; Cuttings, 2s. per 100.
ASPARAGUS PLUMOSA, in 48 pots, 1s. 9d. each, 18s. per doz.
VINES, strong Planting Canes, 5s. and 7s. 6d. each.
ROSES, Maréchal Niel, in 7-inch pots, about 8 feet, 2s. each, 21s. per dozen.
" Gloire de Dijon, ditto, ditto, 2s. each, 21s. per dozen.

The above are all good, bushy, well-rooted plants, &c., and will be put free on rail for cash with order.

FLETCHER, SON AND CO., Nurserymen, &c., Chesterfield.

FRUIT TREES.

IMMENSE STOCK of remarkably well-grown Trees. Inspection invited.

New descriptive CATALOGUE on application.

DICKSONS THE NURSERIES, **CHESTER.**

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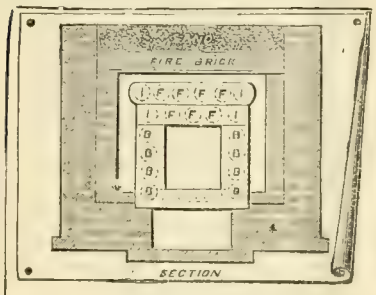
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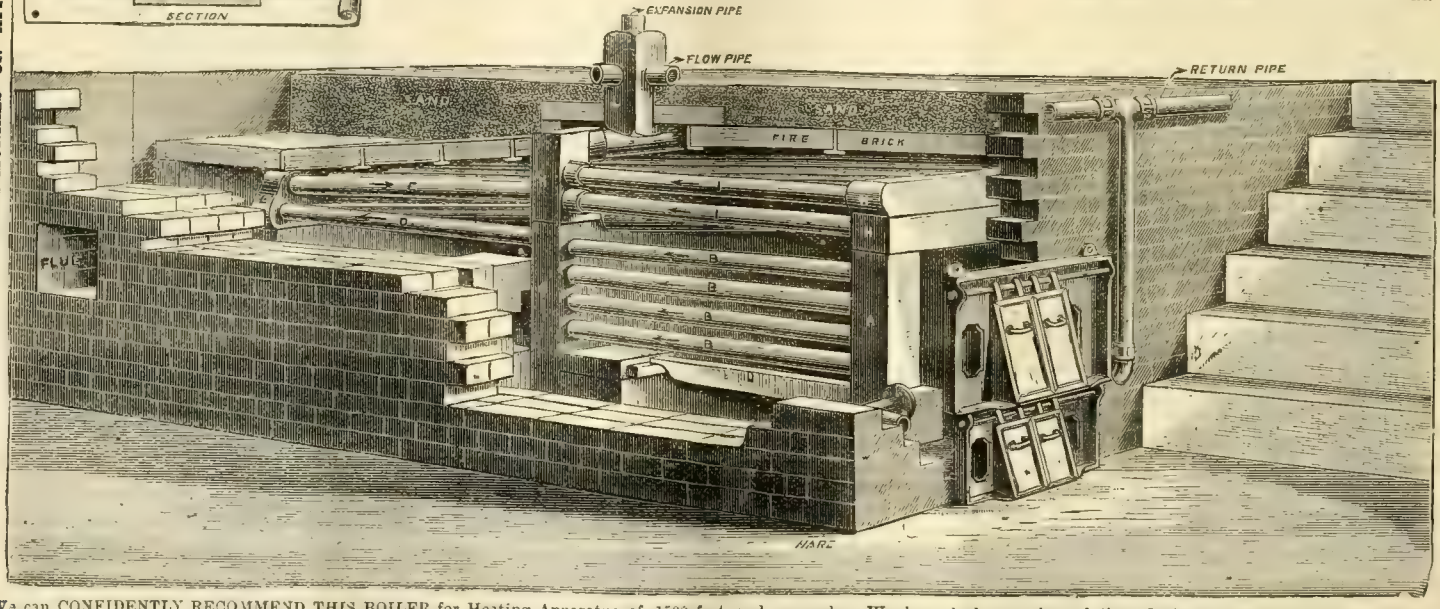


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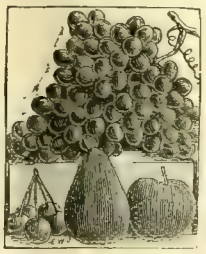
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 19, 1889.

MELVILLE CASTLE.

SCOTT, in his ballad "The Grey Brother," characterises this secluded and picturesque domain as "Melville's Beechy Grove" by Esk's fair streams that run, which the visit of the irresistible "Willie," with his pawky advice to the ladies to "trust in Providence, and ye'll get husbands a'," has made familiar to the popular fancy. Barring the noisome aspect of the Esk, whose once limpid torrent has long been defiled by the paper-mill, the glen between Lasswade and Dalkeith in which Melville Castle is situated, with its tree-dotted haughs, its Beech-clad slopes, and here and there, in Sir Walter's words, "a copsewood deep, impervious to the sun," is as sweet a bit of strath as the Lothians can boast of. It is a spot in whose charming seclusion the eye can revel in the freshness and repose of a piece of natural landscape, in contrast to the well-worn beauties of the immediate environs of Scotia's fairest city. Nor are its charms thrown away upon its noble owner, who, unlike the majority of his fellow peers, spends the greater part of the year on his estate, in preference to the artificial attractions of the southern metropolis. The old fortress, with its memories of Queen Mary and Rizzio (a venerable tree, said to have been planted by her, still bears the name of Queen Mary's Oak), gave place at the end of last century to the present Castle, which, though rather a heavy structure, occupies a very picturesque position in a delightful park, whose shady seclusion excited the admiration of George IV., when he paid a visit to the second Lord Melville in 1822. Though it has not, therefore, the interest of age, or the fine architectural features of its venerable neighbour, Newbattle Abbey, the seat of the famous Henry Dundas, the colleague and friend of Pitt, and from 1775 to 1805, the virtual King of Scotland, it occupies a proud pre-eminence in the history of Scotland, and may

be looked on, in this sense, as one of the sights of the country. Its celebrated founder lies in one of the aisles of the old ruined parish church of Lasswade — where another of his famous countrymen, Drummond of Hawthornden, also reposes—which in a romantic position on the brae above the village overlooks the wooded slopes of Melville.

Besides the interest attaching to Melville as the charming seat of this celebrated man, its immediate surroundings are famous for their association with some of the best known names in English literature. If the glen of the Esk at this point can hardly be called classic, it is at all events of much literary interest. It is said to have stood as the portrait of "Gandercleugh," in Scott's *Tales of my Landlord;* while the quaint, thatch-roofed house known as Lasswade Cottage, secluded by some fine old trees, was Sir Walter's home from 1798 to 1804, and where he translated *Goetz von Berlichingen*, wrote part of *The Minstrelsy of the Scottish Border*, and received the visit of Wordsworth. De Quincey spent the last seventeen years of his life in a cottage by the Esk, about a mile above Lasswade, and not far from the old house of Hawthornden, the ancient home of the Drummonds, and the *beau ideal* of a poet's residence, looking down from its wooded bower on the ravine, amid whose romantic charms,

> "—the rapt poet's step may rove,
> And yield the muse the day."

If we extend our walk a little further, we get into touch with the memory of Burns himself, whose genial muse has immortalised the hostess of the old inn of Roslin, in which Johnson and Boswell once feasted, in the lines—

> "My blessings on you, sonsie wife!
> I ne'er was here before,
> You've gien us walth for horn and knife,
> Nae heart could wish for more,
> Heaven keep you free from care and strife
> Till far ayont fourscore;
> And while I toddle on through life
> I'll ne'er gang bye your door."

Passing over a number of lesser names which occupy a place in the temple of local fame, among which, by the way, is remarked that of a certain doughty Poet Laureate, whose racy effusions are very popular among the members of the Lasswade Curling Club, that of George Buchanan, who is connected by tradition with Sheriffhall—a place about a mile east of Melville—where he is said to have composed his *History of Scotland*.

The Grounds and Gardens.

These are gems of their kind, and speak much for the taste and excellent management of the estate factor. The state of the woods, plantations, walks, lawns, &c., contrasts widely with the marks of mismanagement and neglect which, especially in these days of poverty-stricken nobility, lend such a deserted and desolate appearance to many a once splendid domain. It affords a peculiar pleasure to the mind of a person experienced in such matters to stroll through a place like Melville, for one perceives at every turn that here is somebody who understands his business, and cooperates with nature with sympathetic taste, instead of going to work without the slightest idea of harmony and beauty—a fact which is too little attended to in the conventional methods of forestry and gardening. A forester or gardener should, if possible, be an artist as well as a merely practical man, if he is to carry out the highest functions of his beautiful calling. This is markedly noticeable in the flower garden at Melville, which is a model of intelligent and sympathetic taste. You are at once struck on entering, with a departure from the orthodox arrangement of many beds, containing many varieties of flowers, dotted over a lawn, like the squares or circles in a piece of floor-cloth. In this case there has been the usual effort made to improve on nature; but in the least artificial way possible, so as to let nature speak for herself, as it were, and hide the manipulating hand behind the general effect. By the judicious blending of nature with art, the conspicuously artificial character of many great Continental flower gardens on the one hand, and the plainer, and more subdued aspect of the conventional British method on the other, are alike avoided.

Looking over the whole, the visitor sees a magnificent blaze of exquisitely varied colour—the taller plants, such as Phloxes, Lobelia, Chrysanthemums, Dahlias, Roses, Gladiolas, &c., lending it an airy, unrestrained character, and yet allowing the eye to wander to the masses of lesser plants, and the patches of green lawn that peep out here and there. It is a model of sympathetic and tasteful co-operation with Nature—a gem of rich beauty, pervaded at the same time by a natural simplicity which never palls. Surrounded as it is by a semicircle of splendid Beeches, it reminded us of one of those enchanted spots in the midst of bush or high forest, on which we have sometimes stumbled in tropical countries—a veritable oasis of flowers, in which Nature seemed to reveal her tenderest and richest beauty.

Any one who has paid a visit to the Melville vineries, and inspected the magnificent display of Grapes which they contain, will not have been surprised to know that they this year carried off, in open competition, the chief awards of the Royal Caledonian Horticultural Society's show, held at Edinburgh recently. Taking the vines all over, and after making allowance for the rather old-fashioned style of houses, it would be hard to find a collection like them in the kingdom, whether in regard to the size of the bunches, or the colour and quality of the fruit. Among many kinds, Burchardt's Prince, Black Alicante, Abercairney Seedling, (West's St. Peter's), Alnwick Seedling, Trebbiano, Forster's Seedling, Gros Colmar—the latter especially of extraordinary size—simply defy criticism, and the same remark applies to the inside-grown Pears and Apples, which remind one of an almost tropical growth. This result has only been attained by years of attention and special study, and has this year at least made the Melville Gardens a spectacle worth going a long way to see. The fact of such a superb collection of both fruit and flowers in a county, with all the trying conditions of climate to be reckoned with, is another evidence of the high position of Scotland as a fruit-growing country, within certain limits, and shows what we can do in this respect when we set our minds to it. *J. Mackinnon.*

New or Noteworthy Plants.

SANSEVIERA SUBSPICATA, *Baker, n. sp.**

This new species of Sanseviera was received at Kew from Delagoa Bay, from Mrs. Monteiro in 1886, and has just flowered for the first time. It comes nearest to the Cape S. thyrsiflora, Thunb., from which it differs in its unspotted, unbordered leaves much narrowed at the base, and longer sub-spicate flowers. There is a *S. spicata*, Haworth, which is now known only from a brief description.

Rootstock wide-creeping, ½-inch thick. Leaves up to ten in a tuft, rigid, plain green, not at all spotted on either surface, pale, not red, on the edge, oblong-lanceolate, flat, 8—9 inches long, 1½—2 inches broad at the middle, narrowed gradually to a base ⅛ inch broad. Peduncle terete, stiffly erect, shorter than the leaves. Raceme short, subspicate; pedicels very short, all solitary; bracts minute, scariose, lanceolate. Perianth 2 inches long; tube slender, cylindrical, white, tinged with green at the base, more than twice as long as the linear segments, which are scarcely over ½ inch long. Stamens a little longer than the perianth-segments; anthers small, oblong. Style finally much overtopping the stamens. *J. G. Baker, Herbarium, Kew.*

* *Sanseviera subspicata*, Baker, n. sp.—Rhizomate late repente, foliis oblongo-lanceolatis subpetiolatis pro genere parvis coriaceis immaculatis margine pallido, pedunculo foliis breviori, racemo subspicato floribus omnibus solitariis, perianthio bipollicari albo basi viridulo, segmentis tubo cylindrico 2 — 3 plo brevioribus, genitalibus segmentis longioribus.

HALTON.

(*Concluded from p.* 380).

Resuming our account of this very remarkable establishment we now proceed to give our readers the contents of the more striking of the groups and beds in the flower garden. Mere prettiness of planting would, in the position in which the garden is made, be considered out of place, and we therefore find only characteristic and fairly strong-growing plants employed. One large mound-like bed was planted with a large Palm in the middle, and around this plant there were panels filled with show varieties of Cape Pelargoniums, and the other occupants were single-flowered Marguerites, yellow Calceolarias, and Cannas, and small Palms dotted about. A large bed facing an ornamental structure known as the Indian Pavilion, serving as a summer-house, had Canna Adrien Robin, a fine red-leafed variety; Centaurea candidissima, the cheerful looking Chrysanthemum carinatum sulphureum, Vesuvius Pelargonium, groups of the Victoria strain of German Aster, and small growing edging plants. Veronica incana, as a broad band, was very effective in some situations; it is of dwarf and very dense habit. A beautiful strain of French tuberous Begonias was observed which were striking for the vivid and rich colouring of their flowers, their erect bearing, and floriferousness; Salvia patens in quantity, Fuchsia Try-me-o! Cannas, and Nicotiana affinis found places in this bed. The description of the floral vase figured in this number, fig. 60, was given at p. 380, October 5.

A tiny rivulet, bordered by rocks, meanders through one corner of the lawn—a feature pretty enough to merit extension, though, perhaps, owing to its proximity to the central fountain, any extension in this situation would be objectionable, as affording too violent a contrast between Nature and Art.

The fountain itself, shown in our supplementary illustration, October 5, is a noble group, of Italian design, occupying the centre of the lawn. Lit by the electric light, this must form a very striking feature. Around the basin at the point where the view of it was taken, and separated from it by a wide strip of turf, was a border filled with Palms, Tobacco plants, tall Dracænas, Marguerites, &c., and faced with a bold border of zonal Pelargoniums in various shades of colour.

Two lines of flower beds flank the walk, which extends from the terrace to the fountain, which were filled effectively, but simply, with, in some instances, Pelargonium Henri Jacoby, and an edging 2 feet in width of Golden Feather; in others, with a pink Pelargonium Mrs. Leavers, with an edging of equal width of blue Lobelias. There are also beds of Coleus Verschaffelti improved, and Chieftain Pelargonium; and as these beds are 24 feet wide, the effect in the height of the season is of a gorgeous character. For beds of a much smaller

size on the terrace, and for giving cheerful colour to the grey of the terrace wall, the brilliant Pelargonium John Gibbons is much employed.

Of the kitchen garden and the plant-houses we have little to narrate, save that they are commensurate in style and keeping with the rest of the establishment, and reflect much credit on Mr. Sanders, the intelligent head gardener. When we are told that the place nine years ago was a corn-field, and that all these beds, these plantations, these slopes, these green drives have been the work of the landscape gardener within that period, we are the more impressed with the immensity of the labour and the skill of the artist. At the risk of impertinence, we can hardly avoid mention of the thoughtful liberality of Mr. A. de Rothschild to the workpeople employed on the estate. Not only are many employed at seasons when elsewhere and otherwise there would be little or nothing for them to do, but their material welfare is considered in a manner as to make it a privilege indeed to serve such a master.

Of the interior of the mansion, it is not for us, in this Journal, to speak in detail, suffice it to say, it is palatial in character, the rooms particularly well arranged, spacious, well proportioned, sumptuously but tastefully, and elegantly decorated, and filled with treasures indicative of the taste and resources of the possessor. Architecturally, the central hall—a particularly well proportioned and elegant apartment—may be said to form the special feature of the mansion, and from it access is obtained to all the principal rooms and to the grand staircase. Our concern with it lies in the fact, that through it access is obtained to the winter-garden. Generally speaking, whatever they may be architecturally, winter-gardens of this description are failures so far as their main purpose is concerned. This cannot be said of the present structure (see Supplement), the architectural features of which give an air of dignity combined with grace, while they do not unduly exclude the light, so that the Palms, Tree Ferns, and other plants have a chance, generally denied them in similar structures, of thriving and adding their subtle elegance to the impressiveness of pillar and archway.

A more successful blending of the stately in architecture with elegance and diversity in foliage we have never seen. A tropical jungle, leading out of an elegant drawing-room, and enclosed within a monumental temple of severe design, is an absurdity we too often meet with, but at Halton the blending of the work of Art and of Nature has been so effected, that the one is the complement and fulfilment of the other.

The Palms and Ferns have grown considerably since the photograph, whence our supplementary illustration is taken, was executed.

It only remains for us to say that the construction of the whole of the garden, and the ground-work generally, was entrusted to Messrs. J. Veitch & Sons, Chelsea, and the result forms an excellent illustration of the abundance of their resources, the fertility of their invention, of their skill in overcoming difficulties, and of their faculty of availing themselves of favourable opportunities.

The photographs whence our illustrations have been taken, are from the studio of Mr. J. W. Thomson, 70A, Grosvenor Street, London.

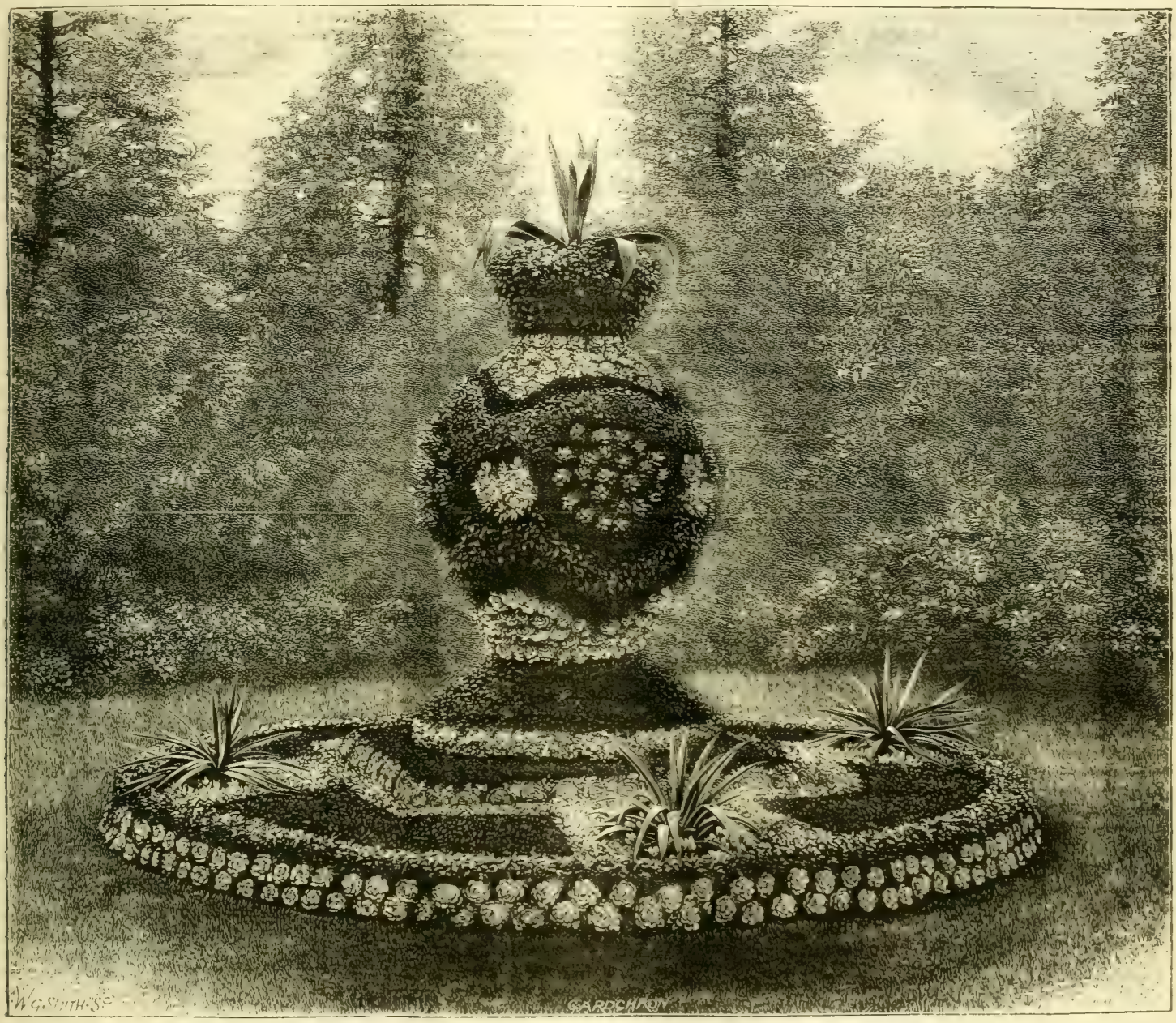


Fig. 61.—Floral vase, Halton. (see p. 380, October 5.)

THE FRUIT QUESTION CONSIDERED.

One of the great benefits conferred on the community by our rich public companies is that they can take up and promote objects of national importance which are often beyond the power of private enterprise. An instance of this kind is before us in the recent gathering of fruit growers and others at the Mansion House, called by the Lord Mayor, to meet the Fruiterers' Company. That a largely extended cultivation of fruit trees in England is open to the enterprising, as a source of profit in dealing with the land, will not, I think, be questioned by any one who has a thoroughly practical knowledge of the subject. The question seems to be rather one of "when, where, and how?"

An increasing demand for fruit and the realisation of remunerative prices, when it is judiciously handled, would seem to mark out the present as a favourable moment to enter upon the work. The "where" is not so easily settled. There are some districts in England where soil and situation are so favourable for fruit culture that they might be wholly given up to it. And there are others where little hope of profit could be entertained. These are the extremes. Between them are thousands of farms on which a few acres of land might be found suitable for the purpose, and which would yield a better profit under fruit culture than under any other crop.

The fact that there are at present many farms in England with orchards which yield no profit, does not militate against this statement. Investigation would disclose the facts that such have not been properly planted, the sorts have not been judiciously chosen, or the management has been bad. This brings us to the "how" of the subject. Starting with a favourable situation and a good soil, the rest depends on the sorts and varieties planted, cultivation, and marketing.

Now, it is too much to expect of the farm labourer that he should know how to select, plant, prune, and cultivate fruit trees, and further gather, store, and market the fruit in the right manner and at the right time. Yet this has been expected of him by many of our farmers of the present, and for the want of knowing what to do, he has done nothing! and neglect has been followed by the usual consequences. How shall we get over this difficulty? Of course, the farm labourer can be taught; this knowledge is as easily acquired as that of managing horses, cows, and sheep; but then he has not been taught, and until he has been taught, the management of the orchard should be committed to other hands.

It would be well if the farmer could himself acquire the necessary knowledge, and manage the orchard and fruit; then an intelligent farm labourer could carry out the details if definite instructions were intelligibly given. Otherwise he should employ skilled labour. Judging by results, the farmers of the past were better fruit growers than those of the present day. The position of the cottager and small owner or occupier differs little as cultivators from that of the farmer. The former would necessarily have to depend more on their own knowledge, as they probably could not afford to employ skilled labour. If before commencing operations they acquired a good knowledge of the subject by observation, inquiry, and reading, they would be likely to avoid a wasteful expenditure of both material and labour.

The proposal of the Fruiterers' Company to offer annual prizes for the best-managed fruit-farms, plantations, and orchards, is no doubt a good one, as calculated to call attention to, and develop a rising industry. The recipients of these prizes would be in the first instance, proprietors, or leaseholders not likely to be largely influenced by these awards, which their knowledge, skill, and industry, had merited and obtained; their management, although not incapable of improvement, would have already reached a goal which was at least satisfactory to them, because profitable. The national importance and value of these awards then would consist in the definite setting up of a standard, or standards, for the uninitiated to study and reduce to practice. I would venture to suggest that these prizes should have the widest possible scope, framed so as to embrace the cottagers, the small growers' holdings, the farmers' orchards, and the fruit-farms pure and simple. The whole country should be mapped out into districts, and separate prizes should be given for each district, so that the growers in the least favourable climates might in this respect compete with their fellows on equal terms. And further, these prizes should vary in their nature from year to year, so as to comprehend in time the whole *rationale* of fruit culture.

As to the old orchards existing in the country—where the trees have been merely "stuck in," instead of being properly planted—where unsuitable sorts have been used, or where cultivation has been long neglected, there is, I fear, little hope for them in the future. Where unprofitable (and the majority I have met with are of this nature), the best thing to do is to clear them away, and begin again, and working on more intelligent and sounder principles.

There is no doubt that the slow returns on invested capital often hinders the planting of fruit trees. It is not everyone who can afford or has the patience to wait four or five years, for the profits of an investment, even if in the future there is the prospect of handsome returns. In addition, capital is required, and must be found by owner or occupier, more or less, according to the extent of the undertaking. To plant on one's own land is best; next on long leasehold; if on a short lease, the trees should be taken at a valuation if the renewal of a short lease is unattainable. *William Paul, Waltham Cross, Herts.*

ORCHID NOTES AND GLEANINGS.

PHALÆNOPSIS VIOLACEA, AND OTHER PHALÆNOPSES.

P. violacea is a very pretty species, having pale green foliage and chaste flowers; the petals and sepals are white, their points being shaded with green, and their lower portions suffused with violet-rose. Messrs. James Veitch & Sons sent us a small plant in April, 1887, and it has blossomed this summer, having formed a small spike, which produced four flowers. Its manner of flowering is rather remarkable, the first blossom expanded on July 5, and the last opened on October 6, each flower remaining in perfection about one month, and faded a few days after its successor unfolded; so that, for by far the greater part of the flowering period, there was but one flower. I have for some time past watched for a note on this species, being desirous to know particulars about it. I should be glad to know how strong plants behave in flowering, if they have many blossoms on a spike, and if the same branches out, and has many flowers open together. I observe in a description of this plant that its leaves attain to the size of those of P. Schilleriana. Our plant, as I have said, was small when we got it. It has since made two leaves each year, the largest of which are only 4½ inches by 2½ inches. Plants of P. Schilleriana and P. Stuartiana, received at the same time as P. violacea, were also small, but they have leaves 1 foot in length, while those of P. amabilis are over 9 inches long, and of corresponding width. All the above species are healthy, and are grown in baskets filled with sphagnum moss and charcoal suspended near the glass. We are careful to shade from sunshine, and to water them only with rain-water, and although P. grandiflora receives similar treatment, we do not succeed in growing it satisfactorily. Does it require different management to the other species? *Thomas Coomber.*

Stenoglottis fimbriata, *Lindl.*

A variety of this plant is now in flower at Kew, with an unusually fine spike of flowers, and making a very charming appearance. It differs from the plant figured in the *Botanical Magazine*, t. 5872, in having longer leaves, without spots upon them; the lip is also five-lobed, instead of three-lobed, differences which would by some be considered of specific value, but from examination of numerous specimens and drawings, it becomes evident that the plant is as variable as our own Orchis maculata, O. mascula, &c., the leaves being sometimes spotted, sometimes unspotted, and the lip varying much in its lobing, so that if a few hundreds of plants in any locality were to be examined, doubtless as great an amount of variation would be found as in a field full of our British Orchis mascula.

The spike on one of the Kew plants is remarkably robust and tall, bearing over 100 flowers, the plant being a very vigorous one, but in this case I think the magnificence of the spike is due to fastigiate growth, of which there is distinct evidence at the apex of the spike; other plants in the same pot have only the normal and comparatively few-flowered spikes of this species. A figure of Stenoglottis fimbriata will be found in Harvey's *Thesaurus Capensis*, vol. i., t. 56, in which the flowers are all represented with the lip uppermost; in the plate of the *Botanical Magazine* the lip is represented on the lower side of the flower, as is also the case in the living plant, and it would appear, at first sight, that Harvey's drawing was wrong, but this is not really the case, as his plate represents a different phase of the plant's life, The explanation is this: the ovary, at the time the flowers open, is twisted half way round at the base only; if the flowers do not get fertilised the ovary remains in this state, and the flower closes up with the lip on the lower side of the flower; but if the flower should be fertilised, then, when the flower closes, the ovary untwists at the base, so as to bring the lip on the upper side of the flower, and Harvey's drawing was made from specimens on which the flowers had been fertilised, and the lips all directed upwards. *N. E. Brown, Kew.*

TONGUES IN TREES.

(Continued from p. 322.)

Our next word makes some demand on etymological credulity. It is, however, indisputable that the Sanscrit *kshi*, to dwell, passes in one direction into *kshama*, *home*; in another into *kshiti*, *heath*; meaning to-day the Ling, or Heather, which grows wild on open land, used originally only for the land itself. "My foot," says Rob Roy—says also Mr. Micawber, if we remember aright—"is on my native heath;" and the same idea was enshrined in the same word to the first Teuton settler. In the forest he fought his enemies, hunted his prey, hewed timber for his fences, peeled bark for his roof; his *home* was on the open land or *heath*, from which again, when ages had passed away and Christianity possessed the towns, worshipping his father's gods upon his father's heath, he gained his name of *heathen*. A sixth word lifts him higher than all the rest: for the word *beech*, in Gothic, Old High German, Modern German, Norse, Danish, English, Dutch, is identical with *book*, the Runic tablets of our ancestors having been carved upon this wood. In *Sloe*, the Wild Plum, we have the root of *slay*, its tough wood having been used for bludgeons. *Dog-wood*, the common Cornel, is *dagger-wood*, from *dag*, to strike. From *Ash*, whose wood was used for spearshafts, came the Old English *æsc*, a spear. *Sedge* is allied to *sæcg*, a small, sharp, iron sword. Observe, too, that while all these plants, bearing purely Teutonic names, extend far into Northern Asia, trees which stop at a more southern limit—the Elm, Chestnut, Holly, Sycamore, Plum, Pear, Peach, Cherry—all bear Latin names, proving that these Teuton squatters came from a colder country than that in which they appear to have settled near the Roman provincials on the lower Rhine. The knowledge that Wheat, Barley, Oats, Rye, Corn, are all Teutonic words, completes the historical picture sketched by the first list of names. They depict for us a race of men coming from a northern to a southern region, dwelling in timber

houses roofed and thatched, launching boats upon their rivers, possessing slaves and cattle, recognising the rights of property and the sacredness of home, fighting with cudgels, daggers, swords, and spears, familiar with cereal agriculture, and in some way not ignorant of letters. All these facts, just hinted here, but challenging minute investigation, we owe to a dozen common names of English plants, uttered in ready response by tongues of English trees.

"He spake of trees also."

Let us pass to a different line of questioning; and, using the word tree in King Solomon's wide acceptation of the term, let us, as the name of Solomon suggests, inquire if the trees mentioned in the Bible have aught of interest to tell us. On its opening page we meet with the tree of knowledge, which the Rabbis believed to be an Apple; and the tree of life, which they believed to be an Ash; suggesting the curious tree and serpent worship common to so many nations, which has been fully worked out in Ferguson's learned book. The next chapter introduces us to Fig leaves, rudely translated "Breeches" in a well-known version of the Bible, and illustrated by a strange survival in one of the low-caste populations of India, which to this day, during an annual religious festival, foregoes all clothing except a Fig-leaf apron. The patriarchal narrative makes us acquainted with the mis-named Oak, really a Pistacia terebinthus, scarce then and now, but rising in solitary grandeur to an enormous size. It was under the Terebinth of Mamre that Abraham pitched his tent; under the Terebinth of Enchantments at Shechem that Jacob buried the idols of his wives; under the Allon-bachuth, or Terebinth of Tears, that Deborah, Rebekah's nurse, was entombed. The Oak, Quercus pseudo-coccifera, which formed the Baal groves, which gave a name to the forest-clad hill of Carmel, and in whose spreading boughs the flying Absalom was entangled, was a genuine acorn-bearing Oak. The Palm, once common in the Jordan valley, Jericho, and the ravine of Kidron, is now comparatively scarce, though in mediæval times pilgrims owned their distinctive name of Palmers by bearing home its branches from the Holy Land. The Papyrus, the "Bulrush" of Moses' watery cradle, no longer grows in the Nile. The Sycamore, with its memories of the prophet Amos and the publican Zacchæus—the tree which, says Christian legend, opened its trunk to hide and save the Virgin and the Infant Christ, pursued by Herod's soldiers in their flight to Egypt, is still found on the plains; the Almond, its beautiful crown of blossoms whitening as it fades, like grey hairs upon an old man's head, everywhere recalls the image in the exquisite closing chapter of Ecclesiastes; of the Cedars which once clothed the whole of Lebanon, 400 were growing at the time of Dr. Hooker's visit, and other groves have since been discovered. The Burning Bush — Seneh, *Schaniae*, Sanny, as the Arabs calls it — abounds in the peninsula of Sinai; the gigantic Reed, Arundo donax, rustles shaken by the wind along the Jordan watercourses; the Lentil, from which Jacob sod his pottage, covers the ground in early summer; swine are fed as was the hungry prodigal on the long brown Carob husks; the Oleanders, supposed by Stanley and Keble to be the Lilies of the field on which Christ moralised, spread garden-like their masses of bright blossoms and dark green leaves. We also find, growing where they grew 3000 years ago, the Gourd of Jonah—no Gourd, but a Castor-oil plant; the Juniper of Elijah—no Juniper, but a *Spartium;* the mistranslated "cab of *dove's dung*," the edible bulb of a yellow Star of Bethlehem; the wild Vine, or Colocynth, which brought death into the pot of the hungry prophets; the Mustard seed, or *Salvadora;* the Hyssop springing with its bright leaves out of the driest wall, the long stem splitting at the end into brush-like fibres, as when the Israelites dipped it in the paschal blood.

Buried Myths.

Many a strange tradition, sacred, semi-sacred, classical, provincial, reveals itself to those who excavate the meanings of familiar names of plants. The common Avens of our ditches is known as the Herb Bennett, or blessed Herb, its triple leaf representing the Trinity, its five petals the five wounds of Christ. Samphire is corrupted from St. Pierre, through its habit of growing upon rocks; the medicinal Sanicle from St. Nicholas, the restorer to life of the three slain and pickled children. Sainfoin is translated by our old writers Holy hay, as having been placed on the head of Christ by those who laid him in the tomb; but Sain is really *sanum*, wholesome, representing its older name *Medica*, incorrectly understood as "curative." From the Christ-thorn, Palinrus aculeatus, the Crown of Thorns was made; on the Judas-tree, with its pink blossoms, the traitor Apostle hanged himself; the Milk Thistle, *Carduus Marianus*, owes its white stains to milk from the Virgin's breast. Jacob's Ladder, Aaron's Rod, St. John's-wort, the Marguerite, the Catharine Pear, commemorate venerable or saintly names. Solomon's Seal bears stamped on its underground stem the mysterious intersected triangles with which the great king overawed the Jinns; the famous Glastonbury Thorn was the staff of Joseph of Arimathæa, planted in the ground on Christmas Day, and forthwith bursting into the bloom which it has ever since renewed at Christmas. The Pæony, or healing plant, takes us into classical mythology, recalling the Homeric *Pæon*, the first physician of the gods, who tended the bellowing Ares when wounded by the spear of Diomed. The Circæa, or Enchanter's Nightshade, was the plant with which Circe bewitched the sailors of Odysseus. With the Centaury the Centaur, Chiron salved the sore inflicted by the poisoned arrow of Hercules. The Germans, connecting the name with the Latin *centum aureos*, know the plant as *Tausend Guldenkraut*. The Ambrose or Wormwood, is the immortalising food which Venus gave to Æneas; the Sanscrit *amrita* which Kehama and Kailyal quaff in Southey's poem. The Anemone sprang from the tears shed over the body of Adonis, as the Rose sprang from his blood—

Αἷμα ῥοδὸν τίκτει, τὰ δὲ δάκρυα τὴν ἀνεμώνην.

W. T.

(To be continued.)

MUSHROOMS IN RAILWAY TUNNELS.

There is another, though less necessary, article of food than meat, which the North British Railway deals with in wholesale quantities, and that is Mushrooms. It comes about in this wise:—The old Edinburgh, Perth, and Dundee line, coming up from the Granton and Burntisland ferry, got into Waverley Station by a tunnel under St. Andrews Square and Princes Street. It was about three-quarters of a mile long, and the gradient was so steep as to necessitate the employment of a stationary engine. Of late years a *détour* out to the east has avoided the gradient, and the tunnel has been abandoned. For a long while it was simply useless, or rather worse than useless to the company, for it was alleged that disabled trucks from the Scotland Street end, where the old station is now used as a coal dépôt, used to be shunted into the tunnel out of the way, and so lost to sight and forgotten. Two years back an ingenious person conceived the idea of leasing the tunnel and growing mushrooms. The company was not too exacting about terms. Any rent was better than no rent, and moreover they got the carriage of all the materials for forming hot-beds inwards, and all the Mushrooms that were grown, out again. And what with soil and manure, the grower declares that he uses up a train-load of stuff in a twelvemonth. Even the very spawn comes in, a truck-load at a time.

When I was there, one bitter cold day last March, I found a huge fire of anthracite burning just inside the mouth of the tunnel, which could not be closed except by a wooden screen, movable so as to permit the passage of railway trucks. In this way the chill was taken off the air as it entered. The upper end of the tunnel next the station is built up with brickwork. Throughout the entire length there runs a double line of rails. What used to be the up-line is kept clear for use, as the beds have to be removed bodily, and renewed about every six months. But between this line and the wall there is a small border carried along throughout, and the place of the down line is occupied by a series of beds running across at right angles. For a hundred yards, one walks along a set of beds in full bearing. Then again a second set has just been made, but these are still too hot and rank for the spawn to be put into them. A little further one comes upon a gang of men at work by the light of lanterns in making up a third set. I learnt that, at the time of my visit, the French growers had not yet got their products into the market, and that the Edinburgh Mushroom Company, Limited, could obtain from the salesmen from 1*s.* to 1*s.* 9*d.* a pound, and even at that price had more orders than they were able to execute. *W. M. Acworth, in "Murray's Magazine," October.*

KEW NOTES.

Pleiones at Kew.—Kew in the past has held a good reputation for the culture of these very useful and beautiful Orchids. This year the plants seem to be flowering even better than formerly, and staged as they are amongst some nice Adiantums, they give a very good effect indeed. It is an idea new to Kew to stage the Pleiones in this way, and I think it is by no means a bad one—the dark green foliage of the Ferns and the bright rosy-pink colour of the Pleiones make such a very fine contrast. Pleione lagenaria, or, as it is now called, Cœlogyne lagenaria, is the earliest flowering of the family; the other species, such as Wallichii, maculata, Hookeriana, and humilis last, though by no means least, flower later on. To cultivate these plants successfully, only ordinary skill is required; the pseudobulbs, after they have finished flowering, should be taken from the pans and looked through carefully, removing anything that might be injurious to their welfare; then sorted, so as to get them as near to one size as possible, as it is much better for the weaker bulbs, this process rendering it convenient to pay more attention in the quarter where it is required. After the pseudobulbs have been put into their sizes, they should be put into pans ranging from 6 to 10 inches wide, in a good compost of fibry loam, cow-manure, and a small proportion of peat; the pans should be drained about one-third in depth, which gives good drainage, a thing highly necessary in the successful cultivation of these plants. After potting, water should be withheld till the plants are making their new growths, and when the latter are about an inch or two long, watering should then commence. The best mode of watering is to have a bucket of water — soft water is best — and slowly immerse the pan till the water makes its way to the top of the compost, then take the pan out, and allow it to drain; this process is not required more than once a week or so till the plants get larger, when the amount of water given should be regulated accordingly. Care must be taken not to wet the young growths. The best position for these plants when starting them, is one as near to the glass as possible. At Kew we have a shelf erected in the cool-house quite close to the glass, in which position the plants thrive very well, as they get a good amount of light; by-and-bye they will become too large for this place, when they will be removed into a cool pit, and placed in as light a position as can be given them. In this place they will make rapid strides towards maturity, and as the leaves begin to turn yellow, watering will be reduced gradually till such time as the plants require no more; they will then produce their flowers, which, if the plants have been grown properly, will be very good both in quantity and quality. When in flower the plants should be kept in as dry an atmosphere as is permissible in an Orchid-house, as they are very sensitive to dampness and fog, and the latter is very injurious to them. *P. W.*

Autumn Aconites.

We have now two distinct autumnal Monkshoods, both of which are natives of China, and consequently perfectly hardy with us. In general habit, disposition, and shape of flowers, &c., they favour A. Napellus more than any of the other species, but are abundantly distinct botanically, as well as horticulturally. They have gone through several editions of synonyms, both having been confused under the names of chinense and sinense. They now stand as follows:—A. Fischeri, Reich. (sinense, Sieb. and Zucc.; autumnale, Lindl. *Journal of Hort. Soc.*, ii., p. 77, and *Paxt. Flower Gard.* i., p. 187; chinense, Herb., Kew; and californicum, Hort.). This is the rarer of the two species, as well as the more ornamental. It was received from Fortune among his dried plants, April 6, 1846, as a species of Aconite, flowering in winter from Chusan. It is found also on the Chefoo hills above the Bamboo Temple. A. Fischeri more nearly resembles A. Napellus than the other species, growing about 3 feet in height, and producing its lilac flowers in an apparently simple spike, which in time becomes a panicle. The leaves are regularly five-parted, the segments incised, and always marked with a deep middle vein, the lobes longer than in A. Fortunei, and falcate. The flowers are also larger than in that species, lilac-purple, the helmet two to three times longer, compressed, and with a longish curved peak.

A. Fortunei, Hemsley (A. chinense, *Paxt. Mag. Bot.*, v., t. 3; *Bot. Mag.*, t. 3852; A. sinense, Lindl., *Paxt. Fl. Gard.*, i., p. 187, t. 116; A. japonicum, Deue, *Rev. Hort.*, 1851, p. 175.) This is apparently the older of the two species. It was introduced in 1833 by Dr. Von Siebold, and first flowered by Messrs. Young, Epsom Nursery, in September, 1837. It grows from 1½ to 2 feet in height, slightly downy, the leaves irregularly toothed and cut towards the apex, very thick or succulent, and glabrous, the upper surface deep shining green. The flowers smaller than those of A. Fischeri, of a bright deep blue colour, the helmet semicircular, slightly compressed, and having a short acute straight peak. Native of China. Both are highly ornamental species, and of the greatest possible value to gardeners, flowering, as they do, at this season of the year. They are both quite hardy, and may be increased rapidly by division. *D. D.*

Mutisia Decurrens.

We notice a fine piece of this charming plant against the No. 1 museum at Kew, with four to five splendid deep orange flowers open at the present time. It seems very unfortunate that this plant has been dubbed difficult to grow, but whatever the difficulty may be, it seems to have been overcome at Kew, the result being a fine healthy specimen, with over a dozen strong shoots. The slugs are said to consider the Mutisia a delicacy, and here they have been cleverly frustrated by a liberal use of broken coke round the base of the plant; and its efficacy is abundantly proved by the state of the plant. Near by is the beautiful Caryopteris mastacanthus, figured in *Gardeners' Chronicle*, vol. xxi., p. 149, 1884, with its bunches of lovely bright blue flowers. It makes a charming dwarf shrub for a wall, and also does well in sheltered spots in the open. *D. D.*

Nursery Notes.

Messrs. J. Cheal and Sons.

The Lowfield Nurseries are well known by the excellent collections of fruit and of Dahlias which are seen at the various shows all over the country, and when a little time back we called at the establishment, we were somewhat disappointed that the Dahlias would not bear observation; the frost had come in the night, and had destroyed the flowers of all the new seedling single varieties, some of which have received a fair share of distinction this season at the various shows. The striped blooms seem to arise freely at these nurseries.

But on looking to the fruit quarters, there was much material to secure attention, and a miscellaneous assortment of ornamental trees and shrubs of the most decorative type is also to be seen, as the Messrs. Cheal are engaged in landscape gardening to a considerable extent, and Mr. Joseph Cheal, whose department this is, can show some photographic views of the firm's work, taken by himself. Rhododendrons, various Conifers, Oaks, Prunus Pissardi, with its deeply coloured leaves, and also useful as a flowering shrub; Laurels, &c., are all largely grown, and the Dartmouth Crab in fruit was a striking object.

In the collection of Apples and Pears, there are to be seen fine healthy trees of all the most popular and standard sorts, and this year afforded a capital opportunity for noting good bearing sorts, and a list of Apples is now given:—Annie Elizabeth, Bismarck, Colonel Vaughan, Duchess of Oldenburg, Cox's Orange, Domino, Ecklinville, Frogmore Prolific, Golden Spire, Hormead's Pearmain, Keswick Codlin, Manx Codlin, King of the Pippins, Lord Derby, Lord Grosvenor, Pott's Seedling, Prince Albert (Lane's), Professor, Stirling Castle, The Queen, Warner's King, Yorkshire Beauty, Northern Dumpling, Dutch Mignonne.

The foregoing varieties are, it will be noticed, all accepted as first-class sorts, and may be recommended for general cultivation; moreover, some of the finest of both dessert and culinary Apples are included. A few of them are of comparatively recent introduction, but have advanced to a high place in the estimation of the public, such are Bismarck, Professor, The Queen, Colonel Vaughan, and Annie Elizabeth.

There are some good trees of Ribston on the Paradise stock, which suits it well, and Curltail is also conspicuous. The tree is of a very rambling habit, but it is a free fruiter. Akera, the new Continental variety, was seen in the fruit-room with a collection of specimen fruits of other varieties. This is a peculiarly coloured variety, with a soft, tender flesh, but has not much to boast of as regards flavour. Speaking of heavy crops, the Forge must rank as high as any as seen here. There are about a dozen large standard trees, bearing as heavy a crop as possible of bright red and yellow fruits; this is a variety in great favour in Sussex, and is a staple late variety.

In the nursery quarters there are thousands of vigorous young trees ready for dispersal. Budded Apples, Plums, &c., are planted at wide intervals, so as to allow the use of a horse-plough between the rows, and a fine lot of plants on the Paradise stock are looking very strong. Altogether, there are about 250,000 trees of leading varieties, and over 40,000 more budded for succession. The various forms of trained trees are largely kept in stock, Cordons and Fans especially. Messrs. Cheal believe strongly in the Cordon-trained trees, and have lately erected a substantial span-roofed house with 15 feet sides, which is devoted to the growth of Cordon Pears. The Kieffer Pear was bearing some large examples of its strange-shaped fruits, and Baltet Pear was also good. Beurré Alexander Lucas was also noticed. It is in Apples and Pears that the chief business of the firm rests, but general stock is also kept, and there are good lots of Plums, Cherries, &c., in variety.

Plants and Their Culture.

The Greenhouse: Winter Bloomers.—The plants in this house will have been put into the places they will occupy during the winter. Azaleas will stand a few degrees of frost, but they should not be subjected to a succession of frosts. When housing the plants, place them as far apart as possible, so as to allow of a free circulation of air amongst them. In airy houses, the pots and stages should be damped on bright sunny days, and slightly dewing over the plants themselves. This should be done in the morning. The early blooming plants should be kept separated from the late kinds, which may be at the coldest part of the house; and if any of the plants have thrips on them, these should be well cleansed before being housed. Any backward plants which have not finished their growth, will be benefited by being placed close to the glass, and in a warmer, closer house than the other plants. Azalea indica Deutsche Perle, one of the most useful of white varieties for forcing, should be placed in a warm house; also some plants of A. amœna and its hybrid varieties, keeping the plants well syringed to check the spread of insects. The Ericas and Epacris should be carefully watered, always using rain-water when obtainable, and abundance of air must be afforded them, but drafts avoided. The earliest plants, which will now be showing their flowers, should not suffer for want of water.

The useful autumn-blooming bulb Nerine Forthergillii major will now be found useful for decoration and cutting. These bulbs should be given a little warmth, to cause them to throw up their spikes. Bouvardias coming into bloom will get infested with aphis after being brought indoors, and should be lightly fumigated at frequent intervals. Large healthy plants should get assisted with a good fertiliser occasionally, also the smaller and later plants if the pots are full of roots. Chinese Primulas will require similar treatment, but a drier pit or house will be necessary for these plants after this date, or damping off at the collar will ensue. The double varieties are more subject to damp than the single ones. A stage close to the light suits them. A few of the double and single-flowered Pelargoniums specially grown for winter blooming may be introduced into a temperature of 55°. Of varieties mention may be made of the following:—F. v. Raspail, a fine scarlet; and candidissima and Swanley Double White, among doubles; and White Queen of the Belgians Improved and John Gibbons amongst singles.

Tree Carnations should be neatly staked and kept in a light position, giving the plants the assistance of a good fertiliser. These plants will require the same temperature as the zonal Pelargonium. Some of the free-flowering Abutilons will do with the same kind of treatment as the last-named. The winter-blooming Tropæolums, if trained loosely to the roof or along the sides of a warm greenhouse, are beautiful winter bloomers, giving a large quantity of flowers, and needing but little attention, only keeping them free from greenfly, and assisting them occasionally with manure-water. Triomphe de Gaul and Ball of Fire are good varieties for winter. The stock of winter-blooming plants for forcing should be secured if the stock be deficient. Spiræas for early forcing, pot up from the open borders, and if the plants have had a rest for a year, so much the better; for they will force more readily. Azalea Mollis should be potted up at once, and plunged in cocoa fibre or leaves. Another potting of Dutch bulbs should take place. A few of the early potted Roman Hyacinths will be ready to bring into a warm house if wanted for early bloom. All the Violets for the winter supply should have been placed in their frames. The tuberous-rooted Begonias will be past their best, and may be gradually dried off, and laid on their sides out of the reach of drip. Solanums will now require attention to keep them free from aphis. They require plenty of water and manure-water to keep them in good order, and to swell the berries. *Geo. Wythes, Syon House, Brentford.*

The Orchid Houses.

There is a large class of dwarf-growing Orchids whose cultivation gives great pleasure to those who understand it, and which would find favour with a larger proportion of Orchid growers if they received more attention at their hands, for they are not the difficult subjects to cultivate which they are supposed by many to be. I refer to Barkerias, Comparettias, Trichocentrums, Cirrhopetalums, Bulbophyllums, Ionopsis, Paphinias, Rodriguezias, and plants of like growth. The winter is the critical time with these plants, and it is a good practice at this season to examine them and see that they are sound, and repotting or rebasketing any requiring it. I am sure that, as a rule, good fibry peat alone is the best material in which to place all small growers, for if sphagnum moss is used, I note that they succeed admirably in it whilst growing actively, but when the resting season comes for those requiring to be kept dry, the moss becomes an element of danger, and in some cases causes the loss of the plants. This is especially the case with Trichocetrums and most of the small-growing Brazilian plants; varieties of Lælia pumila, &c., and all the equitant section of Oncidium—O. triquetrum, O.

tetrapetalum, O. pulchellum, O. variegatum, &c. Excessive heat, too, is a fruitful cause of death in small-growing Orchids in winter; and at that season the intermediate-house is the safest place for all those above-enumerated, and others usually associated with them. Baskets or half-pots for suspending are best to grow them in, it being essential that the smaller the plants are, as a rule, the nearer to the glass should they be placed. Where it is not possible to suspend these small subjects, a shelf should be arranged for them near the roof, but not in a position where the grower cannot see them constantly and without difficulty. Cirrhopetalums and Bulbophyllums are mostly evergreen plants, and do not require absolute drying off, but only a restricting of the water supply when not growing. Rain-water is essential for small Orchids, and best also for all others. *James O'Brien.*

The Flower Garden.

Division and Re-arrangement of Hardy Perennials.—To those not conversant with the height and spread of growth of the various perennials used in beds and borders, the present is a good time for dividing and replanting, the old stems affording data as to height. I do not advocate the plants being put in regular rows, according to height, but that in a general way the tallest should be put at the back of the borders, and be planted in groups of three, five, and seven plants, according as the variety is strong-growing or weak; and a still more important point is, to so disperse the plants that the season through, there may be an equal amount of bloom over the entire border, and that as fast as one species has done flowering, another may be in perfection. At first it is difficult work so to distribute the plants, but in time, as the plants become better known, it becomes easier. There is another point to be observed, and one that should receive more attention than is usually bestowed on it, and that is, the dispersion of the evergreen species over a wide area, so that by planting carpets of Sedum, Saxifrages, &c., near the front, a furnished and cheerful appearance is imparted to the border in winter. If the supply of herbaceous plants is poor, the temporary introduction of choice shrubs to effectively conceal the scarcity, till such time as the plants have grown large enough to be increased by division is desirable.

General Work.—Though some of the summer flowering plants are still gay, it is not safe to defer the lifting of any which it may be desired to save. My own rule is to lift enough old plants of such kinds as have not been propagated in large numbers. For vases, and the centres of large beds, old plants of Pelargonium, Fuchsia, Heliotrope, and Abutilon, are a necessity, and the best of the old plants should of course be retained for these purposes. Marguerites, white and yellow, if not too large, lift very well, and bloom the winter through, if afforded a close, warm atmosphere for about a fortnight, to start them into growth; and the same is true of Abutilons—the white variety, Boule de Neige, and the yellow-flowered Lemoinei are both of them excellent winter bloomers, and we always pot up a dozen or so of each for indoor decoration in winter. Provided they do not interfere with the furnishing of the beds for winter effect, Violas and Pansies are best when left in the beds, where they will begin to flower afresh early in the New Year; and meanwhile cuttings or offsets can be taken from them whenever opportunities offer. Blue Bell (still one of the best bedders), Countess of Hopetoun, white, and elegans, lilac, are still in good flower, and if the winter should prove a mild one, they will continue to flower. Cannas should be lifted at once, and the roots packed closely together in any dry material, such as cocoa-fibre or leaf-soil. They have successfully wintered in the beds, on our dry, gravelly soil, with ashes over the bed to protect the crowns, but I do not recommend the practice, as in a severe winter they would be sure to be lost. Moreover, the growth, after being so wintered, is not robust, and further, growth is pushed in spring before all danger from frost is past, and this entails the application of nightly coverings till June. Except Dahlias and Gladiolus—which everybody knows how best to winter—these are about all the flower-roots which require to be stored away in any frost-proof cellar or shed. The old plants of Fuchsia can be wintered in any place, light or dark, to which frost has no access, and is not over damp. We plant these and the roots of Lobelia Cardinalis as thickly as it is possible to place them on the floor of a Potato cellar, where they winter right well. It is hardly necessary for me to add that, as fast as the beds are cleared of their summer occupants, they should be at once re-furnished either with small shrubs, bulbs, or spring-flowering plants, or all of them in mixture. Bare beds in winter ought not to be tolerated in these days of cheap shrubs and cheaper spring flowering plants. *W. Wildsmith, Heckfield Place.*

Fruits Under Glass.

The Fig House.—Figs now ripening should have air admitted to them when the weather is favourable, and be assisted in ripening by the use of a small amount of fire-heat, or the flavour will be poor. Manure-water should be afforded them when necessary, but the syringe will not be required. A temperature of 60° to 65° at night, and about 70° by day will be suitable. The early Fig-house should be kept as cool as possible, the trees being now pruned, and scale, if any, or other insects should be got rid of by dressing of lemon oil and Gishurst's compound soap. The house will require a thorough cleansing, the walls being whitewashed and the pipes painted with whitewash and sulphur, and the surface-soil taken away down as far as the upper roots, giving a top-dressing of loam and bone-meal in the proportion of one of the latter to ten of the former. This should be made firm, and the whole of the border covered over with some flattish boulder stones, when these are obtainable, about 4 or 5 inches in diameter, and placed about half an inch apart. These give a neat appearance to the border, encourage the formation of roots near the surface, and in watering they prevent the soil from being washed about, and the water does not run away to the lower part of the border when the latter is not level. Young trees whose wood is not ripe should have the aid of fire-heat, a free circulation of air being maintained. Early pot Figs may now be pruned, top-dressed, and stored anywhere out of the reach of frost.

Vineries.—The early house in which the Vines are now pruned should be cleaned thoroughly, the border top-dressed, and everything put in readiness for starting. A thin covering of dry straw may be put on the outside border if there be one, so as to keep out frost. Now is a good time to get turf for top-dressing, and fruit-tree border making carted in.

As was recommended last month, vines from which the Grapes have been cut, and strong growing canes with the wood not yet quite ripe, should have the straggling shoots shortened back, and some amount of fire heat, with continual ventilation afforded until the wood is matured. Other houses must be kept cool till the leaves fall.

Late Grapes should now be ripe, therefore keep an even temperature in the houses, employing a little warmth in the pipes, and some amount of air when the weather is favourable. Look over the bunches regularly for decayed, shanked, or mouldy berries. The pit vinery can now be got ready for its occupants, good, strong, perfectly ripened canes, with fully developed buds. If these were pruned recently, the wounds should be coated with styptic. Keep the vines at rest till the time for starting them arrives. It is better practice to do this and force them harder later in the season, than to start the vines at too early a date. *W. B., Rangemore.*

The Hardy Fruit Garden.

Preparations for Planting.—It being yet somewhat early to expect trees from the nursery; where much fruit-tree planting is in contemplation, and there is much shifting and replanting of trees on the walls to be done, the earlier this work is performed the better for the welfare of the trees. Stone fruit and Pears may be successfully transplanted when of large size, and if done at this early date and with care, the injury done to the roots will not cause loss of crop next year, but on the contrary, will ensure a crop of fruit, generally. It is desirable when shifting large trees, to have the new stations got in readiness, and the tree moved with as much earth adhering to the roots as they will carry, as by doing this the small rootlets are saved. This is best done by transporting the roots on a sheet of tarpauling or strong new bast mats. This is preferable to using an ordinary handbarrow, because it admits of carrying the roots fully extended. Fill up the hole with soil to the desired height, make level and firm, put the tree in position, withdraw the sheet or mat, spreading out the roots in all directions. Cut off the ends of damaged roots, and cover up first with moderately dry fine soil; give the tree a gentle pull upwards and a shake, and fill in the remaining soil, treading the surface evenly over. A few fastenings will be required to keep the branches close to the wall; but these must be sufficiently loose to allow the head to sink with the roots. Where a large number of trees are required, it is advisable to select them in nursery, always choosing clean healthy young stuff, free from snags, and not too vigorous.

Gooseberries and Currants.—If a good stock of young plants is available, vacancies in the rows, and likewise new plantations may now be planted; and as with other fruits, so with these—spare no pains in planting them.

Pears.—Where old trees on walls or espaliers are to be rooted out, their places may well be replanted with upright or oblique cordons at 2 feet apart. This will give the quickest returns. The border should be deeply trenched and much of the soil in which the old trees grew removed, and the more the better. Replace this used-up mould with a loamy soil, made of moderate richness, together with wood-ashes, lime rubble, and a spinkling of half-inch bones. This kind of compost will grow Pears to perfection. Let the drainage receive attention in soils which are unduly moist. *H. Markham, Mereworth Castle, Maidstone, Kent.*

The Kitchen Garden.

Forcing Roots of Rhubarb, &c.—Any plants not sufficiently matured for forcing may be assisted by having a trench cut round the stools, and after an interval of ten days or thereabouts the roots may be taken up and set on a bed of warm leaves. The stools should be set closely together, and the spaces between them filled in with leaf-mould, to which the young roots readily take. Where a supply of decayed leaves cannot be reserved, cocoa-nut fibre refuse will answer the same purpose. Syringe the bed daily with tepid water, and maintain a bottom-heat of 75° to 80°, with an atmospheric heat of 55°. Rhubarb can be successfully grown in an ordinary cellar, but the plant cannot then be forced. Other roots should be lifted at intervals of three to four weeks, so as to maintain the supply.

Asparagus will now be ready to lift for forcing, and of all the kinds of vegetables grown in a garden this is the most accommodating. A hot-bed should be made of stable litter and leaves, of sufficient size to receive a two or three-light frame. In constructing the bed, allow 18 inches outside the box—that is, 3 feet longer and 3 feet wider than the box; tread the material firmly as the work goes on, in order to secure a lasting and uniform warmth; and if the materials are badly mixed, and the bed is ill-constructed, subsidence will take place, and violent heat engendered to the possible failure of the crop. When there is danger of the heat exceeding 85°, a good layer of sods on the top of the fermenting material will act as a safeguard. The plants are best lifted in lumps, with as much soil adhering to them as possible, for the less the root disturbance, the finer will be the shoots. These should be placed quite closely together, the spaces being filled up with leaf-mould or light soil, and which rapidly induces a host of young fibres to push forth. Forced Asparagus is most esteemed when it can be grown in a green state. When bleached it is stringy, and but little of it is eatable. When the plants begin to push, all the light possible should be admitted, and a fair proportion of air whenever the weather will permit of it being afforded. Fresh roots should be lifted every second or third week.

Seakale.—These plants, if not in a fit state for forcing should be partially lifted by having a fork pushed under them, and be gently raised. This should not, however, be of a nature to cause the leaves to flag. When ready for lifting, it may be placed in the Mushroom-house on a mild hotbed of tree leaves, and be treated similarly to Rhubarb. About 100 crowns to start, and about fifty twice a week, will be found sufficient for a fairly large family. It can be equally as well grown in large pots, with an inverted pot and a little litter, standing in a dark, warm place. *Wm. M. Baillie, Luton Hoo.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

Now ready, in cloth, 11s. 6d.
THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	Oct. 22	Royal Horticultural Society: Fruit, Floral, and Scientific Committees meet.
WEDNESDAY,	Oct. 23	National Chrysanthemum Society; Floral Committee. United Horticultural Provident and Benefit Society: Annual Dinner.

SALES.

MONDAY,	Oct. 21	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock and Fruit Trees, at The Wood Lane Nursery, Isleworth, by Protheroe & Morris. Established Orchids, at Shawbury Hall, Shawbury Road, East Dulwich, by Protheroe & Morris.
TUESDAY,	Oct. 22	Lilies, at Protheroe & Morris' Rooms. Collection of Orchids, formed by the late Mr. C. J. Partington at Heaton House, Cheshunt, by Protheroe & Morris (two days). Nursery Stock and Greenhouse Plants at Loughborough Park Nursery, Brixton, by Protheroe & Morris (two days).
WEDNESDAY,	Oct. 23	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs and Greenhouse Plants, at Protheroe & Morris' Rooms.
THURSDAY,	Oct. 24	Established Orchids, 10,000 Lilium auratum from Japan, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms, Nursery Stock and Forest Trees at Hickmandia Nursery, Knockholt, Kent, by Protheroe & Morris (two days).
FRIDAY,	Oct. 25	Imported and Established Orchids, at Protheroe & Morris' Rooms. Nursery Stock, Roses, Greenhouse Plants, &c., at the City Auction Rooms, by Protheroe & Morris.
SATURDAY,	Oct. 26	Dutch Bulbs at Stevens' Rooms, and also at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—48°.4.

The Chinese Flora.

We have on various occasions called attention to the extremely interesting results derived from the recent collections of various travellers in the remoter parts of China. The names of the Abbé Delavay, of the Abbé David, and among our own countrymen of Hance, of Henry, of Ford, of Maries, are prominent among those who have enriched our knowledge of the vegetation of China. Those who think that the task of the systematic botanist is "played out"—and there are some—would be of a different opinion could they but see the rich collections arriving so frequently at Kew and in Paris. These collections are rich, not only in absolute numbers, but in novelties, in plants of special interest, and in plants of special beauty. The Primroses, some of which have been described in our own columns by M. Franchet, may be mentioned in the latter category. Not the least interesting circumstance is the discovery in the mountains of Y-Chang (Central China), and elsewhere, of the wild types of the plants which Fortune and others had previously met with only in a cultivated condition near the coast. Thus, the wild Chinese Primrose had never been known till it was discovered by Dr. Henry and by the Abbé Delavay, as already recorded in our columns. So also with the Skimmia, universally known in gardens as S. japonica, but which, for reasons already cited, we consider should henceforth bear the name of S. Fortunei. A similar remark applies to some of the Conifers which are of special interest, and some of which have been figured by M. Franchet. In fact, it would be difficult to over-estimate the importance of these collections, and we earnestly hope that some of our enterprising nurserymen may avail themselves of these newly discovered stores, and speedily introduce some of the treasures to our gardens. One great advantage is that most of the plants from the highlands of central south-western China or from the Tibet frontier would prove hardy. In order more fully to show what has been done of late by Dr. Henry, we append the following particulars from the *Kew Bulletin*:—

"There is no part of the northern hemisphere of which the flora has hitherto been so imperfectly known as the Chinese Empire. The late well-known botanist Dr. Hance remarked in 1874:—'Whilst M. Maximowicz's excellent and very complete *Index Floræ Pekinensis* provides a good catalogue of the flora of the Chinese metropolis and its vicinity, and Mr. Bentham's classical *Flora Hongkongensis* has acquainted us with the principal constituents of that of the extreme south-east of the empire, nothing whatever of a scientific character has as yet to my knowledge been written on the vegetation of the districts intermediate to these two points, which are separated by 17° of latitude, or of the various ports of trade along the coast, or on the Yangtze.'

"In order to remedy this state of things, the first step seemed to be to catalogue the notices of Chinese plants scattered through botanical literature, and to enumerate in systematic order the species of which specimens collected by travellers in China were to be found in the Herbaria of the British Museum and of Kew. For this purpose, a small Sub-Committee was appointed by the Government Grant Committee of the Royal Society (it has also received several grants of money from the British Association). The work was at once taken in hand at Kew, Mr. F. B. Forbes, F.L.S., who had long resided in China, having very generously placed in the hands of the Committee the manuscript collections which he had made with a similar object. As the catalogue has been compiled by Mr. W. B. Hemsley, F.R.S., Assistant for India in the Kew Herbarium, it has been set up in type, and copies distributed to every European resident in China who was likely to be able to help. The Linnean Society assisted the work by publishing the *Index Floræ Sinensis* in its Journal, and paying the costs of illustrations of the most interesting undescribed novelties. The result has been to stimulate an amount of activity in the exploration of the Chinese Flora which has far exceeded expectation. A profusion of collections of the greatest value and importance has poured in, and there is some risk that it may be difficult to compress the undertaking within the modest limits which were at first contemplated.

"The first part was issued May 20, 1886. Two parts have been regularly published in each year since that date, and the seventh part, bringing the enumeration down to the Loganiaceæ, was issued April 30 last.

"The work not merely brings to a focus all that is accurately known about the natural vegetation of the Chinese Empire, but it has the further convenience of serving as a catalogue of all the species of Chinese plants which up to the date of the appearance of each part were represented by specimens in the Herbaria of the Royal Gardens and of the British Museum.

"To no one is the progress of the undertaking more indebted for the supply of copious and admirable material than to Dr. Augustine Henry, an officer of the Chinese Imperial Customs. Till the beginning of the present year he was stationed at Ichang on the Yang-tse-Kiang, in the province of Hupeh, a position almost in the exact centre of China.

"In the following letter, Dr. Henry gives an interesting account of one of his more extended expeditions:—

"'Ichang, China, October 9, 1888.

"'My dear Sir,—I have just returned from my second trip, having been away about two and a half months. I travelled due north from Ichang till I reached the range separating the basins of the Yangtze and Han Rivers, and then I made my way along the range westwards as far as Szechuen, striking then the Yangtze on the Hupeh-Szechuen boundary line, I returned two or three days ago by boat down the rapids.

"'I am now busy preparing a set of my collections of both trips, with those obtained by four natives working separately in three different localities. I consider it of importance to get these off as soon as possible, so that they may be put into the *Index Floræ Sinensis*; the Compositæ, for example, will, I think, prove rich in novelties.

"'I reached at one point about 10,000 feet altitude, and found the mountains from 8000 to 10,000 feet, rich in plants not previously sent. The primeval forest still remains in parts, though sadly cut and burnt down by the cultivators of Potatos and the Opium Poppy, the only crops grown. Many interesting Conifers occur in this zone, one being a tall slender tree, perhaps 100 to 150 feet high, which originally clothed all the top of the range. Four Ribes also occur, one being an excellent Gooseberry, a Betula, many Acers, curious Rubi, a Fragaria (like vesca), and some pretty alpine plants. I also found what I take to be Diphylleia Grayi, an interesting addition to the Chinese flora. I also send many Roses and Viburnums. In these high regions many of the most important Chinese drugs occur of which the origin has been hitherto unknown. Rhubarb is dug up by the peasants. This Rheum is a tall handsome plant, only occurring at above 8000 feet in the wild state. In the mountains round Ichang I had hitherto only seen it cultivated, and that on a very small scale, one or two plants in the peasants' gardens. So far as I can judge, the main source of the Rhubarb exported to England is the range on which I was travelling, in its extent from N.W of Ichang to the frontier of Thibet, along the boundary line between Szechuen and Shensi.

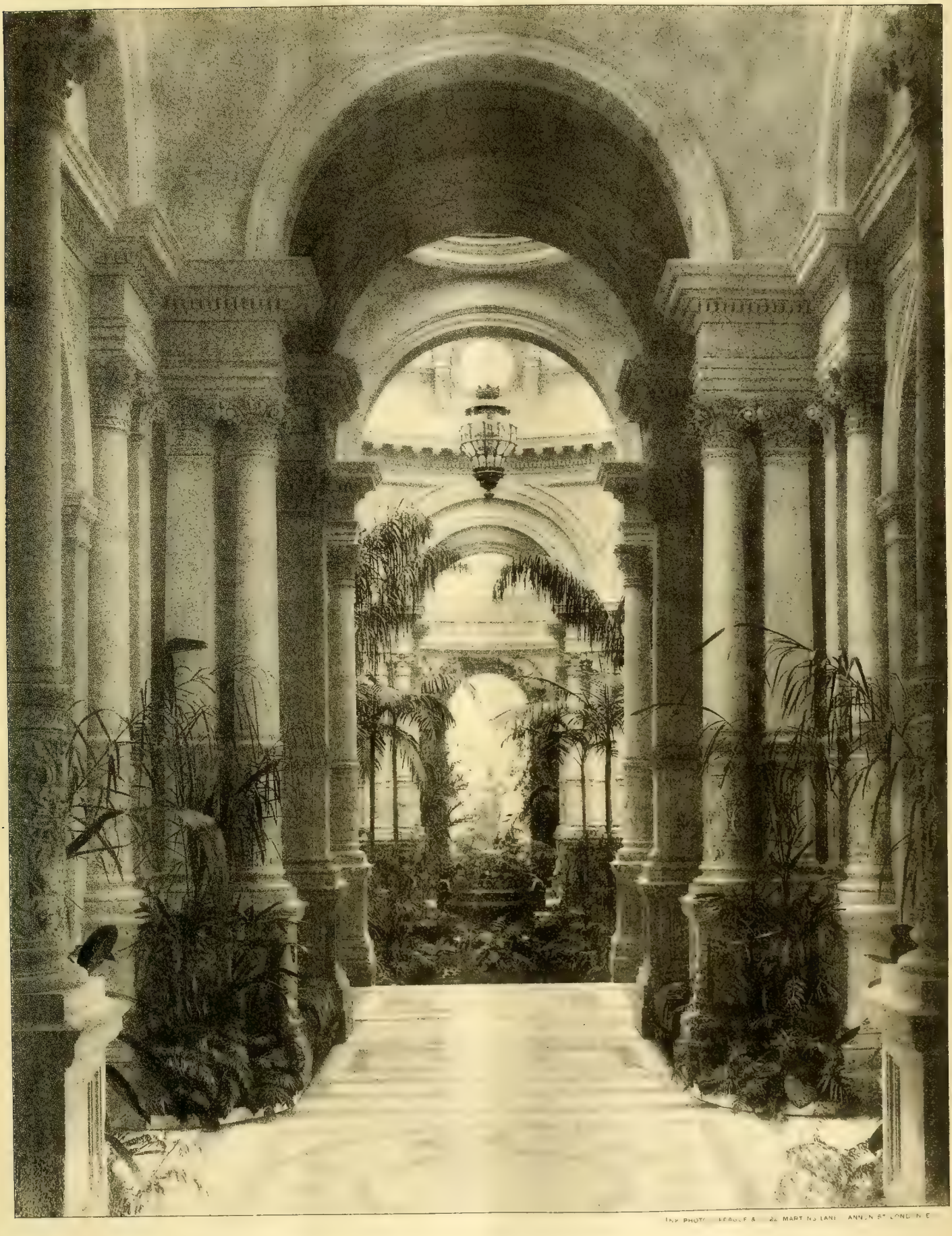
"'Huang lien (Coptis Tecea, Wall.?) occurs cultivated. A rude staging about 400 feet by 400 feet is erected on the mountain side (6000 to 9000 feet altitude) composed of trunks and branches of trees driven into the ground, about 4 feet high, and across the tops of these poles other branches are laid horizontally, so that the sun will only glimmer on the plants growing beneath. After eight years' growth the root is large enough, and is then dug up and exported to all parts of China.

"'T'ahg shên is another important drug, a member of the Campanulaceæ, a large twiner akin to Codonopsis.

"'I might mention many other drugs, but with the specimens I shall send ample memoranda descriptive of them. Of Aconitum and Allium I have many species. Of an Aralia, like ginseng in habit, I have three or four varieties, which may be distinct species. This is known as San-ch'i, the name of a famous drug for use in wounds.

"'I had a very pleasant trip, being on excellent terms with the people. The fauna would also, I think, prove interesting, there being a very large antelope (nearly as big as a cow), with a white mane on the neck, two bears, wild boar, large monkeys, badgers, or animals resembling them, and several kinds of pheasants.

"'The so-called "wild cow" (Budorces), does not occur in this part of the range, but further west it is said to exist. The Chinese also speak of a "wild horse," described as being about the size of an ass, which formerly existed in this part of the range, and I have no doubt some animal of this kind (perhaps



ENTRANCE TO THE WINTER GARDEN AT HALTON.

the origin of the "unicorn") will be found on the wilder parts of the range. We are trying to get a specimen of the splendid antelope alive to send to the Zoological Gardens, the skin which I bought being insufficient for scientific purposes.

"'No foreigner, not even the Roman Catholic missionaries, had ever been in these parts before; and not a single article of English manufacture was in use, foreign goods only being used as a rule by the better classes in towns and in the richer country districts. I am, &c.,

"'(Signed) Augustine Henry.'"

The Ordre du Mérite Agricole.—We read in the *Times* of October 11, that the French Minister of Agriculture, M. Léopold Fays, has conferred the Order du Mérite Agricole on three Englishmen, these being the first of our countrymen on whom this decoration has been conferred. The recipients are Sir Jacob Wilson, the hon. director of the Royal Agricultural Society; Mr. Ernest Clarke, the secretary to the society; and Mr. Henry F. Moore, well known as a writer on agricultural subjects.

The Horticultural Club.—The first monthly dinner and *conversazione* for the session 1889-90 took place at the Club rooms, Hotel Windsor, Victoria Street, Westminster, on Tuesday evening. The Rev. W. Wilks, in the absence of Mr. John Lee, occupied the chair; and there were present the Rev. F. H. Gall, Messrs. Girdlestone, H. J. Veitch, H. J. Pearson, George Paul, J. H. Veitch, H. B. Hall, T. Francis Rivers, James Walker, Geo. Prince, and A. Prince. The Very Rev. the Dean of Rochester; W. Herbert Fowler, Esq., Claremont, Taunton; and J. H. Stott, Esq., The Lindens, Preston, were elected members. The subject for discussion was "The Dressing of Roses," which was introduced by Mr. T. W. Girdlestone, who stated that the subject had only very recently cropped up, and it was, he believed, practised mainly amongst northern growers, and was not much adopted amongst amateurs. He said that in all florists' flowers there was a certain amount of manipulation practised by which petals were brought into position, and a flower made to appear somewhat larger than it otherwise would; but what he alluded to was a practice by which the whole character of the flower was altered. He strongly objected to this, not only because it spoiled the beauty of the flower, but also because it gave the public a false notion concerning them. They see these flowers, named, in the stands; they order them, and are very much surprised and disappointed to find them entirely different in their gardens. The National Rose Society had carefully watched over the interests of the flower and everything connected with it, and he believed that the Committee of the Society could put its foot down on a practice which he believed to be most hurtful to the cultivation of the flower. A very interesting discussion followed, in which several of those present took part. Mr. George Paul stated that he believed whenever this excessive dressing took place in any flower, it tended to its going out of favour. Mr. T. Francis Rivers said he could hardly believe it possible that an exhibitor could dress a stand of seventy-two in the time allotted to him after he had placed his flowers in the box, he seemed to advocate the cultivation of garden Roses, and spoke enthusiastically of Roses which he had 20 feet high, clambering over some old Pear trees and regularly festooned with flowers. Mr. Harry J. Veitch alluded to what had taken place with regard to the exhibition of Orchids. They were not dressed certainly, but where prizes were offered for, say, six Orchids, the custom grew of placing a large number of small plants in a huge pan filled with small plants, and then it became necessary to make two classes—one for plants grown as single specimens, and one for the "made up" exhibits. The Rev. H. H. D'Ombrain as Hon. Secretary of the National Rose Society, said he was sure that the wish of the committee would be to utterly discountenance this injurious practice by giving instructions to the judges; and he believed that the best way would be to pass by all such flowers as if they were not exhibited; and as it had been with gumming, so with this—he believed that we should have no more of it, and he was quite sure that the discussion would greatly strengthen the hands of the Society in dealing with the practice. After several other members had spoken, Mr. Wilks proposed a cordial vote of thanks to Mr. Girdlestone, and a very pleasant evening was brought to a close.

Stock-Taking: September. — As anticipated, the returns of exports are much more satisfactory than those given for August. In no section is there a decrease to note, and chemicals are still looking up well! The exports are not so satisfactory as could be desired—"rings" or "corners" may be thanked for this. The following figures are extracted from the "Summary of Imports from Foreign Countries and British Possessions for the Month of September":—

	1888.	1889.	Difference.
	£.	£.	£.
Total value of imports	28,414,372	33,382,561	+4,968,189
§II.—(A.) Articles of food and drink — duty free	9,803,163	10,981,549	+1,178,386
(B.) — do., dutiable	2,363,452	2,694,872	+331,420
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	2,800,026	3,722,899	+922,873
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,777,477	4,665,594	+888,117
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,068,614	1,331,353	+162,739

The following excerpts from the general returns will be of interest to all who are interested in the supply of fruits and vegetables for the market:—

	1888.	1889.	Difference
§ II. Fruit:—			
Apples, raw ... ... bush.	419,336	289,376	—129,600
Unenumerated, raw ... ,,	821,978	358,216	—463,762
Onions ... ... ,,	381,451	424,362	+42,911
Potatos ... ... cwt.	43,119	34,962	—8,157
Vegetables, raw, unenumerated ... ... Value	£13,143	£53,818	+£10,675

Altogether the immense mass of figures making up the "returns" for September possess a great deal of interest, read in connection with the history of the country from day to day.

The Late Disaster on the Clyde.—A Committee has been formed for the purpose of raising a sum of money for the widows and orphans of the two gardeners, Frazer and Hall, who lost their lives in the *Osprey*, a yacht belonging to R. B. White, Esq., of Arddaroch, the particulars of which have already appeared in the *Gardeners' Chronicle*. Mr. Fred Horsman, Colchester, Hon. Secretary to the Committee, sends a list of the committee, and recommends the object of the appeal to the warm support of gardeners, and all who are connected with horticulture. The list of subscriptions is headed by R. B. White, Esq., with £50; H. J. Veitch, Esq., £15 15*s.*; W. H. Protheroe, Esq., £15 15*s.*; Fred Horsman & Co., £5; and others are promised. The list comprises the names of the following gentlemen:—H. J. Veitch, Esq., chairman, Chelsea; W. H. Protheroe, Esq., treasurer, 67, Cheapside; Mr. Fred Horsman, hon. sec., Colchester; H. M. Pollett, Esq.; Fred A. Philbrick, Esq., Q.C.; James Wilson, Esq., Falkirk; W. Cobb, Esq., Sydenham; E. Harvey, Esq., Liverpool; W. F. Thomson, Esq., St. Helens; Jas. Buchanan, Esq., Edinburgh; John Gair, Esq., Falkirk; A. H. Smee, Esq., Hackbridge; G. F. Morris, Esq., Leytonstone; Mr. E. Shuttleworth, Clapham; Messrs. Hugh Low & Co., Clapton; Mr. Harry Williams, Upper Holloway; Mr. B. Wynne, Catherine Street, Strand; and Mr. James O'Brien, Harrow-on-the-Hill.

A Floral Society has been formed for Lye, Wollescote, and district, of which B. Hingley, Esq., M.P., Hatherton Lodge, Cradley, is the president, and Alphonse Smets, Wollescote House Gardens, Stourbridge, the secretary. A large and influential committee is exerting itself to hold an exhibition this season. The Society has been formed only six weeks, and the subscrptions already amount to £80.

A New Method of Propagating Chrysanthemums was introduced to the meeting of the Floral Committee of the National Chrysanthemum Society on the 9th inst., by Mr. Briscoe Ironside, Foots Cray, Kent. He submitted a plant in illustration of his method—a Japanese variety in a 24-sized pot, about 2 feet in height, very strongly grown, and bearing one large flower. This was raised from a leaf, the petiole of which was inserted in a thumb-pot of soil on January 20 last; the first week in April it was shifted into a 60-pot, when the thumb-pot was full of roots; on April 25 root-suckers appeared; on May 16 it was transferred to the pot in which it had bloomed. All the weakly-looking suckers were removed, and the one remaining was encouraged to grow. In answer to inquiries, Mr. Ironside distinctly stated there was no leaf attachment whatever. At the outset he was very particular as to soil, allowing a larger proportion of sand than is usual with cuttings of plants.

Whinham's Industry Gooseberry.—This prolific Northumbrian variety is evidently becoming a favourite with market growers and private gardeners, seeing that Messrs. Fell & Co., nurserymen, of Hexham, who are the introducers of it, have sold in five years 431,350 bushes up to October 4 last.

The British Fruit-Growers' Association.—A conference was held at the Crystal Palace, on Thursday, October 10, under the auspices of the British Fruit-growers' Association. In the absence of Lord Brooke, M.P., the President, who had telegraphed to express his entire sympathy with the meeting, Mr. T. Francis Rivers, of Sawbridgeworth, one of the Vice-Presidents, was called to the chair. In opening the conference, he said that since they last met there were indications that public attention had been drawn to the great importance of the meeting there last year. Fruit-growing had, he was glad to say, received very great assistance from the powerful advocacy of the Lord Mayor for the present year. The British Fruit-growers' Association, he hoped, would set before the public that fruit-growing should be more developed on farms, that it should not be confined to market gardens and to speculative orchards. At the present time they could, with some kinds, meet foreign competition by keeping their markets supplied with fruit of superior quality, and this they could always do. Their Gooseberries, Currants, Strawberries, and Raspberries were better than any that the Continent could furnish, and although he believed that continental growers were preparing to meet them by adopting their varieties, yet they could not, in Gooseberries and Strawberries especially, compete against British fruit. He hoped that before long their markets would be so well supplied with Apples of such good quality, that their very good friends, the Americans, would be compelled to consume their flat, tasteless, and woolly Baldwins amongst themselves. They should not want them here. They were, he understood, menaced with the importation of Plums from the great Plum-growing districts of Servia and Eastern Europe, probably the same sort of rubbish as that poured into Hull from the Plum orchards of Germany. It seemed to him almost incredible that the products of countries at

such a great distance could beat those which were close to their markets. Pear-growing in England was a very uncertain business. He had noticed that in the London suburban gardens the Pear tree was generally more vigorous and healthy than the Apple, owing, no doubt, to the warmer climate and the capability of the Pear tree to resist the evil effects of the London smoke. Mr. J. Wright, Mr. A. Dean, Mr. G. Gordon, and Mr. R. Smith took part in the discussion which ensued, but nothing that was new was related. It was stated by the Chairman, on Mr. Dean asking what the Fruiterers' Company had done for fruit culture, that it would give £5,000 in promoting its extension.

Kendal Natural History Society.—At the monthly meeting on Friday, October 11, there was a very full attendance, the Rev. G. Crewdson, chairman, presiding. Mr. George Stables showed a fine specimen of the "Death's Head" moth, which had been taken in Lyth. The paper of the evening was by Mr. G. W. Murdoch, editor of the *Westmorland Gazette*, which dealt with ornithology in relation to agriculture. Amongst the various birds which have met with destruction through ignorance and unmerited prejudice, and which have incontestably proved their value to the gardener, fruit-grower, and farmer, the short-eared owl, the sparrow-hawk, and sparrow, found in Mr. Murdoch a warm defender.

Floral Decorations.—At the recent ball given by Colonel North, at the Hôtel Métropole, on the 11th inst., the floral decorations of the whole of the Whitehall Rooms of the Hotel were entrusted to Messrs. Wills & Seagar, South Kensington. There was over half a mile of wreathing, made chiefly of Chrysanthemums, and besides numerous specimen Palms for the corridors, &c. There were in the ball-rooms forty-two medallions of white flowers, as Eucharis, Calla, Chrysanthemums, &c., each measured about 2 feet by 2½ feet, and had the letters E. N. in the centre worked in scarlet Pelargoniums. One ball-room was decorated with yellow flowers and pink Pelargonium. The angles of the rooms, &c., were relieved by tall shoots of black-stemmed Bamboo, 20 feet long. Above the orchestra were the dates 1868 and 1889, in huge figures of bright scarlet Pelargonium. These dates referred to the age of the Colonel's daughter, whose majority was the occasion of the ball. The general effect of the decorations was very pleasing, and, although profuse, not heavy.

Lilium Wallichianum superbum.—A fine group of plants of this noble Lily is now in bloom in Messrs. Hugh Low & Co.'s nurseries, Clapton. The plants have stems some 4 feet in height, each crowned with several very large, wax-like, white flowers, the interior of which is tinted with a clear light yellow colour. It is one of the finest of Lilies. In the same group were a few plants of the richly coloured Lilium nepalense, whose flowers have the recurved parts or tips of the petals of a clear yellow colour, and the centre of a dark tint of purple, which is so intense that it seems to be almost black at a short distance.

The Penny Post.—The following suggestive extract is taken from a letter dated March 19, 1840: —"The day before yesterday, sent a flower of a Catasetum to Dr. Lindley. How useful the Post is! the flower was put into a large pill-box, and only two-pence was charged." We hope the sender did not pack his flower in cotton wool.

Mr. H. J. Veitch. — On Wednesday evening last, at the Grand Hotel, Charing Cross, a private complimentary dinner was given to Harry J. Veitch, Esq., F.L.S.; the chair being occupied by Baron Schroder, who had on his right the guest of the evening, and was otherwise supported by Sir Edwin Saunders, F.R.B.S., Col. Beddome, Col. Bird, Dr. Hogg, the Rev. W. Wilks, Hon. Sec. R.H.S., and Messrs. Shirley Hibberd, N. Sherwood, G. Paul, and other friends to the number of about fifty. Amongst those who sent letters of regret may be mentioned The Dean of Rochester, Sir Trevor Lawrence, Bart., M.P., Professor M. Foster, Mr. Thisleton Dyer, and Mr. D. Morris. After the usual loyal toasts had been duly honoured, Baron Schroder gave the toast of the evening, and referred in highly eulogistic terms to the capacity and skill which had brought the "House of Veitch" to a position second to none in the world. Not the least effective part of his speech was a few well-chosen sentences addressed specially to Mr. A. J. Veitch and Mr. J. H. Veitch, the recently introduced juniors of the family, whom he hoped would, when called to the helm of affairs, follow the excellent example before them, which would assuredly lead them to a like honourable postiion.

Don Sebastian Vidal. — In *Nature* of October 3, the death of this naturalist on July 28 is mentioned. Señor Vidal was the Director of the Botanic Garden at Manilla, and Inspector of the Forest Department of the Philippine Islands. He was the author of various works on the botany of the Philippine Islands, in some of which he was assisted by Mr. Rolfe of the Kew Herbarium.

Horsman & Co.'s Orchid Catalogue.—An evidence of the importance of the Orchid trade is the well-arranged catalogue of eighteen pages, devoted entirely to Orchids, sent out by Messrs. F. Horsman & Co., of Marks Tey, Essex, a novel feature in which is that it is interleaved with ruled paper for the convenience of those who use it, such arrangement being very serviceable for noting species required, or making remarks on them as they flower—in fact, it supplies the place of an Orchid stock book.

Orchids.—A French translation of Mr. Lewis Castle's *Orchids: their Structure, History, and Culture*, has been prepared by M. A. de Meulenaère, Secretary of the Orchidophiles Belges, and has just been published in Ghent by F. and R. Buyck Frères, 15, Rue de la Tour Rouge. It comprises 189 pages, the list of Orchid illustrations having been extended by the addition of numerous references to Continental works, and the list of Orchid amateurs includes the names of those in England, Germany, Austria, Belgium, France, Holland, Italy, and Switzerland. The English list, which was taken from the third edition of Mr. Castle's book, requires some revision, but the directory will be found very useful. The translation has been well rendered; the book is well printed, and neatly bound in green cloth.

Fruit Culture.—Towards the fund which the Lord Mayor and the Fruiterers' Company are raising for the encouragement of fruit culture in this country, the Duke of Westminster has contributed £50, Baroness Burdett-Coutts £50, the Earl of Dartmouth (first donation) £20, Mr. W. H. Smith, M.P., £20, and the Duchess of Grafton, £5. Lord Dartmouth, in expressing his thorough approval of the object, says that he shall be very glad if it will be found possible to establish in different localities trial orchards and fruit gardens. He particularly hopes that the culture of the Tomato may not be lost sight of in connection with the movement.

Jankaea.—Owing to an unfortunate mischance, the name of this plant was mis-spelt in our last issue, and, still more unfortunately, the note on this interesting plant was attributed to Mr. U. Dammer, instead of to M. Max Leichtlin.

The Encouragement of Rural Industries.—The Government of Victoria being embarrassed with the magnitude of the surplus, has conceived the idea of appropriating a quarter of a million pounds sterling during the next five years to the encouragement of certain rural industries. The principle of aiding the development of such industries is in the abstract sound; the intention is laudable, the work of tilling the land, and raising food of various kinds therefrom, being the normal business of man. It is probably not forgotten that farmers pay heavily through the Customs for nearly every article they have to buy, and it has been suggested that the scheme of giving bonuses for the varied forms of industry enumerated is put forward as a partial return of the moneys extracted from the farmers' pockets. It is proposed that acreage bonuses be offered to persons who shall plant and cultivate during the year 1889, or during the succeeding four years, Grape-vines, fruit trees, and such other trees and shrubs of commercial value as may be approved by the Governor in council, in sums not to exceed £2 per acre, divided as follows: — £1 per acre at the end of the first season, viz., from November 1 to February 28; 10*s.* per acre at the end of the second season; and 10*s.* per acre at the end of the third season. Bonuses not exceeding £3 per acre are also proposed for certain acreages of a variety of fruits, commencing with 5 acres each of Apples, Almonds, Apricots, Chestnuts, Figs, Filberts, Gooseberries, Loquats, Lemons, Mulberries, Nectarines, Peaches, Olives, Quinces, Strawberries, Walnuts, and Carob trees; 2½ acres, 2 acres, and 1 acre, being required of numerous other sorts; the payments to be made by instalments in much the same manner as in the previous instance, but extending over five years. For the making of wine of approved character the amount paid is not to exceed 2*d.* per gallon; no one maker to receive more than £100, while a bonus not to exceed £5000 may be paid to any company with a capital of not less than £100,000, of which £25,000 shall be fully paid up, and successfully established, to purchase, store, blend, and export wine. Exportation bonuses are also provided, and amongst the objects of these are green, dried, bottled, and canned fruits.

BERLIN.

As successor to Professor Urban as first Custos of the Botanic Garden, Dr. Pax, of Breslau, has been appointed.

Mr. Scharrer, of Tiflis, has resigned his situation, and has returned, after a thirty years' sojourn in that trans-Caucasian city, to Germany, where he lives at Krossen on the Oder.

By a mistake, I wrote in my last note that Mr. Winter intended to exhibit shortly in Berlin, Palms from Bordighera. As I hear, he will send five truckloads to the great horticultural exhibition next year at Berlin, which is to be held from April 25 to May 5. This exhibition will be a large one. A prize of £50, for instance, is offered for the best decoration of a ball-room. Scientific matters are also attended to in the programme. The Royal Prussian Railways will grant free railway rates for returned packages, and it is to be hoped that the other railways will follow their example.

On the causes of Albinism, Dr. Sorauer, of Proskau, has lately given interesting details. He considers that Albinism is due to a thickening of the membrane of the cells, so that they become impermeable. He found that plants, which were shaded from light until June, and then suddenly exposed to full sunshine, produced white leaves, but the youngest ones were green. He considers that the partitions between the cells in a certain state of tension become stiff and remain in the state of chlorosis, whilst the filtrative power of the cell membrane in the youngest leaves is not so restricted as to interfere with the nutrition of their plasm and chlorophyll-apparatus. To prove his opinion, he cultivated Tradescantia zebrina multicolor in pure sand, watered with a nutritive solution of 0·5 per cent., when he found, that the production of fresh substance was less in the white-leaved specimens than in the green ones.

From November 15 to 17, there will be held a Chrysanthemum exhibition at Berlin. The Secretary of the *Verein zur Beförderung des Gartenbaues*,

Berlin, Invalidenstrasse, 42, will give further information.

At Sans Souci, near Potsdam, five new plant-houses have been constructed. It is said that they are destined especially to Orchid culture.

Of high interest are the plants of the Cameroon Mountains, now cultivated by Mr. Braun at the Botanic Garden. A fine horticultural acquisition, for instance, is Crinum Broussonetii. The flowers, five to six in a truss, are large, pure white, with a rose-coloured stripe on each segment. *Berlin Correspondent.*

Fruit Register.

Apple Schöner von Boskoop, *Gartenflora*, t. 1304.

A medium-sized globular Apple, with a green rind, streaked and blotched with crimson.

Apple Belle de Longué.

A large globular Apple, of a yellow colour, richly flushed with crimson, with a short stalk set in a very deep basin. The flesh is white; and the season is November and December. It is highly spoken of by M. L. A. Leroy, of Angers, by whom it will be sent out.

Cherry Guigne Ambrée.

This, the Amber heart of English pomologists, is figured in the *Bulletin d'Arboriculture* for August. According to M. Burvenich, this variety is showing signs of degeneration, on which account it is not recommended for general cultivation, but it has one good quality, *i.e.*, that the fruits are rarely eaten by birds. This not say much for the excellence of the flavour.

Pear Triomphe de Vienne.

I cannot help thinking that this Pear, when better known, will become a general favourite. With us it is one of the heaviest of croppers on standards. The fruit grows to a good size, is of a russety colour, sometimes streaked with dull red on the sunny side. The flesh is exceedingly melting and full of honied sweetness. In addition to the above good properties, it comes in at a season when sometimes a gap occurs, viz., just after Williams' Bon Chrétien is over, and it will keep good for a long time after being ripe.

Pear Emile de Heyst.

This variety has this year again cropped heavily; in fact, it seldom fails to bear well, and the fruit when fully ripe is not much behind Maria Louise in goodness of flavour, and the flesh resembles that variety very much. The flavour, like that of many others, is better when the tree is grown as a standard; but for large fruits, trees on walls are the best. *H. M.*

The Herbaceous Border.

THE HERBACEOUS ASTERS.

These Michaelmas Daisies are very desirable garden plants, because they are so very hardy that no autumn frosts injure the flowers, and they are so easily grown that no kind of garden soil is unsuitable, and when cut, they are useful for decorative work. Although they will grow anywhere, good cultivation is not lost upon them, and well-developed specimens are beautiful objects. They are easily propagated by division, and this may be effected as soon as the plants pass out of bloom, or later. They make an enormous mass of roots, and if planted in beds, the tall-growing, vigorous-constitutioned sorts ought to have a distance of 3 feet between the plants if they are set out in beds, but they are certainly not so effective in masses as they are when they are placed as isolated specimens near the back of the herbaceous border. We have obtained the most vigorous growth and well-developed flowers and spikes by trenching the soil about 2 feet deep, and burying plenty of farmyard manure in the ground.

Messrs. Barr & Sons, who grow a collection of about eighty species and varieties, have them in beds, as being the best for trade purposes, and it also affords a good opportunity for making comparisons. A few of the best for decorative purposes are A. amellus, the flowers purple, 2 inches in diameter, and freely produced; the plant is not more than 2 to 3 feet in height. A. ericoides is very distinct; it produces its dense heads of small white flowers very freely on stems about 3 to 4 feet high. A. longifolius formosus was very conspicuous, by its reddish flowers, produced in dense corymbs; the stems are about 2 feet high. A. novæ-belgii grandiflora has pale blue flowers, larger than the ordinary form; the stems 4 feet high. The variety angustifolius has much taller stems; the flowers pale lilac. A. pulcherrimus grows 5 feet in height, and produces numerous lavender-coloured flowers, 1½ inch across. One of the most beautiful in the collection is A. Chapmanii; it is a tall plant, about 6 feet high, the ray-florets forming a perfect circle; pale lilac-blue in colour. A. cordifolius has small pale blue flowers, on much-branched stems, about 4 feet high. A. polyphyllus has whitish flowers, much like those of the common Daisy; the stems are much branched. A. novæ-angliæ, with purple flowers, and the variety rubra, with reddish flowers, produced on 6 feet stems, are two very desirable varieties. *J. Douglas.*

Single and Double Sunflowers.

These have attained deserved popularity during the past few years as subjects for the herbaceous border and the shrubberies. As is the case with some other groups of hardy herbaceous perennials, too much has been done in the mere creation of names, without just cause; others, again, by reason of their straggling habit of growth, are not suited to any borders, large or small, and should only be found in the wild garden. The varieties most worthy of cultivation are those belonging to the H. multiflorus and H. rigidus sections, and which may be summed up in a few words. Of the former all are good, and, apart from the type, the varieties major, plenus, and grandiflorus—or maximus, as it is often called—are excellent decorative plants, yielding abundance of flowers for three months in succession. The flowers invariably improve with the cooler nights of early autumn. Some three years ago, among the ordinary H. multiflorus plenus, there appeared in our collection a double flower destitute of the guard petals, and which at first I regarded as being quite distinct; further search, however, revealed the fact of its being a mere sport, as not only were there present the two flowers upon the same stem, but in some few instances the flowers were composed half of the ordinary double kind, with guard petals, whilst the others are destitute of the latter appendages. A few plants still had all their flowers double, after the manner of a rather poor form of Cactus Dahlia. These I selected also, and, calling them for the time being by the varietal name, grandiflorus, planted them separately to ascertain whether they would continue to produce similar flowers again, but the following year revealed nothing but the original stock, for not a flower of the new comer made its appearance. I have, however, a flower or two again this year, though none have appeared upon separate plants, as hitherto, and I send for your inspection a flowering-stem containing, in the majority, flowers of the ordinary H. multiflorus plenus, and one without the guard petals, the latter at first appearing a slightly deeper shade of yellow, or, more correctly, the same colour as the central part in H. multiflorus pl. It would be a welcome addition were it anything approaching constant, but my experience of it is quite the reverse of this; the flower upon the specimen is identical with that recently distributed as Soleil d'Or.

Then if we turn to the H. rigidus section, we have in the type an excellent border or shrubbery plant, rather inclined to ramble underground by its stolons, but still a good plant, and deserving of cultivation. This plant flowers in the end of July and onwards to the middle of August; and ere the last of its flowers are expanded, the variety latiflorus has come into flower. This last named plant is the recipient of many names, with the result of much confusion. The flowers are individually distinct, and the foliage is broader and more ample than that of the type. H. doronicioides is another apparently belonging to this section, but there is little to recommend it.

The cultivation of Helianthus presents no difficulty whatever, but if fine flowers are desired, H. rigidus and its varieties are the best to plant, lifting and replanting them annually; and the H. multiflorus section, which should be replanted biennially. These latter, if left for a longer period than two years, deteriorate, and frequently the centre of the plant, after a severe winter, will become decayed. *J.*

The Rock Garden.

ALPINE DENTARIAS.

Of all the Alpine Crucifers, the genus Dentaria is the most decorative. These plants do not belong to the Alps properly so-called, but rather to the wooded regions, and are rarely found above an elevation of about 5000 or 6000 feet, which height is sometimes attained by D. enneaphylla, but is never exceeded. Why are these plants so rarely seen on rockeries, when they possess all the qualifications to recommend them to lovers of wild plants? I cannot understand it. Dentarias are robust, are exceedingly ornamental, the climate of England is more favourable to them than that of any other country, and yet any one may see that they are but rarely cultivated. Leaving out of consideration the American or Siberian species, which are not so pretty as those of the Alps, I will give a few details about our native Dentarias, grown successfully in our alpine garden, and which are, in my opinion, among the most charming and ornamental of mountain plants.

Dentaria bulbifera (Linnæus), is a species peculiar to the eastern districts of the Alps. It is found in the Austrian Tyrol, and in several parts of Eastern Switzerland (at St. Gall, in Tessin), but it is never found in the western districts. The plant is more interesting than pretty; the flowers are pale lilac, small, growing in close clusters; there are three or four alternate leaves, and in the axil of each leaf is found a small bulb, which, when ripe, falls to the ground and perpetuates the plant. Flowering season, April or May. This plant grows best in the shade, in rather coarse soil, composed of leaf-mould, sand, and loam.

D. digitata (Lamarck).—This species and the one next mentioned are those most generally found in the mountainous districts. The leaves (of which there are two or four) are digitate—that is to say, they are cut into five segments, united in a central point. The flowers have a large corolla, grow in an umbel, and are of a deep lilac or rose colour, never white. The plant grows in the woods of the calcareous mountain districts, and flowers from April to May. It is easily cultivated, requiring only a soil rich in humus, and a well-shaded spot.

D. pinnata (Lamarck) is frequently met with growing close to the preceding species. The leaves (of which there are from to two to four) are pinnate, and not digitate, that is, the segments, which number five to nine, are spread along the petiole. The flowers are very pale lilac, sometimes, indeed often, white, and grow in an umbel. The corolla is large and showy. The plant grows in the shade in the woods of the calcareous mountain regions, and flowers from April to June.

D. polyphylla (Waldstein and Kitaibel) is a rarer species found exclusively in the eastern Alps, and up to an elevation of about 5000 feet. The stem bears three or four leaves, pinnate and very acuminate, the flowers are large (larger than those of either of the preceding species), and of a beautiful yellowish-white, contrasting admirably with the other species. The flowing season is during April and May; the habitat those forests where the soil is good and rich in humus. The plants are easily grown in the shade in a soil such as they are found in when growing wild.

D. enneaphylla, Linnæus, is a curious species with

dense foliage, which grows in the Austrian Tyrol. There are three leaves, each cut into three segments. In the centre of a tuft of verdure appears a large or small bunch of clear yellowish-white flowers which are smaller than those of the last three species, measuring only about three-fifths of an inch across. This species is peculiar to the alpine region, being found in the highest forest limits, at a height of 5000 feet. We grow it in a light pebbly soil, in a shady spot.

We have also, in our alpine garden, several interesting hybrids which we cultivate successfully. I may mention Dentaria pinnato-digitata, Rapin in *Bulletin No. 352 de la Société Vaudoise des Sciences Naturelles*. This plant is intermediate between its parents. The leaves are pinnate, smooth on the under surface, as are those of the female parent, but the segments are very like those seen on the other species—D. digitata. The leaves are sometimes palmate, but at other times palmate leaves spring up among the pinnate leaves. While the flowers of both parents are lilac or white, in this plant the corolla is pale lilac, and partakes of both parents. The hybrid has been seen at St. Largues, on the Jura, at Salève, and near Montreux.

D. Killisii, Brügger, in *Report of the Naturalists' Society* of Graubünden, 1878-80, is a hybrid between D. digitata and D. polyphylla. It is a large and sturdy plant, much like both its parents, and seems to be of more vigorous growth than they are. But it is sterile and does not bear fruit. *H. Correvon, Jardin Alpin d'Acclimatation, Geneva.*

PROLIFEROUS RASPBERRY.

Proliferous Roses are common enough, and proliferous Raspberries are, no doubt, more frequent than is supposed, as they are not looked for, and not likely to be generally esteemed, even when found. Botanists, however, always find them interesting, and cultivators might learn some lessons by endeavouring to find out the secret of their production. Growth is arrested in one direction when a flower is produced—or, rather, the energy which previously was devoted to the formation of shoots and leaves is now concerned in the successive production of flower, fruit, and seed, and generally the energy of the plant in that direction is used up in the formation of seed, and a rest or check is experienced; but in the flowers of Raspberry, with drawings of which we have been favoured by Dr. Conwentz, of Dantzig, the flower (fig. 62) looks as though it had not made up its mind whether to remain and flower, or to become a shoot; thus the calyx is more leafy than usual, the petals and stamens are normal, the fruits or carpels, usually forming the fleshy pips of the Raspberry, are here represented by five stalked leaves, with indications of ovules on their margins (fig. 63), while beyond them the axis is prolonged into a shoot bearing numerous partially developed leaves. In the second flower (fig. 64), the petals seem to have been wanting, the stamens are numerous, the fruit leaves even more distinctly leafy than in the former case, while the axis is terminated by a secondary flower. The one flower, therefore, is an illustration of median floral, the other of median foliar prolification.

PLANT NOTES.

HIBISCUS MUTABILIS.

This fine old species is rarely met with in gardens, and the reason why, it is difficult to explain, as there are few more distinct and showier autumn-flowering inmates of the greenhouse; perhaps the fact that it is not seen at its best until it attains a large size may account for its rarity. But where a large conservatory exists, it would be a suitable plant, more especially where it could be planted out. Its large, palmate, five-lobed leaves render it effective even when not in flower, as it is an evergreen shrub; but when in flower, it is a very effective plant for the time being. The flowers are produced somewhat differently to the majority of Hibiscuses, for instead of being borne singly, they are borne at the ends of branches in umbellate cymes of from four to eight, generally only four. The pedicel is 3 inches in length, stout, and keeps the flowers nearly erect: in size the flowers are about the same as the best forms of H. sinensis. The colour, as may be gathered from the specific name, is rather variable, ranging from whitish to rose. The subject of this note has soft rosy flowers, and was inadvertently shown as H. pedunculatus at the Royal Horticultural Society's meeting on September 17.

H. mutabilis is however much superior to the last-named plant, and is a native of India, whilst H. pedunculatus is South African, and the flowering period marks the end of the growing season. Any pruning



Fig. 62.—Prolified flower of raspberry. (See text).

which may be required should be done soon after the bloom is passed, and if the plant is grown in a pot, repotting should then be attended to and growth encouraged in the usual way. During the summer months the plants might be grown out of doors, and taken inside again before the weather gets cold, as when left out too long the flower buds often drop. The plant makes a fine standard, and that is probably the best way in which to grow it. Another old plant also shown at the same meeting was Aphelandra cristata, a West Indian plant requiring stove accommodation; but otherwise succeeding when treated similarly to Hibiscus mutabilis. It may, however, be well done when grown in pots not less in size than 32's, in which size several leads may be perfected. As is well known, the flower heads are terminal in four-ranked spikes, and on strong plants four more spikes are produced from the base of the terminal one. They are brilliant orange shaded, scarlet, and last several weeks in perfection, and are very effective. After flowering, the plants should be cut down, and fresh growth encouraged. It is easily propagated by cuttings. There is a good figure of the plant in *Bot. Reg.*, t. 1477. *F. R.*

Lasiosiphon anthylloides.

Seeds of this plant were sent us from the Cape, by Mr. Adlam, in the month of December, 1887, as "Lasiosiphon sp., a plant with fine, yellow flowers." Plants raised from these seeds flowered a fortnight ago, and have been referred to by Prof. Oliver as the above species. It belongs to the order Thymeliaceæ, and is allied to the genus Gnidia, to which it bears a resemblance (especially to G. carinata, which is a free-flowering plant seldom out of bloom) though differing chiefly from that gem in its pentamerous flowers, while Gnidia has tetramerous. The flower-heads and flowers are larger, also the leaves, and it is a plant in every way superior to G. carinata. It is a cool, greenhouse plant, the colour of the flowers being a beautiful soft yellow. Mr. Adlam would do well to send more seeds into this country. *W. H.*

Pentstemon barbatus var. Torreyi.

With us this variety (which is usually considered to be half hardy), is quite hardy, and makes a capital border plant, growing from 5 to 6 feet in height—it flowers early, and continues to bloom until cut down by frost. The flowers are thinly arranged on the long panicles, the colour of the corolla, approaching crimson, it very vivid, so as to render it recognisable at a great distance. Propagation is best effected by seed, which should be sown during the spring time, and pricked off into nursery beds when large enough to handle, where, in the course of a couple of years, they will arrive at a flowering stage. *W. Harrow, Botanic Garden, Cambridge, October* 10.

THE FOOD OF VEGETABLES.*

After alluding to the unprofitableness, for purposes of utility, of vegetables of enormous size, and giving a striking instance of the hoe as a creator of wealth, dwelling on the importance of turning the virtues of the atmosphere to the best account by good tillage, giving an example of nutritious vegetation and the reverse, as influenced by manures in Dr. Hogg's pasture as determined by the cows choosing one portion and neglecting the other, Mr. Wright said:—

Some persons condemn natural manure, and extol the so-called artificial; others condemn the artificial and extol the natural. I think it is better to do neither, but to discriminate. The bulk of the manure that gardeners have to work with is poor in composition.

Then come the value and the need of the concentrated essences known as artificials. Phosphoric acid [in the shape of superphosphate of lime], with potash, the former predominating, for the Brassica family; potash with phosphates for the Legumes or pod-bearers, also for Potatos; and nitrogen for every crop that needs a whip on to enable it the more freely and fully to abstract the the substantial ingredients. With superphosphate of lime, nitrate of potash, nitrate of soda, or sulphate of ammonia at hand, the gardener can improve his probably poor farmyard manure considerably, and indeed need not wait for it, as so many men have to do, until they lose their tempers and prejudice their crops.

When special manures are found to be good, they contain the above-named ingredients, and possibly others, which may act beneficially in certain soils; thus, magnesia for Potatos, soda for Asparagus and Carrots, and Chlorine for Beet (both imparted by common salt), and a little iron for most crops. According to the experiments of Dr. Griffiths, Principal of the Lincoln School of Science, many soils do not contain sufficient of this ingredient. Passing for a moment from vegetables, Mr. Divers has recently stated in the *Gardeners' Chronicle* its

* An abstract of a paper read by Mr. J. Wright at the Chiswick Vegetable Conference on September 26, 1889.

efficacy in curing a fine Peach tree of yellows. I have seen the tree, and can pronounce the cure complete. For vegetable crops, about a quarter of an ounce to the square yard will suffice for experimental purposes, either in solution or powder, this to be applied only when the soil is wet, to yellowish-looking plants and crops, for producing colouring matter, or chlorophyll.

But while the soil must be fed in order to enable it to feed the crops, it is possible to impair its productiveness by over-manuring, especially with matter from stables of milch cows, and decayed leaves. I once took possession of a garden that was like a mass of humus, through additions of that nature for generations, perhaps. A walking-stick could be pushed down it to the handle, easily. One plot, I was told, would grow Potato plants, but no tubers. I found that to be a fact, and recorded it in the *Journal of Horticulture* at the time. Peas were yellow and profitless. The soil was poisoned with acids, and lime was needed to neutralise them, also to set free the dormant nitrogen. It was given freely, as also were potash and bone-meal. The effect was magical, and the crops of Potatos and Peas, where they would not grow before, were remarkable. Why were potash and phosphates so much needed? Because they were not in sufficient quantity in the cowyard-manure. The phosphates were drawn away with the milk. Manure from milch-cows, especially if largely fed on grass and roots, is greatly over-estimated. It may make crops grow, but the growth is worthless. Proof of this can be found in any cow-pasture where the manure is not spread. The grass grows freely enough, but the animals refuse to eat it, and eventually tussocks form, and the pasture is spoiled. Manure from full-grown, well-fed bullocks, is very different, for it is rich in phosphates and other nutritive or manurial properties. It is well, then, as I said before, to discriminate.

If weak manure is supplied to the garden—and I have often had it so weak that it would not ferment when moist—mix half a peck or more of good guano in a load. The mass will soon heat then, and eventually its value for the land will be a good deal more than doubled.

In conclusion the lecturer remarked:—Quick-acting nitrogenous manures, such as nitrate of soda and sulphate of ammonia (the former for light and dry, the latter for heavy and cold soils), should be applied early in the season to growing crops, never late in the autumn; phosphatic and potassic manures earlier still, before growth commences, and before dry summer weather sets in, or they cannot be appropriated, because not dissolved, by the crops they are intended to support. Chemical manures have often been condemned as worthless, when the fault rested with the users in simply applying at the wrong time what was really good for attaining the object in view.

ROSES.

TEA ROSES AT TAUNTON.

Some time ago observations were made upon the subject of the hardiness of Tea Roses, and in contravening my statement that these might be regarded as quite as hardy (if not more so) than hybrid perpetuals, a correspondent stated that in the neighbourhood of Taunton, a Rose amateur had dug up row after row of his Teas owing to their failure, while in the same garden was to be seen a fine bed formed of Maréchal Niel pegged down, which was spoken of in terms of high commendation. I ventured at the time to express my surprise about the Tea Roses, and could only account for it by the dampness of the climate, while I expressed my doubt as to the bed of Maréchal Niel being worth keeping; for as the flowers would hang their heads, nothing but the discoloured utside petals could be seen. As I had promised o assist at the judging of flowers at the Taunton show, I did not pursue the subject, hoping to have the opportunity of seeing for myself, for the owner of the garden in question had written to me, and I had arranged to visit him.

The garden in question is that attached to the villa residence of W. Herbert Fowler, Esq., and is one of those small suburban gardens where one is



Fig. 63.—Various stages in the development of leafy carpels in the Raspberry, beginning from the upper right-hand corner. (See p. 446.)

always sure, if the owner be a florist, to see something worth looking at. Had I not just seen a garden attached to a fine old country residence of which anything might have been made, but in which there was nothing to detain a visitor for ten minutes, where disorder and confusion were pro-



Fig. 61.—Median floral prolification in Raspberry. (See p. 446.)

minent? but here, in a garden not occupying one-fourth as much ground as the other, there was plenty to see, plenty to talk about, much to be learned, and where information was imparted as an expressed pleasure between guest and receiver, for Mr. Fowler is an enthusiastic grower, and he has both the ability and the will to make his garden worth looking at; and although the day was one of those uncertain ones, in which, however, a shower or two is pretty certain to fall, I thoroughly enjoyed my visit, short as it was.

My first question was about the bed of Maréchal Niel—and "there it is; but it is coming up—it won't do. It makes grand shoots, but the flowering is a failure. I am going to take up the plants, and plant them against a wall or trellis," so that I was not far wrong in my surmise with regard to it, at any rate, and so I hope little will be said to induce anyone to hold out such a false light as a bed of Maréchal Niel, for it must end in shipwreck.

When I looked at Mr. Fowler's Tea beds, I could not help thinking if he has had such losses he has not been slow in "repairing damages," for his plants looked vigorous and healthy, and not at all as if they had been planted to fill up vacancies. There were good blooms on the plants, and this year's shoots were vigorous and healthy; and, in truth, the loss he had sustained was purely a myth, for out of 400 he had only lost six, and considering what last winter was, this is a very small proportion; my only doubt was, as to whether the humidity of Taunton might militate against their successful growth, for I see by the British rainfall, "that the amount of rain at Taunton in 1888 was 36·22 inches on 201 days, here in Kent it was 28, on 152 days; while at Cambridge it was 17·19 on 180 days; but, notwithstanding this, and the fact that where there is so much moisture, frost, when it does come, is so much more hurtful, this loss is very small. I should add, that the only protection they have in winter, is a little Bracken placed amongst them; but that this is not a mere matter of theory is proved by the fact, that at the show held at Taunton, where Mr. Budd, of Bath, generally carries off the honours in the amateur class, Mr. Fowler succeeded in supplanting him this year, for he took the 1st prize for twelve Teas with some very excellent blooms; thus we have another instance which will help to destroy the "bogy" of the tender nature of Tea Roses—they are not killed or indeed materially injured by a cold climate, and it is manifest from this that they can withstand a humid one. While so many of our Rose exhibitors are withdrawing from the field of contest, it is always a pleasure to welcome one who is prepared to take the place of some of those who have withdrawn, and as I look to Mr. Lindsell to take a foremost place amongst the large amateur exhibitors, so I hope that Mr. Fowler may be found amongst those whose aims and ambitions are at present of a more moderate character, and besides having youth and means on his side, he has great enthusiasm and perseverance, and the manner in which he has transformed his garden in a couple of years testifies to this.

While only on the subject of Tea Roses, I may mention that I had a bloom sent to me some time since by Mr. Ben Cant, of Colchester, of the new Tea of Guillot's, Ernest Metz; the flower was a very beautiful one, the stalk very short and straight, and it was described by Mr. Cant, as holding itself up well, which I can readily believe, from the appearance of the stalk. It reminded me somewhat of the Catherine Mermet type, but I was puzzled about the colour, to me it seemed to be of the most delicate tinge of peach-blush, I can only find it in one catalogue, that of Ketten Brothers, of Luxembourg, and there it is described as of a tender carmine-rose with a deeper shade of the same colour in the centre. I may add, it has plenty of stuff in it, and is of good substance, for although it travelled by post, it was still a very presentable bloom after two or three days.

Wild Rose.

TRADE NOTICES.

Mr. Stephen Castle has been engaged as Manager to Messrs. A. Quertier & Co., nurserymen, Fordingbridge, Salisbury.

Mr. Samuel Jenks, after more than twenty-two years' service as Gardener to D. Larnach, Esq., Brambletye, Sussex, has commenced business as Florist and Landscape Gardener, at Bramley Wood, East Grinstead.

The Bulb Garden.

LILIUM LONGIFLORUM HARRISII.

Lilium auratum has had a great run, and is still very popular; but for pot-culture it seems as if L. Harrisii will be even more sought after, as by potting and starting the bulbs at different periods, plants of it may be had in bloom at Christmas, and from that time onwards till quite late in the spring. What has assisted to bring this Lily so much into favour is its adaptability for church decoration, for which purpose it is now much sought after, and for which it is well suited on account of the purity and great substance of its flowers.

Those who would like to have Lilium Harrisii in flower at the date mentioned above should obtain bulbs and pot them at once, consignments having lately arrived from Bermuda; and home-grown bulbs are ripe and ready for transit; but for early work I am of opinion that those imported are the better of the two. The soil most suitable for potting the Lily is the orthodox mixture of peat and loam, with a dash of sand, just to keep the mass open. The way in which these plants look best, and are the most useful for furnishing purposes, is to put one bulb in a pot, and as the roots require but little space, fine specimens may be grown in 48's, or at any rate in 6-inch pots. In potting, the bulbs should be nearly buried, and the soil made quite firm, when, if the soil is fairly moist on being used, no water will be required till the plants have made a start. To encourage this, it is a good plan to stand them in a close frame, or under the stage of a greenhouse, and cover them with cocoa-nut fibre or leaf-mould, which will conserve both moisture and warmth, and thereby indnce speedy root action, and after this takes place the pots must be removed to a position where gentle heat can be afforded, but at the same time they should have plenty of light to keep them from drawing. *J. S.*

English and Spanish Irises.

The two species of Iris, known botanically as I. Xiphioides and I. Xiphium and their varieties, being such as are now on sale in the dry state, deserve something better than casual culture. The formation of properly-prepared beds and careful planting, employing a variety of colours, is far preferable to putting the bulbs into mixed borders. Such of these Iris as have bloomed in gardens during the past summer should have been carefully taken up in August and dried, so as to have them ready for planting in October. The English varieties should only be transplanted every second or third year, and the Spanish every third year. Though these Iris will grow in almost any kind of soil or situation whereon a fair amount of sunshine falls, they succeed best in a mixture of sandy loam, leaf-mould, and thoroughly decomposed manure, and a somewhat easterly aspect. When the site is prepared, the best method to follow in planting is to make drills 9 inches apart, and to place the roots in these from 4 to 6 inches apart, and 2 inches deep. Where such Irids are planted later than the month of October, it will be a good plan to place a little coarse sand around each, because in a wet winter they are very liable to decay. In Holland, where the winters are more severe than here, a little Rush litter is placed over the beds during the most severe weather, and the same may be advantageous in this country. The only further attention these plants require is to keep them free from weeds by an occasional hoeing, as may be necessary.

These Irids were raised to the position of florists' flowers some years since, but they do not appear to receive such attention as they deserve in the matter of hybridising. Nevertheless, they seed freely when well grown, and seedling plants are readily grown and bloomed. The seeds ripen about the beginning of the month of August, and may be sown in drills early in the month of October. The soil should be light and sandy, and the aspect dry and sunny. During the next spring the young plants will spring up, and young corms, about the size of Indian shot seeds will form during the first summer. It is not judicious to interfere with them, beyond giving a mulching of decayed manure until the third year, when all should be taken up early in the month of August, and be treated as advised above for matured corms, with the result that they will bloom in the summer following. *William Earley, Ilford.*

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

LOBELIA CARDINALIS. — In answer to your correspondent "Pocahontas," I beg to say that the reason why this plant requires protection is because our winters are so variable. The variety I grow is called Queen Victoria, a decided improvement upon Cardinalis, and it is, I think, more hardy. One cause of failure arises from cutting the flower stalks in the autumn too low; the hollow stems catch the rain and cause the roots to rot. I find the trouble of taking up the roots in autumn and storing them in pots or boxes is well repaid by the numerous offsets obtained by division in spring. The plants do well in a cold pit plunged in ashes or cocoa fibre. They should not be allowed to get too dry at the roots, but damp and condensed moisture are more to be feared than a moderate degree of frost. I have recommended the plant for years as one of the most effective in a mixed border. It forms a beautiful contrast to Anemone japonica, Nicotiana affinis, white perennial Phlox, and Salvia patens. *W. R., Streatham Hill.*

PRESERVING APPLES IN SOIL.—During the discussion which arose at the gathering of the Fruit-growers' Association at the Crystal Palace on the 10th inst., which proved to be deplorably discursive; one gentleman arose, and referred very briefly to his method for preserving Apples in soil for a considerable period. Unfortunately, the topic aroused no interest, and no more was heard of it. All who have grown Apples, and have allowed a few fruits to fall, and become half-buried in soil, and totally in leaves and grass for several weeks, have later found these fruits not only very sound, but wonderfully fresh. It has thus in a perfunctory sort of way been shown over and over again that Apples can be kept in soil wonderfully well. The only thing wanting is evidence as to the keeping method proving applicable to a large quantity of fruit. The speaker in question stated that he placed his fruits on the ground, not in a trench, covered a layer with clean-sifted soil, then added a second layer, and so on, until a perfect ridge of fruits was formed, and then the whole was covered up with soil. Beyond that, no further information was obtained. If really successful, and it is but a system of ridging Apples for the winter rather than pitting them like Potatos, it is obvious that the plan is as available to the poorest as to the richest. I suggested clean sand from a pit as better than soil, but the speaker stated to me that the ordinary soil seemed to retain the peculiar flavour of the fruits better than sand did. Any gardener having Apples can test the plan so far as it is thus known, but I anticipate that the fruit should be stored as soon as gathered from the trees. Assuming that the plan is of a meritorious nature, what a boon would it be could we keep Pears for a couple of months or so, later than is possible now. After the end of November our Pear stocks are terribly thinned, and after Christmas comparatively few are left fit to eat. If the earth-storing system would answer, so far as Pears are concerned, how many of the fine fruits which so prematurely decay might be kept sound till required for use. *A. D.*

BEGONIAS AS BEDDING PLANTS.—At Knowle Hall, near Birmingham, the seat of F. A. Everett, Esq., tuberous Begonias have proved to be valuable decorative plants out-of-doors. On the terrace fronting the mansion there is a rather narrow border, Ampelopsis Veitchii being planted on the wall supporting the terrace, and the plants have grown over the top of the wall, and form a richly-coloured background for the tuberous Begonias, amongst which are a large proportion of shades of yellow, including doubles, and all the plants, seedlings of this year. The softer shades of colour have considerably enhanced the beauty of the bed; and with the Begonias rising from a carpet of Dactylis glomerata variegata, and the border fringed with Iresine Herbstii, and fronted with a row of Mesembryanthemum cordifolium variegatum, a very charming effect has been produced, decidedly more pleasing than if all brilliant-coloured Begonias had been used. Mr. Comfort, the head gardener, is well known in the Midlands as a very successful Chrysanthemum grower, and has now a large quantity in pots, which have just been housed. There is a bed here of Dracæna indivisa, which Mr. Comfort intends shall remain through the winter. It contains eighteen plants about 2 feet or so high, and the plants will be tied up and protected with Fir branches, or some other material. Last winter a plant of this Dracæna stood out at Knowle Hall with very little protection, and Mr. Comfort has determined to try the hardiness of this Dracæna. *W. D.*

ARISTOLOCHIA RIDICULA.—Not long ago I saw the above-mentioned plant at the Royal Winter Gardens, Edinburgh, in flower. It well earns the name ridicula, for when seen at a distance it looks like a flitter-mouse, but close at hand it is one of the most interesting and beautiful of Aristolochias. The plant grows best where it can obtain the greatest amount of light and sun possible, therefore, a place near the roof is suitable. Cuttings strike readily in a good bottom-heat. *J. K. Budde.*

TURF WALKS IN KITCHEN GARDENS.—In very few kitchen gardens are turf walks found, especially such broad firm walks as are to be seen in the large walled garden at Hackwood Park. Very many gardeners probably are prejudiced against turf for walks. Some doubtless believe that turf presents peculiar difficulties when so employed, but evidently a visit to Hackwood at any time would dispel that illusion. The garden is of about 6 acres, surrounded by a high wall, is oblong in form, and has three doors on either side, and entrance at end. All manure is carted to these doors outside, and is then wheeled on planks over the turf on to the quarters. Even in the wettest of weather, the turf seems to be always firm; whilst in these days of mowing-machines, one turn a week in the most growing of weather suffices to keep the grass short and neat. Edging the sides takes rather more time, but still the saving as compared with the labour involved in weeding, sweeping, rolling, and otherwise attending to gravel-walks, and the trimming of edgings, is great. A very broad grass-path, some 15 or more feet in width, runs right up the centre of the garden, and that is intersected by four other paths, whilst there are broad side walks also. The centre-walk and the cross-walk at the western end are bordered with broad margins of flowers—indeed, in conjunction with the superior quality of the vegetable crops, and the exceeding cleanness and neatness of the entire area, the garden is one of the most pleasing and enjoyable I have ever been in. I would strongly advise all who may have doubts as to the adaptability of turf for kitchen garden walks to visit Hackwood Park. *A. D.*

EFFECTS OF LIGHTNING.—My attention was lately directed to a plant of Virginian Creeper (Ampelopsis hederacea), growing against the vicarage wall at this place, which suddenly drooped, and is evidently dying. The plant grew on a south aspect, somewhat protected by a projecting porch, and trees on the northern and eastern sides. Meantime another huge Virginian Creeper growing against a high house some 300 yards distant, looking southward, showed identical symptoms. Upon close examination, I observed that the heartwood of the branches was black, and as very vivid lightning prevailed a day or two previously, I have a notion that they were injured by it. Apart, however, from the fact of these two examples having received injury, there are other facts which may be worth recording. Against the same vicarage, and upon the same side, and growing upon a large bow, and with less protection, grows a strong, young, or three-year-old plant of Ampelopsis Veitchii, which has received no injury whatever. Whilst again, upon the other house, where one A. hederacea was totally destroyed, another very large plant reaching up to about 30 feet in height, but on the north side of the house, shows no sign of injury whatever. Though the inference is that the electric

fluid, which struck both the plants, came from due south, it is difficult to explain how A. Veitchii escaped on the one house, it being also on the south side, even though the northern aspect enjoyed by the A. hederacea on the other house may have been its safeguard. Has A. Veitchii ever been seen to suffer in this regard, or does it enjoy a yet unexplained immunity in this respect? *William Earley, Ilford.*

FREESIA REFRACTA ALBA FROM SEED.—The best time to sow the seed of this Freesia is during February or March, it being slow in germinating, and plants potted off in April or May, will bloom the following winter. Sow in a pan or pot properly drained and filled with a mixture of equal parts sifted leaf-mould and loam, scatter the seed thinly, and cover with about ½ inch of soil, and put a square of glass over the pot. Place the pots in a hotbed or stove, and when the plants are up they will still need warmth to assist them, and this they should have till the end of May or later, after which any ordinary frame will be warm enough for them, but to encourage growth there it is necessary to sprinkle them overhead, and close the lights during the afternoon. Those who wish to have plants in flower within the next three or four months should obtain tubers at once, and pot them, either in 48-sized pots or 32's, placing from six to twelve tubers in the one or the other, when they should be stood in some warm house to give them a start. As soon as the tops can be seen through the soil, it will be necessary for them to be put on to a shelf near the glass, where the growth made will be sturdy, and liquid manure should be afforded occasionally. *J. S.*

ONIONS.—Judging by what I saw at Basingstoke, we shall see plenty of wonderfully fine Onions this autumn. At the Basingstoke show, Mr. Kneller, of Malshanger gardens, staged a dozen of the new variety, Ailsa Craig, a product, apparently, of White Spanish and Giant Rocca, raised from a spring sowing, which weighed 30 lb. All were very handsome bulbs, having weight in their great depth as well as breadth. Mr. Bowerman, of Hackwood Park, had a dozen bulbs of Rousham Park Hero, weighing 20 lb. These, if flatter, were brighter than the heavier bulbs from Malshanger, and, for the kind, exceedingly fine and handsome. These huge bulbs, however, grown under conditions of culture which could not be afforded to main crops, rarely keep well—indeed, are often half-rotten by Christmas. It is doubtful whether they serve any better or more useful purpose than to win prizes. The conditions of Onion competitions are such in these days that only the biggest will win, and therefore gardeners grow these monsters, although they are of little further service. But it must not be assumed that gardeners in the production of these show bulbs expend all their resources, so far as Onions are concerned. Mr. Bowerman has at Hackwood Park one of the very finest and handsomest main crops of Onions I have ever seen. The bed consists of thirty-nine rows, each of 40 yards long, the bulbs large, solid, and thickly set; indeed, throughout, a fine even sample, such as any gardener might be proud to show. These are the useful bulbs for the satisfying of winter needs. Veitch's Main Crop of the white Spanish type, and Bedfordshire Champion, a reddish globe-shaped variety, were specially good, clean samples. Such a stock as this will give an abundance of useful bulbs for the whole winter, long after the show bulbs grown in a mass of manure are rotten. *D.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

Oct. 14.—A largely attended meeting of the committee took place at Anderton's Hotel, Mr. E. C. Jukes in the chair; and Mr. A. C. Hill being present as the representative of the De Beauvoir Town—an affiliated—Chrysanthemum Society.

The Hon. Secretary reported that he had paid the sum of £84 2*s.* in prizes awarded at the September show, and in addition six medals of the Society. Mr. Holmes also reported that, at a convention of American florists recently held at Philadelphia, it was resolved to form a Philadelphia Chrysanthemum Society, and that the rules of the National Chrysanthemum Society had been applied for as a guide to its formation. Mr. Harman Payne, the corresponding Foreign Secretary, reported that he had been in communication with various growers of the Chrysanthemum in the United States, and that it had been resolved to form a National Chrysanthemum Society for America, which would hold an exhibition annually in one or other of the States, not confining their operations to any particular one. He also stated that he had experienced great difficulty in getting a complete list of the varieties of Chrysanthemum raised in America; but by the formation of this Society the work will be greatly facilitated; that exhibitions in celebration of the centenary of the Chrysanthemum would take place in various parts of France, and the promoters invited the co-operation of English growers; that the Scottish Horticultural Association had arranged for a centenary show in Edinburgh in November; also that the Société Royal d'Agriculture et de Botanique of Ghent had arranged to hold an International Exhibition of Chrysanthemums at Ghent on November 24, and had invited the following members of the committee to act upon the jury:—Messrs. Harman Payne, L. Castle, R. Dean, G. Gordon, and W. Holmes. The authorities in Ghent were very desirous that English growers should exhibit on that occasion.

A vacancy having arisen on the General and Floral Committees, in consequence of Mr. Gilbey leaving London, Mr. Bruce Ironside was elected to the former, and Mr. W. Boyce to the latter. Samples of silver and bronze medals having been submitted from Mr. J. A. Restall, Broad Street, Birmingham, it was resolved that a future supply should be obtained from him.

Mr. G. Gordon reported on behalf of the Catalogue Committee, that they had prepared a supplementary catalogue on similar lines to those already observed, and copies would be supplied by the Secretary. Mr. Holmes reported that he had recently visited Hull, and found the arrangements of the provincial show to take place there on November 21 quite satisfactory; entries would be received by Mr. Holmes up to three days before the exhibition; that Messrs. J. Wright and G. Gordon had promised to read papers at the Conference, of which Mr. E. C. Jukes would be the President. It was resolved that the members of the Floral Committee present at Hull should be empowered to make awards to new varieties of Chrysanthemums. It was also resolved that the members of the committee invited to act on the jury at Ghent should be accredited as the representatives of the Society; Mr. Harman Payne to communicate this resolution to the authorities at Ghent. The Secretary reported the names of members of the committee who had consented to act as stewards at the Aquarium show on November 12 and 13. It was resolved that the Floral Committee should dine together on December 11. The meeting closed with a vote of thanks to the Chairman.

WOOLHOPE FUNGUS FORAY.

Twenty-one years ago the Woolhope Club organised its first "Foray amongst the Funguses," as it was called, the primary object being to collect specimens of edible fungi for cooking and serving at the annual dinner. Subsequently and speedily the scope of the forays was widened, so as to include all the larger fungi, especially the Hymenomycetes, and has been continued with more or less success down to the present day. The total number of the species of British Agaricini may be taken as 1334, and of these 483 have been collected in Herefordshire, as recorded in the new *Herefordshire Flora*. This is, as yet, the largest number recorded for any British county, that of Essex having reached only 410.

The Woolhope excursions for this year commenced on October 1, and the place of assembly was Ludlow, in Shropshire, with the weather favourable, but the ground and the woods on this side of the kingdom were too dry to give any promise of success. The party was a smaller one than usual, scarcely exceeding ten on any of the days, whilst the lack of "game" represented also a lack of enthusiasm. Amongst those who took part in the explorations of the week were the Rev. Canon du Port, Rev. J. E. Vize, and Messrs. Bucknall, Phillips, Plowright, and M. C. Cooke.

Tuesday's excursion was made in the woods of Downton Castle, over ground which had not been visited by the Club for many years; but it soon became painfully manifest that the old success was not to be realised, and after patient and diligent search for about four hours, only about eighty species could be enumerated, and of these only one or two individuals had been seen. Two old and dried specimens of Strobilomyces only were found, and this has generally been a species of certain occurrence somewhere during the Woolhope week. Marasmius Hudsoni was rather plentiful on Holly leaves, but scarcely anything else of interest.

The Wednesday's excursion was made in the woods of Downton Hall, now for the first time visited by the Club. The excursion was in itself a pleasant one, but as barren of results as the previous day had been, only sixty-eight species being determined, of which the most interesting was Agaricus (Inocybe) hæmactus, a species first found at Credinhill several years ago, and now seen again for the second time. Although the total number of species found was below that of the Tuesday, there was a larger number of interesting species, such as Agaricus pelianthinus, calamistratus, acerosus, Friesii, Marasmius erythropus, and Russula Linnæi.

The Club day, Thursday, was occupied by a morning excursion to Dinmore, where about sixty species were determined between 10 A.M. and 2 P.M; but this number had to be made up by recourse to microscopical species. The annual dinner afterwards, at the "Green Dragon" hotel, was characterised by no especial feature, and Hydnum repandum was the fungus dish cooked "from the Club recipes," and served round to the assembled guests.

In the evening, at a *conversazione* held at the house of T. Cam, Esq., one of the past presidents of the Club, a very large party of ladies and gentlemen were assembled, and papers read by E. C. Phillips, F.L.S., "On the Occurrence of the great Black Woodpecker in Great Britain;" by Rev. J. E. Vize, on "The Breathing System of Flowering Plants and their Allies;" and by W. Phillips, F.L.S., "On Popularizing the Knowledge of Edible and Poisonous Fungi," which latter was followed by a lively and interesting discussion, mainly on the proposal to recognise a few definite popular names for common edible fungi, and to desseminate information concerning them as widely as possible, especially amongst rural populations.

The last day "of this eventful history" was devoted to Stoke Edith Park, and as park lands are perhaps the driest and most unproductive of any this year, it will not be surprising to learn that the record scarcely exceeded fifty, although more than half of these were pastoral species, which had not been met with on previous days. There is nothing more left to be recorded, save, after a careful comparison of all the lists, it may be that one or two species have been added to the county catalogue, but this is very doubtful. Reports have reached us of a plentiful harvest of fungi in Devonshire, and of a profusion in the North, but our own experiences in Essex, Shropshire, Herefordshire, Surrey, &c., during the past two or three weeks have satisfied us, that, as a general rule, the present autumn has been unusually barren of fungi, no better, if not worse than last year. *M. C. C.*

FUNGUS HUNT IN WARWICKSHIRE.

The Sutton Coldfield Vesey Club organised a half-day's excursion to Trickley Coppice, on Saturday afternoon, October 5, for the collection of fungi. The whole time spent upon the ground was something like two hours, and during the entire period the rain was falling sharply and persistently, so that, at its termination, all the unfortunate excursionists, numbering about five-and-twenty, presented an unenviable appearance as of drowned rats. Such an exhibition is not a novelty to fungus hunters, but it is one which has not been experienced at any organized excursion for the past two or three years. However, there was one redeeming feature, that the number of species collected was larger, proportionately, than at any excursion of the present year. The ground was sufficiently wet before the downfall began, and at its close was much more than sufficiently soft. The conductors on this occasion were Messrs. J. E. Bagnall, Grove, and M. C. Cooke, who prepared a list of the species determined, and reported a total of upwards of sixty, which was a fair average for almost any ordinary season, of thirty species per hour, but a high average for a season when about ten species per hour has hardly been exceeded. The collection included many very common species, the edible portion of which were selected and cooked under the superintendence of Mr. Grove, and formed an addition to the inevitable tea at the end of the afternoon. It may be of interest of mycophagists to learn that of the species eaten were Paxillus involutus and Lactarius turpis, two which certainly do not look very inviting when

gathered, but, as here proved, perfectly harmless, and, if not particularly delicate, at least edible when more attractive viands are absent. The list of the afternoon's spoils included seven species of Russula, five species of Lactarius, eighteen white-spored Agarics, and some eight or nine Agarics with coloured spores. Whether any additions were made to the list recorded of the Warwickshire fungi cannot be determined at once, but no individual species of particular and special interest was secured. Had the weather been more propitious, there is no doubt the list would have been materially increased. *M. C. C.*

ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

The annual meeting of the members of this Society was held on Saturday evening, the 12th inst., in the Music Hall Buildings, Aberdeen. Mr. James Murray Garden presided, and there was a large attendance. The annual report contained the following remarks. The directors have pleasure in reporting to the members that the Society continues to carry out the objects for which it was formed, viz., the encouragement of all efforts to improve the knowledge of scientific horticulture, and to extend its practice in Aberdeen and the north of Scotland. The annual floral *fête* was held in the Duthie Public Park, Aberdeen, on Thursday, Friday, and Saturday, August 22, 23, and 24, and proved to be, in the opinion of the judges, one of the most successful of the Society's exhibitions from an exhibitors' point of view.

The financial surplus amounted to £26 0*s.* 4*d.*, which, added to last year's balance, makes £125 4*s* 2*d.* to the credit of the Society. In terms of the remit from last meeting, the directors, by a majority of nine votes to three, beg to recommend that a summer and an autumn show be held in 1890, and a spring show in 1891. The best thanks of the Society are due to the Aberdeen Town Council for granting the use of the Duthie Park, to Lord Provost Henderson, Lord Saltoun, Mr. Esslemont, M.P., Mr. George Arbuthnot Leslie of Warthill, ex-Dean of Guild Walker, and Councillor Lyon, for their services in connection with the opening of the fête, and to the ladies and gentlemen who have contributed to the prize fund during the year.

After the moving of the adoption of the report and some remarks by Baillie Crombie, Mr. Cocker moved that a summer and an autumn show be held in 1890, and a spring show in 1891. A long discussion took place, and on a division, nineteen supported Mr. Cocker's motion, and sixteen Mr. Robson's, the former thus becoming the finding of the meeting. The Lord Provost was elected honorary President, and the vice-Presidents were re-elected with the addition of Mr. Esslemont, M.P. The honorary directors were re-appointed, and the following gentlemen were elected acting directors:—Chairman, Mr. Murray Garden; vice-President, Mr. A. Robson; the remainder of the acting directors being taken from the local professional gardeners, market gardeners, nurserymen, &c., of the district.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending October 14, is furnished from the Meteorological Office:—

"The *weather* continued unsettled, with frequent falls of rain, during the greater part of the period, but in most parts of the kingdom some fine bright intervals were experienced. Thunder and lightning occurred in some parts of Scotland during the early days of the week, and also at some of our southern stations on the 11th and 12th.

"The *temperature* has again been below the mean, the deficit having ranged from 2° in 'England, N.E.,' to 4° or 5° in most other districts. The highest of the maxima, which were registered in most places on the 10th, ranged from 55° in 'Scotland, N.,' to 62° in 'England, S.W.,' and the 'Midland Counties.' The daily maxima did not, as a rule, differ materially from the normal for the time of year; but the minima were, with few exceptions, decidedly low. The absolute minima for the week were recorded generally either on the 13th or 14th, when the thermometer fell to between 24° and 29° in Scotland, to 30° in Ireland, and to between 29° and 34° over England. In the 'Channel Islands' the temperature did not fall below 40°.

"The *rainfall* has been rather more than the mean in 'England, N.E.,' 'England, S.,' 'England, N.W.,' 'Ireland, N.,' and the 'Channel Islands,' and about equal to it in the west and east of Scotland, but in all other districts a deficit is shown.

"*Bright sunshine* has been more prevalent than it was last week in most places. The percentage of the possible amount of duration ranged from 26 in 'England, N.E.,' and 29 in Scotland, to 46 in 'England, S.W., 50 in the 'Channel Islands,' and 51 in England, E.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending October 14.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 —	35	13	+ 155	+ 17	3 —	190	32.3	29	23
2	3 —	37	16	— 39	+ 22	0 av.	156	21.3	29	30
3	2 —	38	3	— 34	+ 11	6 +	143	19.3	26	28
4	5 —	48	10	— 55	+ 127	3 —	147	21.0	51	32
5	5 —	51	18	— 49	+ 79	4 —	137	22.4	43	30
6	4 —	52	4	— 15	+ 76	3 +	139	19.8	42	32
7	4 —	41	11	+ 9	— 15	0 av.	163	32.3	29	31
8	4 —	39	3	+ 9	+ 1	1 +	149	25.5	39	30
9	5 —	47	3	— 103	+ 90	1 —	150	26.7	46	37
10	3 —	41	8	+ 21	— 47	1 +	182	30.7	39	26
11	5 —	44	10	— 18	— 5	2 —	161	28.2	42	33
12	4 —	70	0	+ 64	— 16	6 +	155	20.7	50	42

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

Obituary.

Auguste Frederic Lendy.—We regret to record the death, on the 10th inst., at Riverside House, Sunbury-on-Thames, of Auguste Frederic Lendy, late of Sunbury House, and formerly Captain of the French Staff, and Major of the 4th Middlesex Regiment, in his sixty-fourth year. The deceased gentleman was a Fellow of the Linnean Society, and was for some years intimately connected with the Royal Horticultural Society, and was one of the Vice-Chairmen of the Floral Committee in the year 1888. He was a well-known cultivator of Orchids, and his collection contained many rare plants, which have been referred to at various times in these pages. The funeral took place at Brookwood, near Woking, on Tuesday, October 15, last.

MARKETS.

COVENT GARDEN, October 17.

Trade dull; supplies good; prices unaltered. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1	6- 5 6	Peaches, per doz.	4	0- 8 0
Cobs, per 100 lb.	110	0- ...	Pine-apples, Eng., lb.	1	6- 3 0
Grapes, per lb.	0	6- 2 6	—St. Michael, each	2	0- 6 0
Lemons, per case	21	0-45 0	Plums, ½-sieve	2	6- 5 0

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beet, red, per dozen	1	0- 2 0	Mustard and Cress, punnet	0	4- ...
Carrots, per bunch	0	6- ...	Onions, per bunch	0	5- ...
Cauliflowers, each	0	3- ...	Parsley, per bunch	0	4- ...
Celery, per bundle	1	6- 2 0	Shallots, per lb.	0	6- ...
Cucumbers, each	0	6- 0 9	Spinach, per bushel	2	6- ...
Endive, per dozen	2	0- ...	Tomatos, per lb.	0	9- ...
Herbs, per bunch	0	4- ...	Turnips, per bunch, new	0	5- ...
Leeks, per bunch	0	3- ...			
Lettuce, per dozen	1	6- ...			
Mushrooms, punnet	2	0- ...			

Potatos are about the same price as previously quoted. Trade better. *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6	0-18 0	Ferns, in var., doz.	4	0-18 0
Asters, per dozen	4	0- 8 0	Ficus elastica, each	1	6- 7 0
Begonias, dozen	4	0-12 0	Foliage plants, various, each	2	0-10 0
Chrysanth., dozen	6	0-15 0	Fuchsias, dozen	3	0- 9 0
Cyperus, per dozen	4	0-12 0	Hydrangea, per doz.	9	0-18 0
Dracæna terminalis, per dozen	30	0-60 0	Marguerites, doz.	6	0-12 0
— viridis, per doz.	12	0-24 0	Mignonette, doz.	3	0- 6 0
Ericas, various, doz.	8	0-18 0	Palms in var., each	2	6-21 0
Euonymus, in var., per dozen	6	0-18 0	Pelargoniums, scarlet, per dozen	4	0- 6 0
Evergreens, in var., per dozen	6	0-24 0	Solanums, per dozen	6	0-12 0

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2	0- 4 0	Maiden Hair Fern, 12 bun.	4	0- 9 0
Asters, English, bun.	4	0- 8 0	Mignonette, 12 bun.	1	0- 4 0
Bouvardias, per bun.	0	6- 0 9	Pelargoniums, 12 spr.	0	8- 1 0
Calla æthiopica, 12 bl.	3	0- 6 0	— scarlet, 12 spr.	0	4- 0 6
Camellias, 12 blooms	3	0- 6 0	Primulas, double, 12 sprays	0	9- 1 0
Carnations, 12 blms.	1	0- 2 0	Roses, Tea, per doz.	0	6- 1 6
Chrysanth., 12 bun.	3	0- 9 0	— coloured, dozen	2	0- 4 0
Chrysanth., 12 blms.	0	6- 3 0	— red, per dozen	0	6- 1 0
Dahlias, 12 bun.	2	0- 4 0	— Safrano, dozen	0	6- 1 0
Eucharis, per dozen	3	0- 5 0	Stephanotis, 12 spr.	3	0- 6 0
Gaillardias, 12 bun.	2	0- 4 0	Sunflowers, various, per 12 bun.	3	0- 6 0
Gardenias, 12 blooms	2	0- 4 0	Sweet Peas, 12 bun.	2	0- 4 0
Gladioli, 12 bun.	6	0-12 0	Tuberoses, 12 blms.	0	6- 1 0
— 12 sprays	1	0- 1 6	Violets, 12 bun.	1	3- 2 0
Heliotropes, 12 spr.	0	3- 0 6	— French, bun.	1	6- 2 6
Lilac, white, Fr., bun.	6	0- 7 0			
Lilium, var., 12 bl.	2	0- 6 0			
Marguerites, 12 bun.	3	0- 6 0			

Orchid bloom in variety; fairly good supply, for this time of year.

SEEDS.

London: *Oct.* 16.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report to-day's market quiet. One or two deals have taken place in new French red Clover seed at small figures. Winter Tares keep firm at the moderate rates now ruling. For Kœnigsberg spring Vetches, prohibitory high prices are asked. There is an inquiry for fine black Rape seed. Mustard, both brown and white, is steady. Fine blue Peas are getting into narrow compass. The new Haricot Beans are good and cheap, and attract attention. Choice new French Millet is obtainable on exceedingly moderate terms.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended October 12:—Wheat, 29*s.* 4*d.*; Barley, 29*s.* 8*d.*; Oats, 16*s.* 8*d.* For the corresponding week in 1888:—Wheat, 30*s.* 11*d.*; Barley, 29*s.* 1*d.*; Oats, 16*s.* 4*d.*

FRUITS AND VEGETABLES.

Spitalfields: *Oct.* 16.—Savoys, 1*s.* 9*d.* to 3*s.* per tally; Cabbages, 1*s.* to 2*s.* 6*d.* do.; Cauliflowers, 4*s.* to 6*s.* do.; Spinach, 9*d.* to 1*s.* per bushel; Brussels Sprouts, 1*s.* 6*d.* to 1*s.* 9*d.* per half-sieve; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Greens, 5*s.* to 6*s.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* per do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; do., 22*s.* to 40*s.* per ton; Parsley, 1*s.* to 1*s.* 6*d.* per dozen bunches; Beetroots, 4*d.* to 6*d.* per dozen; Parsnips, 6*d.* to 9*d.* per score of 22; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Leeks, 1*s.* 6*d.* to 2*s.* do.; Mustard and Cress, 1*s* to 2*s.* per dozen baskets; Cucumbers, frame, 1*s.* 6*d.* to 2*s.* per dozen; Horse Radish, 14*s.* to 16*s.* per dozen bundles; Celery, 4*d.* to 10*d.* per bundle; Cos Lettuce, 4*d.* to 8*d.* per score; Spanish Onions, 7*s.* per case; English Onions, 6*s.* to 7*s.* per cwt.; Dutch, Onions, 5*s.* to 6*s.* per bag of 110 lb.; Belgian Onions, 5*s.* 3*d.* to 5*s.* 9*d.* do.; English Apples, 2*s.* to 4*s.* per bushel; Pears, 2*s.* to 3*s.* per half-sieve; English Tomatos, 3*s.* to 4*s.* 6*d.* per 12 lb.; Foreign Tomatos, 1*s.* to 1*s.* 6*d.* per box; Bullaces, 1*s.* 6*d.* to 2*s.* per half-sieve; Pruen Plums, 3*s.* 6*d.* to 4*s.* do.

Stratford: *Oct.* 15.—The market has been well supplied with all kinds of produce during the past week, and with a good attendance of buyers a brisk trade was done at the undermentioned prices:—

Cabbages, 1*s.* 6*d.* to 3*s.* per tally; Savoys, 4*s.* 6*d.* to 6*s.* do.; Cauliflowers, 4*s.* to 7*s.* do.; Turnips, 35*s.* to 45*s.* per ton; Carrots (household), 35*s.* to 40*s.* do.; do. (cattle feeding), 24*s.* to 27*s.* do.; Mangels, 14*s.* to 18*s.* do.; Swedes, 18*s.* to 22*s.* do.; Onions, Dutch, 6*s.* 3*d.* to 6*s.* 6*d.* per bag; do., Oporto, 5*s.* to 7*s.* per case; Apples, English, 2*s.* 6*d.* to 6*s.* per bushel; Pears, 3*s.* to 9*s.* do.; Walnuts, 10*s.* to 12*s.* 6*d.* per bag.

POTATOS.

Borough and Spitalfields: *Oct.* 15.—Moderate supplies on offer, and a steady trade with very slight change if any in prices. Early Rose, 40*s.* to 50*s.*; Regents, 55*s.* to 75*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 45*s.* to 70*s.*; Imperators, 45*s.* to 65*s.* per ton.

Spitalfields: *Oct.* 16.—Quotations: Hebrons, 50*s.* to 65*s.*; Early Rose, 50*s.* to 60*s.*; Imperators, 50*s.* to 70*s.*; Regents, 60*s.* to 80*s.*; Magnums, 50*s.* to 60*s.* per ton.

Stratford: *Oct.* 15.—Quotations: Magnums, light, 55*s.* to 70*s.*; do., dark, 47*s.* 6*d.* to 50*s.*; Hebrons, 50*s.* to 70*s.*; Imperators, 55*s.* to 65*s.* per ton.

NOTICES TO CORRESPONDENTS.

Ampelopsis: *A. M.* The fine colouring of the leaves is a question of sunlight to a great extent, but conditions of soil would probably have some influence also.

Barkerias, Stanhopeas: *Alert.* Temperature at night, for these in the winter, need not exceed 58° to 60°, and by day 10° to 15° higher; and as both species are evergreen, total dryness at the root is to be deprecated. Overhead syringing is also to be avoided, and only a moderate amount in the air, obtained by sprinkling the paths, &c. See our Orchid Calendar this week, p. 440.

Books: On the Cultivation of Ferns: *Southampton. Ferns and Lycopods*, by Mr. B. S. Williams, Victoria Nurseries, Upper Holloway, N.

Carpet Bedding: *Ingleton.* There is a manual on this subject, as carried out at Hampton Court by A. Graham; and designs for carpet beds, and lists of plants to fill them, were published by Messrs. H. Cannell & Son, Swanley, Kent, and who would probably supply them on application.

Endive: *Enquirer.* Yes, the plant is blanched by means of pieces of tile or slate placed over it when full-grown. The pieces should be roughly octagonal or circular, and not quite so large as the plant when the latter is spread out. The green fringe thus left round the white central part adds to the appearance of the plant when it is cut, although it may not be put into the salad-bowl. This mode of blanching does not cause rotting, if the covering stays on the plant only as long a time as is necessary to thoroughly blanch it.

Eucharis: *L. D.* Bad culture, followed by the mite. There is, we think, no cure for the mite when it has once got a good hold. Treat the plant as a warm-house evergreen bulb, and never withhold water to any great extent with the idea of resting them.

Fruit Growing: *H. S. J.* There is no work which will give what you require. If, as you say, you have had no experience in fruit growing, you should be careful how you act.

Gardeners' Orphan Fund: *A. S.* If you apply to the secretary of the Fund, Mr. A. F. Barron, Royal Horticultural Society, Chiswick, he will, no doubt, supply what you require.

"Horticultural Advertiser:" *Florist.* This paper is published by Messrs. J. R. Pearson & Sons, Chilwell, Notts.

Hot-water Pipes in Cellar: *G. H.* Cover them with asbestos cloth, or pack them in asbestos wool, enclosing the whole in a wooden trough. Failing these non-conductors of heat, pack dry hard-wood sawdust round the pipes to a thickness of 6 inches.

Insects: *W. H.* The creature found on a damp wall in a propagating-pit, apparently feeding on the green slimy vegetable matter just above a water-tank, is a planarian worm (Bipalium Kewense, or a closely allied species), most probably imported from Tropical America. The known habits of the group are carnivorous. *I. O. W.*

Lilies: *G. A.* Dig deeply, but do not bring up the subsoil, if this has not been previously disturbed, but loosen it only. Mild manure will do good, but it need not touch the bulbs. Six inches is deep enough. Be careful to make the soil firm before planting, and especially when closing it in around the bulb. Few bulbs do any good in loose soil. Sand not essential, unless there happen to be slight decay in the scales of the bulbs, or the soil is heavy.

Mis-shapen Chrysanthemum: *A. R. C.* The cause is not always to be discovered in the present state of our knowledge of the subject. It is sometimes due to other than the causes given in our reply last week; to over-manuring; at other times to insect agency; to minute funguses; and sometimes it is quite inexplicable, for want of fuller knowledge of the conditions under which the affected plants have been grown. It may not occur again to your plants.

Names of Fruits: *An Old Subscriber.* Grape Madresfield Court; *C. R. & Co. Pear:* Emile Bivort—*H. R. B.* 1, Thompson's; 2, Beurré Superfin; 3, Marie Louise; 4, Pius the IX.—*Apples:* 1, King of the Pippins; 2, not recognised.—3, *H. H. F.* 1, Swan's Egg; 2, Duchess of Angoulême; 3, Carter's Beurré; 4, Beurré Diel; 5, Bergamote Esperen; 6, Winter Nelis.—*A. B.* 1, Dutch Codlin; 2, Blenheim Orange; 3, Mère de Ménage; 4, Cellini.—*J. H., York. Apple:* not recognised.—*J. Harding.* Apples very pretty and good; 2, is Fearn's Pippin; the other two not known.—*C. C.* 1, Fearn's Pippin; 2, Cellini.—*James Geddes.* 14, Cox's Orange Pippin; 24, Cockle Pippin; 10, Glou Morçeau; 6, Doyenné Boussoch.—*R. & C.* 1 and 5, not recognised; 3, Golden Noble; 4, Alfriston; 6, Blenheim Orange; 8, Flower of Kent; 9, Dumelow's Seedling; 10, Lord Lennox.—*G. R.* 1, Fearn's Pippin; 2, American Mother; 3, Tower of Glamis; 4, Cornish Gilliflower; 5, Hambledon Deux-ans; 7, King of the Pippins.

Names of Plants: *G. Southwell.* 5, Platanus cuneata; 6, Pyrus aria.—*J. V.* Fuchsia procumbens. *J. H. P.* 1, Athyrium filixfœmina coronans; 2, Polypodium dryopteris; 3, Athyrium filixfœmina cristatum; 4, Lastrea dilatata; 5, Polystichum angulare proliferum; 6, Polypodium vulgare hibernicum.—*A. P. C.* 1, An Eria, send better material; 2, Peltionia Davoneana; 3, Probably a Pitcairnia, specimen insufficient; 4, Specimen insufficient.—*S. & Sons.* Veronica macroura.—*A. E. S.* Chrysanthemum uliginosum.—*E. H. B.* Coccoloba platyclada.—*A. W.* Adiantum gracillimum, a dense form.—*A. R. S.* 1, Chlorophytum viviparum; 2, Aster dumosus; 3, Aster sps.; 4, Aster Reevesi; 5, A. Novæ Angliæ; 6, Euonymus europæus; 7, Olearia Haasti; 8, Nephrolepis tuberosa; 9, Selaginella Wildenovi.—*T. W. R.* Mespilus Smithii, D.C.—*Mungo Chapman.* 1, Euphorbia (flowers needed); 2, Saponaria officinalis; 3, Artemisia Ludwigiana; 4, Hypericum patulum; 5, Aster cordifolius; 6, 7, Aster Novi-Belgii.

Peach Leaves: *J. Sheppard.* The leaves were attacked by a fungus, Uromyces amygdali. We know of no remedy. Burn all the affected leaves you can.

Plums: *J. H. B.* The round Plum you have, which comes into use a week before the Victoria, is not Coe's Golden Drop, which is an elongated yellow Plum, with crimson spots on the sunny side, like the specimens sent some time since to this office.

Potatos: *P. H.* Perhaps you allow the colour of the skin to influence your selection over-much. Some of the most prolific varieties—and that, after all, is the chief point, if accompanied by good flavour, are purple; for instance, Vicar of Laleham and The Dean. As a rule, the flavour of a purple-skinned tuber is fuller than that of a white-skinned one, many of which are as tasteless as Rice. Plant shallow, and give a good space between the sets.

The Genus Primula: *T. F. D.* Dr. Ferdinand Pax's Monograph was published in the *Botanisches Jahrbuch*, and, so far as we know, it has not appeared in the English language. There is the Primula Conference Report, to be had on application to the Secretary of the Royal Horticultural Society, 117, Victoria Street, Westminster.

Tomato-house 60 by 20 feet: *J. P.* Do away with centre path, and make a bed 1½ foot deep and 6 feet wide in its place, putting in drainage if the soil is retentive; and put borders round the sides of the house 4 feet in width, and as deep as the central bed. These beds may have wooden kerbs put to them on the sides next to the walks. After taking out of the area 14 feet for the beds, you will have paths between them of 3 feet in width; this will give space enough to get about amongst the plants with a watering-can in each hand, and will also assist the ventilation, and let the sun shine more fully on the plants than would be the case with narrow alleys. To get early fruits, you should buy plants of the Perfection strain, Orangefield, Ham Green Favourite, or any other handsome-fruited, prolific variety. It is now too late to sow seeds or take cuttings of Tomatos. Plant at 2 feet intervals over the area; or, if you like, 1½ foot betwixt the plants in the row, and 2 feet between the rows. The soil for the beds may be good garden earth, or fresh loam without much manure mixed with it, this aid being better when applied as a top-dressing, or in the form of manure-water, when the plants appear to need help. Train to single stems, in an upright position, and do not smother with plants the ends of the house, if these be of glass. Under the same treatment as the Tomatos—that is, in winter, intermediate-house temperature—you could bring on Roses, Spiræa japonica, Rhododendrons, Zonal Pelargoniums, Freesias, Azaleas, Lilac, double Primulas, Dutch bulbs, Narcissus of early species, and many other plants. There is a work on *The Tomato, its Culture and Uses*, by W. Iggulden, price 1*s.* (*Journal of Horticulture* office, 171, Fleet Street, London, E.C.). The seeds you name should be sown in September, not later.

Vines: *H. B. P.* The shoots of the Vines having been partly pruned back, may wait for the final pruning till February, or you may do it at once, and dress the canes, and in that way afford the Gros Colmar Vines at the back of the house the fullest amount of light. The border inside the house in which you intend to plant Gros Colmar Vine will not last, perhaps, so long in good order as an outside border would do, but much would depend on the quality of the materials, and subsequent management. If not made all at once, but piecemeal, and of pasture loam chiefly, with bones and charcoal added, and it is well drained and carefully enriched when necessary, from time to time, it would last a dozen years, at least. The Muscat Grapes shrivel, probably, from a too dry atmosphere, or from root dryness.

CATALOGUES RECEIVED.

W. Crossley, 13, Vicar Lane, Leeds—Roses, Dutch Bulbs, &c.

B. L. Coleman, Sandwich, Kent—Seeds and Bulbs.

Baudrillier, Gennes (Maine-et-Loire), France—Trees and Shrubs, Wholesale.

John F. Anderson & Co., 33, Manners Street, Wellington, New Zealand—Garden Seeds.

Robert Owen, Maidenhead—New Chrysanthemum Ada Spaulding.

E. P. Dixon & Sons, Hull—Roses.

Henry Eckford, Wem, Salop—Culinary and Sweet Peas.

Wm. Paul & Son, Waltham Cross, Herts—Roses.

André Leroy, Angers, Maine-et-Loire, France—Fruit Trees, Shrubs, &c.

John Gardiner & Co., 21, North Thirteenth Street, Philadelphia, U.S.A.—Bulbs, &c.

A. M. C. Jongkindt Coninck, Tottenham Nurseries, Dedemsvaart, near Zwolle, Holland — Bulbs, Shrubs, Trees, &c., Wholesale.

Ernest Benary, Erfurt, Germany—New Flowers and Vegetable Seeds.

L. Späth, Rixdorf, Berlin, Germany—Wholesale Price List.

Charles Turner, Royal Nurseries, Slough — Roses, Fruit Trees, &c.

Jas. M. Thorburn & Co., 15, John Street, New York, U.S.A. — American Seeds (Wholesale European trade).

Communications Received.—Victor.—R. U.—T. E.—R. A Constant Subscriber (next week).—Briggs.—D. Cox.—G. R—T. M. & Sons.—J. H. P.—D. S.—S. W.—T. F. D—R. T.—J. W. T.—H. H.—J. Boland.—T. H.—W. R.—H. L.—U. D.—J. F. M.—Bee—J. O'B.—W. Rabbitt.—J. D.—H. M.—Prices' Co.—J. Wright.—D. T. F.—N. E. B.—P. L. S. (Paris).—Pomona.—J. Muir.—W. Reid.

DIED. — We regret to record the death, at Paradise and Victoria Nurseries, Upper Holloway, on the 10th inst., of Maria, wife of Mr. B. S. Williams.

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Dicksons Improved Fumigating Pan

Is vastly superior to any other.
PRICE in Iron 6/6, or in Copper, 21/-

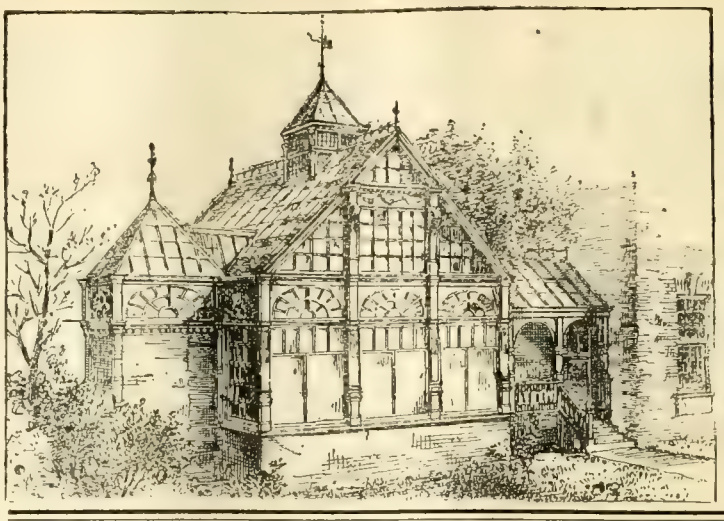


DICKSONS
(Limited)
The Royal Seedsmen,
CHESTER.

CARSON'S PAINT

Patronised by 16,000 of the Nobility, Gentry, and Clergy, for all kinds of
OUTDOOR WORK, CONSERVATORIES, Greenhouses, Frames, &c.
1 Cwt., and Oil Mixture, Free to all Stations.
Liquid Non-Poisonous Paints for Inside of Conservatories, &c. Prices, Patterns, and Testimonials, Post-free.

LA BELLE SAUVAGE YARD, LUDGATE HILL, E.C.
BACHELOR'S WALK, DUBLIN.—*Discount for Cash.*



CROMPTON & FAWKES,

HORTICULTURAL BUILDERS,
CHELMSFORD.

BOOK of Photo-Lithographed Sketches of Winter Gardens, Ranges of Hothouses, Vineries, Architectural Conservatories, &c., of various Designs and Sizes, recently constructed, erected, fitted, and heated complete by us in different parts of the country; with particulars of the most successful Hotwater Heating Apparatus of the century.
Post-free on application.

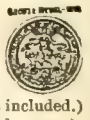
COCOA-NUT FIBRE REFUSE. — Newly made, the same as supplied to the Royal Horticultural Society. Truck-load of 2 tons, £1; free on to Rail, L. B. S. C. and S. E., £1 5*s.*; in Bags, 20, 15*s.*; 40, £1 8*s.* Cash with order.
J. STEVENS AND CO., 153, High Street, Battersea, S.W.

GENUINE GARDEN REQUISITES, as supplied to Royal Gardens, &c.
SPÉCIALITÉ TOBACCO PAPER, the best and strongest in the market, 10*d.* per lb., 28 lb. for 21*s.*
SELECT ORCHID PEAT, 8*s.* per sack, 5 for 35*s.*
SOILS and MANURES of finest quality, and GENERAL SUNDRIES. Price List free.
W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

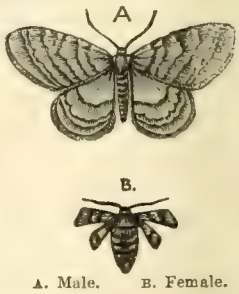


GARDEN REQUISITES.

TWO PRIZE MEDALS.



Quality, THE BEST in the Market. (All sacks included.)
COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each.
GENUINE ORCHID PEAT, 8*s.* 6*d.* per sack; 5 sacks, 40*s.*; BEST BROWN FIBROUS PEAT, 5*s.* per sack; 5 for 22*s.* 6*d.* BLACK FIBROUS PEAT, 4*s.* 6*d.* per sack; 5 for 20*s.* COARSE SILVER SAND, 1*s.* 6*d.* per bushel; 14*s.* half ton; 24*s.* per ton. Yellow Fibrous Loam, Compost, Leaf and Peat Mould, 1*s.* per bushel. Tobacco Cloth or Paper, 1*s.* per lb. Special Manures, Peat-Moss Litter, Crushed Bones, Virgin Cork, &c., &c. Write for Price List.
Terms strictly Cash with order.
CHUBB, ROUND & CO., West Ferry Road, Millwall, London, E. *Bankers—Union Bank of London.*



A. Male. B. Female.

HORNE'S TREE DRESSING.

Now Ready for Catching the Winter Moths upon Fruit Trees, should be used this month.
INVALUABLE.
Write for particulars and price to
W. HORNE,
PERRY HILL, CLIFFE, NEAR ROCHESTER.

THE
NORMAL FERTILISER

For GREENHOUSE or GARDEN.

Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
	2*s.*	3*s.* 6*d.*	5*s.* 6*d.*	9*s.*	14*s.*

And in 6*d.* and 1*s.* packets.
To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts. Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade. Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

SIX CABINET PORTRAITS, 3*s.*; three for 2*s.* Twelve Carte Portraits, 2*s.* 2*d.*; six for 1*s.* 4*d.* Eight-inch Enlargement, 3*s.*; three for 6*s.* Send Carte or Cabinet and Postal Order, and you will promptly receive Highly-finished Copies, with Original.
FRANCIS AND CO., 29, Ludgate Hill, London, E.C.

GARDEN REQUISITES.—Sticks, Labels, Virgin Cork, Raffia, Mats, Bamboo Canes, Rustic Work, Manures, &c. Cheapest Prices of WATSON AND SCULL, 90, Lower Thames Street, London, E.C.

PROTECT YOUR GLASS AND TENDER PLANTS.

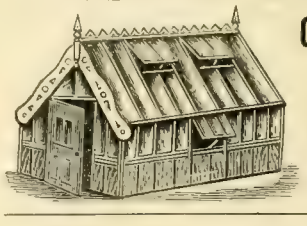
A cheap substitute for Archangel Mats,
"FRICI DOMO" CANVAS.
To be had of all Nurserymen and Florists.

ZINC CHRYSANTHEMUM CUPS,

For Exhibiting Cut Blooms.

2-inch, suitable for Incurved	per doz.	3	6
2½-inch, suitable for large Incurved and small Japanese	,,	4	0
3-inch, suitable for large Japanese	,,	4	6
ZINC WATER TUBES	,,	2	3
FLOWER BOTTLES for large Specimens ...	,,	6	6
IVORY TWEEZERS, for Dressing Blooms ...	each	2	6
BRASS ditto ditto ...	,,	1	6
PAINTED STANDS, fitted with 6 Cups and Tubes	,,	6	6
Ditto ditto 12 ditto	,,	7	0
BOXES, to carry 12 Blooms fitted with Lock	,,	15	0
Ditto 24 ,, ditto	,,	18	0

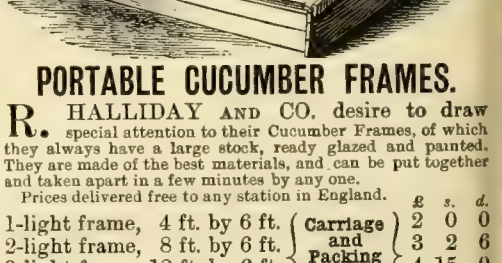
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GREENHOUSES.

Cheapest in the World: everything complete, 40*s.*
Cucumber Frames, 9*s.*
Stamp for New List.
L. TALBERT,
39, Southampton St., CAMBERWELL.

CHEAP FRAMES.



PORTABLE CUCUMBER FRAMES.

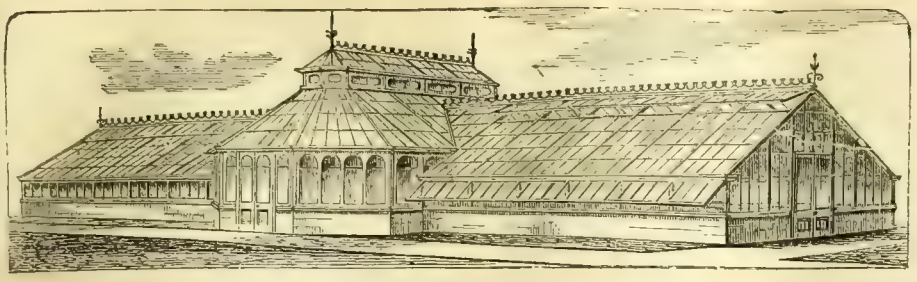
R. HALLIDAY AND CO. desire to draw special attention to their Cucumber Frames, of which they always have a large stock, ready glazed and painted. They are made of the best materials, and can be put together and taken apart in a few minutes by any one.
Prices delivered free to any station in England.

		£	s.	d.
1-light frame, 4 ft. by 6 ft.	Carriage and Packing Cases FREE.	2	0	0
2-light frame, 8 ft. by 6 ft.		3	2	6
3-light frame, 12 ft. by 6 ft.		4	15	0
6-light frame, 24 ft. by 6 ft.		8	10	0

Larger sizes at proportionate prices.

R. HALLIDAY & CO.,
Hothouse Builders and Engineers, Royal Horticultural Works,
Middleton, Manchester,
London Agent—Mr. H. Skelton, Seedsman, &c., 2, Holloway Road, N.

Five 1st Prize Medals recently awarded in open competition.



Five 1st Prize Medals recently awarded in open competition.

R. HALLIDAY & CO.,

HOTHOUSE BUILDERS and HOT-WATER ENGINEERS,

ROYAL HORTICULTURAL WORKS, MIDDLETON, MANCHESTER.

Vineries, Stoves, Greenhouses, Peach Houses, Forcing Houses, &c., constructed on our improved plan, are the perfection of growing houses, and for practical utility, economy, and durability cannot be equalled. We only do one class of work, and that THE VERY BEST.

Conservatories and Winter Gardens designed architecturally correct without the assistance of any one out of our firm, from the smallest to the largest. **Hot-water Heating Apparatus,** with really reliable Boilers, erected, and success guaranteed in all cases. **Melon Frames, Sashes, Hotbed Boxes, &c.,** always in stock.

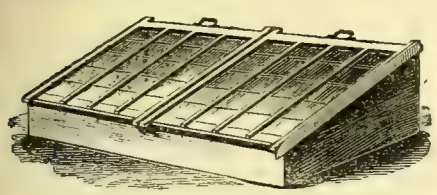
Plans, Estimates and Catalogues free. Customers waited on in any part of the Kingdom.

Our Maxim is and always has been—

MODERATE CHARGES. FIRST-CLASS WORK. THE BEST MATERIALS.

BOULTON & PAUL,

HORTICULTURAL BUILDERS, **NORWICH.**



No. 75.—MELON & CUCUMBER FRAMES

A large stock of these always ready. Made of good red deal. They are 24 inches high at back, and 13 inches high in front, bolted at the corners, easily taken to pieces if required. The Lights are 2 inches thick, with iron bar across, and one handle at the top. Glazed with 21-oz. English sheet glass, and painted four coats.

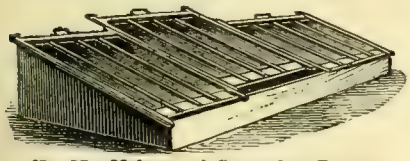
		Length.	Width.		
1	Light Frame,	4 ft.	by 6 ft.		£2 0 0
2	„ „	8 „	by 6 „	Cash	3 0 0
3	„ „	12 „	by 6 „	Prices,	4 5 0
4	„ „	16 „	by 6 „	Carriage	5 10 0
5	„ „	20 „	by 6 „	Paid.	6 15 0
6	„ „	24 „	by 6 „		8 0 0

CARRIAGE paid to any station in England and Wales. Also to Dublin, Cork, Londonderry, Glasgow, and Edinburgh, or stations equivalent.

CATALOGUES POST-FREE.

CHARLES FRAZER'S EXECUTORS,

HORTICULTURAL BUILDERS, NORWICH.



No. 57.—Melon and Cucumber Frame.

The illustration shows a Three-light Frame, 12 feet long by 6 feet wide. Height at front 11 inches, height at back 22 inches. Made of thoroughly seasoned redwood deal, sides and ends 1¼ inch thick, screwed together at the angles, and with the necessary parting pieces and runners for the lights, which are 2 inches thick, strengthened with iron bar across, and fitted with iron handle complete. All parts painted three coats of best oil colour, and light glazed with 21-oz. glass, nailed and bedded in good putty.

1-Light Frame	... 4 ft. by 6 ft.			£2 0 0
2 „ „	... 8 ft. by 6 ft.	Cash Prices		3 0 0
3 „ „	... 12 ft. by 6 ft.			4 5 0
4 „ „	... 16 ft. by 6 ft.	Carriage and		5 10 0
5 „ „	... 20 ft. by 6 ft.	Packing Free.		6 15 0
6 „ „	... 24 ft. by 6 ft.			8 0 0

Carriage is Paid to all Goods Stations in England and Wales; also to Glasgow, Edinburgh, Dublin and Belfast.

New Illustrated Catalogue of Conservatories, Greenhouses, Garden Frames, Poultry Houses, and Dog Kennels, post-free for six stamps, to be deducted from first order.

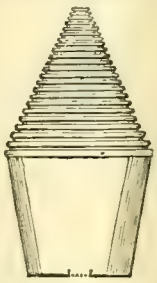
BEDSTEADS. — For the use of Domestic Servants, Children, and Institutions, we sold during 1888, of our D design BEDSTEADS and WOODS' PATENT WOVEN STEEL WIRE MATTRESSES combined, 3200. Carriage paid to any Railway Station. Liberal Discount. Send for a "Book of French and Persian Designs," to THE LONGFORD WIRE CO. (Limited), Warrington.

CONWAY G. WARNE

(Successor to JOHN MATTHEWS),

ROYAL POTTERIES, WESTON-SUPER-MARE.

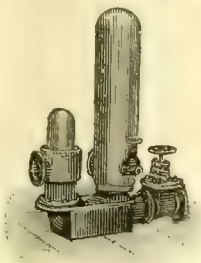
Twenty-one Gold and Silver Medals for excellence.



Testimonials from buyers of fifty years standing.

FLOWER POTS, 1 to 40 inches in diameter, manufactured from the Clay, in its **natural state,** and being made by Hand, are considered by all that use them far superior to Machine-made Pots. Price LISTS gratis. Samples free. Large Book of Designs, 1*s.* 6*d.*

Note.—The **Largest** Flower Pot Manufactory **in the World**



VULCAN IRONWORKS,

WINCHESTER.

THE VULCAN HIGH DUTY HYDRAULIC RAM

Is the most efficient, self-acting Pump. It will force water from streams or springs on low levels to tanks or reservoirs on hills, &c. It saves all water cartage, and is always at work, requiring no attention.

All that is necessary is a small fall from a spring or stream, say 24 inches, when water can be forced to heights varying from 200 to 300 feet, and 2 miles distant.

PORTABLE GARDEN PUMP.



Estimates sent free for Driving and Fitting-up Tube Wells and Pumps, Deep-well Pumps, Fixed and Portable Garden Pumps, &c., and for Laying Domestic Water Supply to Mansions, Farms, Nurseries, Greenhouses, &c.

Address: **H. P. VACHER,**

VULCAN IRONWORKS, WINCHESTER.

ROOT PRUNING can be better and more scientifically performed with the New Patent "MYTI-CUTTAH PRUNER" than by any other means. Send for Price Lists of this novel invention and of our other new and well-known Pruning Tools.—STANDARD MANUFACTURING COMPANY, St. Alkmund's Churchyard, Derby.

Sold by Seedsmen and Ironmongers at home and abroad.

THOS. W. ROBINSON,

IMPROVED "EXPANSION" JOINT HOT WATER PIPES.

REVISED PRICES FREE

"THE BEST OF ALL"

HOT WATER JOINTS.

HEATING APPARATUS FIXED COMPLETE

DENNIS PARK IRON WORKS

STOURBRIDGE.

STOVES.

Terra-Cotta! Portable! For Coal!

ROBERTS'S PATENT (IMPROVED), for Greenhouses, Bedrooms, &c.

GREENHOUSES Heated 24 Hours for about One Penny, without attention. ROBERTS'S PATENT TERRA-COTTA STOVES for COAL give pure and ample heat with common coal, or coal and coke. For Greenhouses, Bedrooms, &c. Pamphlets, Drawings, and authenticated Testimonials sent. See in use at Patentee's,

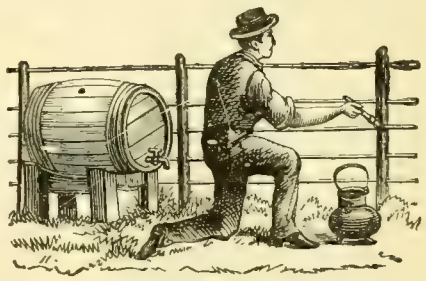
THOMAS ROBERTS,

34, Victoria Street, Westminster, S.W.

HILL & SMITH'S

BLACK VARNISH

for Preserving Ironwork, Wood, or Stone.



(Registered Trade Mark.)

An excellent substitute for oil paint, at one-third the cost. Used in all London Parks, at Windsor, and Kew Gardens, and on every important estate in the Kingdom. Has stood the test of forty years' trial. Requires no mixing; can be applied cold by any ordinary labourer.

Price 1*s.* 6*d.* per gallon at the manufactory, or carriage-paid to any railway station, 1*s.* 8*d.* per gallon in casks of 36, 20, or 10 gallons.

CAUTION.—Every Cask bears the above Registered Trade Mark. Beware of cheap imitations.

HILL & SMITH,

Brierley Ironworks, Dudley;
118, Queen Victoria Street, London, E.C.;
47, Dawson Street, Dublin.

HORTICULTURAL GLASS

STOCK SIZES	
Inches.	Inches.
14×12	20×15
16×12	20×16
18×12	22×16
20×12	24×16
16×14	20×18
18×14	22×18
20×14	24×18

SHEET

21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.

English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.

"HORTICULTURAL PUTTY." Own Special Manufacture.

GEORGE FARMILOE & SONS,

LEAD, GLASS, OIL, and COLOUR MERCHANTS,

34, St. John Street, West Smithfield, London, E.C.

Stock Lists and Prices on application. Please quote *Chronicle.*

ANTHRACITE COAL.

Universally acknowledged the best fuel for Horticultural purposes. For lowest quotations apply—

E. T. RUSSELL AND CO., 60, Wharfdale Road, King's Cross, N.

Established 1846.

To Nurserymen, Seed Merchants, and Florists.

J. BLACKBURN AND SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats, and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices free.—4 and 5, Wormwood Street, E.C.

THE GARDENERS' CHRONICLE

Scale of Charges for Advertising.

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4	Lines ..	£0	3	0	15	Lines ..	£0	8	6
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8	„ ..	0	5	0	19	„ ..	0	10	6
9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
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AND SIXPENCE FOR EVERY ADDITIONAL LINE.

If set across two Columns, the lowest charge will be 20*s.*

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Page, £8; Half Page, £4 10*s.*; Column, £3.

Gardeners and others Wanting Situations.

26 words, including name and address, 1*s.* 6*d.*, and 6*d.* for every additional line (about 9 words) or part of a line.

THESE ADVERTISEMENTS MUST BE PREPAID.

This scale does not apply to announcements of Vacant Situations, which are charged at the ordinary scale.

IMPORTANT NOTICE.—Advertisers are cautioned against having Letters addressed to Initials at Post-offices, as all Letters so addressed are opened by the authorities and returned to the sender.

BIRTHS, DEATHS and MARRIAGES, 5*s.* each insertion.

Advertisements for the current week MUST *reach the Office by Thursday noon.*

All Subscriptions Payable in Advance.

THE UNITED KINGDOM: 12 Months, 15*s.*; 6 Months, 7*s.* 6*d.*; 3 Months, 3*s.* 9*d.*

FOREIGN (excepting India and China); including Postage, 17*s.* 6*d.* for 12 Months; India and China, 19*s.* 6*d.*

Post Office Orders to be made payable at the Post Office, 42, DRURY LANE, W.C., to W. RICHARDS.

PUBLISHING OFFICE and OFFICE for ADVERTISEMENTS, 41, Wellington Street, Strand, London, W.C.

GLASS.—CHEAP GLASS.

8*s.* 6*d.* per 100 feet 15 oz. 12×10, 18×12, 18×14, 24×14, 14×12, 20×12, 18×16, 24×16,

12*s.* per 100 feet 21 oz. ... 16×12, 16×14, 20×16, 24×18, &c.

All kinds of PAINTS at very low prices.

FLOORING at 7*s.* 3*d.* per square; MATCHING at 5*s.* 9*d.*; 3×9 at 2½*d.* per foot run; 2×4 at ⅝*d.*; MOULDINGS, IRONMONGERY, &c. Catalogues on application to

THE CHEAP WOOD COMPANY, 72, Bishopsgate Street Within, London, E.C.

MADE WITH BOILING WATER.

E P P S ' S

GRATEFUL—COMFORTING.

C O C O A

MADE WITH BOILING MILK.

THE BEST REMEDY FOR INDIGESTION.

TRADE NORTON'S MARK.

CAMOMILE PILLS.

Are confidently recommended as a simple but certain remedy for

INDIGESTION

See Testimonial, selected from hundreds:—

CROYDON, 1885.

"Having been a sufferer from Indigestion for many years, I am happy to say that I have at last not only been relieved but perfectly cured by using Norton's Pills, and confidently recommend them to all suffering from the same.

"J. WILKINSON."

For other Testimonials, see Monthly Magazines.

SOLD EVERYWHERE, price 1*s.* 1½*d.*, 2*s.* 9*d.* and 11*s.*

RUSSIA MATS.—New Archangel Mats, and all kinds of Petersburg Mats, supplied Wholesale, to the Trade only. Also RAFFIA, TOBACCO PAPER and CLOTH, CANES, and all SUNDRIES.
MARENDAZ AND FISHER, James Street, Covent Garden, W.C.

ZADKIEL'S ALMANAC, 1890.—Weather and General Predictions, Horoscopes, Re-appearance of the Star of Bethlehem, Fortunate Days, &c. Zadkiel exactly foretold the Illness of the Duke of Edinburgh, the Dervish Invasion of Egypt, &c. London: COUSINS AND CO., 6, Helmet Court, Strand. Price 6*d.*

IMPORTANT SALE of BOOKS in Ghent, Belgium, on November 11 next. Specially Horticulture, Gardening, and Entomology. Many rare English Works and Collections, *Gardeners' Chronicle* complete, *Transactions of Entomological Society* complete, 1st and 2nd Series of Curtis' *Botanical Magazine*, &c. For Catalogue, apply to Mr. H. ENGELCKE, Bookseller, Ghent, Belgium.

YOUNG WOMEN who WANT TO BE INDEPENDENT, and make their own way in the world, should write for a Prospectus of the SCIENTIFIC DRESS CUTTING ASSOCIATION, 272, Regent Street, London, W. Situations for all Pupils at good salaries.

PRITCHARD AND SONS beg to THANK the NUMEROUS APPLICANTS for Head Gardener's place, the appointment being given to Mr. J. McREADIE, Old School Gardens.

ADVERTISER, with Small Capital, wishes to join as PARTNER, in a Small Nursery or Market Garden, North of England preferred.—MARROW, 28, Snezed Street, Tunstall, Staffordshire.

Borough of Sutton Coldfield.

THE TOWN COUNCIL REQUIRE the services of a FORESTER in Sutton Park, which contains upwards of 2,400 acres, who will be required to undertake the sole Management under the control of the Borough Surveyor. He will have charge of the various Entrance Gates, and Keep the Park Accounts. He must be capable of Controlling Workmen, and thoroughly understand the Management of Woods, &c. The Salary will be £100 a year. Applications, with copies of testimonials, to be addressed to me on or before the 25th day of October instant.

THOS. V. HOLBECHE, Town Clerk.

Sutton Coldfield, October 12, 1889.

WANTED, a HEAD WORKING GARDENER, to Grow Grapes, Tomatos, Cucumbers, Peaches and Nectarines for Market. Must be first-class at the above.—State salary, with references, to Box 55, Sheffield Post Office.

WANTED, November 18, a HEAD WORKING GARDENER, where two and boy are kept. Not over 35. Must understand Glass and Vines. Some experience in Chrysanthemums essential. Abstainer preferred. Wife to do the Washing. Gardener's wages commence at 22*s.* and cottage. Personal character indispensable.—Apply by letter, giving full particulars of experience, references, family, &c., to S., The Elms, Foots Cray, Kent.

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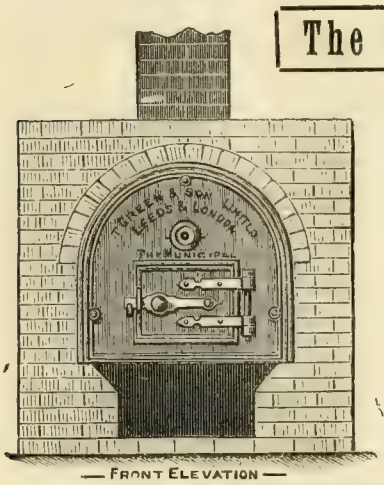
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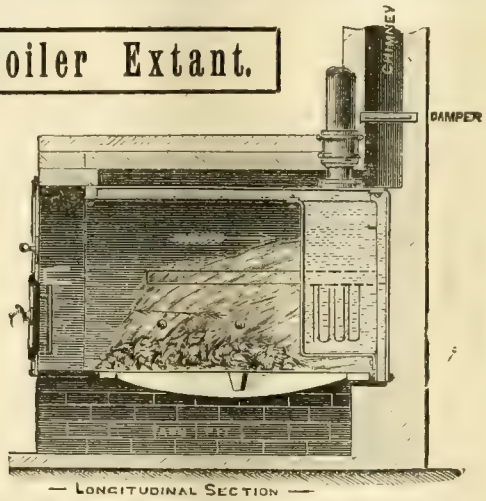
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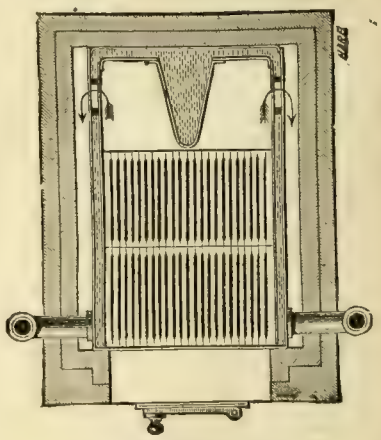
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, October 19, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2548.

No. 148.—Vol. VI. {Third Series.} SATURDAY, OCTOBER 26, 1889. [Regt. as a Newspaper. {PRICE 3d. Post-Free, 3½d.

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THE GARDENERS' CHRONICLE IN AMERICA.

The Subscription to America, including Postage, is $4.30 for Twelve Months.

Agent for America:—E. H. LIBBY, Manager, "The American Garden," 10, Spruce Street, New York, to whom American Orders may be sent.

ROYAL HORTICULTURAL SOCIETY. CHRYSANTHEMUM CENTENARY CONFERENCE and EXHIBITION, 1889.

A CONFERENCE and EXHIBITION to celebrate the Centenary of Chrysanthemum Culture in this country will be held at the Royal Horticultural Society's Gardens, Chiswick, on TUESDAY and WEDNESDAY, November 5 and 6, 1889.

Papers will be read by leading authorities on Chrysanthemum Culture each day at 1.30 P.M.

The EXHIBITION will embrace all subjects pertaining to the Chrysanthemum, whether in its botanical, its horticultural, its literary, or its artistic aspects; and it will seek to bring together for the purposes of reciprocal information and friendship all those interested in the Chrysanthemum and its culture.

Admission: Tuesday, from 1 o'Clock, and Wednesday, from 10 o'Clock, One Shilling.

CRYSTAL PALACE. GRAND SHOW of CHRYSANTHEMUMS, FRIDAY and SATURDAY, November 8 and 9. Entries close November 1. Schedules and Entry Forms post-free on application to Mr. HEAD, Superintendent.
Gardens Department, Crystal Palace, S.E.

BRIGHTON and HOVE SEVENTH ANNUAL CHRYSANTHEMUM SHOW, NOVEMBER 5 and 6. Cut Blooms—1st Prize, a 12-Guinea Cup and £7; 2nd, £6; 3rd, £3; 4th, £2. Schedules of MARK LONGHURST, Sec., 18, Church Road, Hove.
L. B. and S. C. R. take all Exhibits to and from the Show free of charge if unsold.

MARKET HARBOROUGH CHRYSANTHEMUM SHOW, WEDNESDAY and THURSDAY, November 6 and 7, 1889. Open Class, for 36 Cut Blooms, 18 Japanese and 18 Incurved, distinct varieties. 1st, £5; 2nd, £3; 3rd, £1. Entrance fee, 5s. Further particulars from
GEO. GREEN, Hon. Sec.

NOTICE.—The finest TRADE SHOW of CHRYSANTHEMUMS in the country, is that of—
J. R. PEARSON AND SONS, at Chilwell Nurseries, Notts.
On view through the month of November.
Admission till 1 P.M., free; 1 till dusk, 6d. each.
Beeston Station, Midland Railway, ¾ mile from Nurseries.

ORCHIDS, The Specialty.—New Interleaved Catalogue of an exceedingly healthy and well-grown Stock, just published, post-free on application.
FRED HORSMAN AND CO., Colchester.

CAPE BULBS.—Botanic Gardens, Capetown.
The usual Orders from the Trade are solicited.
Output December to February.
P. MACOWAN, Director, Capetown.

BOOKS on ROSES by Wm. PAUL, F.L.S.—"The Rose Garden," ninth edition, 4to, 360 pp., fifteen coloured plates, numerous engravings, 17s. 6d. nett; the same 8vo. without plates, 8s. 9d. nett. "Roses in Pots," sixth edition, illustrated, 2s. "Roses and Rose Culture," sixth edition, illustrated, 1s. The *Journal of Horticulture* says:—"The best works on Roses are those by Mr. Wm. Paul."
Wm. PAUL AND SON, Waltham Cross, Herts.

SEAKALE for FORCING, superior selected Crowns, 80s. per 1000; under 500, 9s. per 100. Orders to be accompanied by Cheque or Post-office Order.—ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, S.W.

J. W. BARNHAM (late of Squelch & Barnham) RECEIVES ON COMMISSION, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

A. H. WRIGHT is open to RECEIVE on COMMISSION, any quantity of good WHITE and OTHER FLOWERS. Special attention given. Boxes and Labels supplied. Weekly settlements. Bank and other references.
Postal address, 11, Alexandra Road, Selhurst, Croydon, S.E.

HENRY SQUELCH (late Squelch & Barnham) RECEIVES CONSIGNMENTS of good Black Grapes, Muscats, Cucumbers, Tomatos, and Beans; also all kinds of choice Hothouse Flowers. H. Squelch's trade being especially for First-class Hothouse Produce, and he having a connection amongst the best Houses in London and Country, is able to command highest Market Prices. Account Sales furnished daily, and accounts settled weekly, or as desired.
Empties and Labels Supplied. Bankers' and other references.
North Row, Covent Garden Market, W.C.

AUSTIN ROBERTS is prepared to RECEIVE CHOICE FLOWERS for Disposal at best Market Prices. Quick Sales, prompt returns, and Weekly Settlements. Good references. Boxes and Labels supplied.
26, Russell Court, Catherine Street, Strand, London, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

CHOICE FLOWERS—CHOICE FRUIT.—Highest Market Prices guaranteed. Prompt cash.
HENRY RIDES, Covent Garden, W.C.

WANTED, Jacqueminot ROSES, Dwarf and Seedling BRIERS. Price 100 or 1000.
HAMMOND, Vineries, Heene, Worthing.

WANTED, SILVER TREE FERN (Cyathea dealbata), stem 3 to 4 feet. Quote price to PETER CAMPBELL, Dyer, Perth.

WANTED, Stock Plants of Golden Tricolor GERANIUMS to name, also CALCEOLARIAS, Golden Gem from beds. Samples and price to
GEORGE ASHENDEN AND SONS, The Nurseries, Wrotham Road, Gravesend.

WANTED, FRUITING TREES, about 1 foot stems, five Peaches, four Nectarines, two Apricots, two Cherries. Price, &c., to
EDWARD BENNETT, The Vineyard, Potters Bar, N.

SUTTON'S BULBS.—The best of the season. "I think your Hyacinths beat all others."—Mrs. FRANK STERICKER, *Danby House*.

SUTTON'S HYACINTHS, TULIPS, NARCISSUS, CROCUS, SNOWDROPS, LILIES, and other Spring Flowering Bulbs.
Complete Priced LIST post-free on application.

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SUTTON AND SONS, THE QUEEN'S SEEDSMEN, READING.
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ROSES! ROSES!! ROSES!!!—The best and cheapest in the world. 40 choice Perpetuals for 21s. Purchaser's selection from 400 best varieties. CATALOGUES free on application. Ten acres of Roses, 100,000 grand plants to select from. Plant now.
JAMES WALTERS, Rose Grower, Exeter.

EVERGREEN HEDGES.—Fine bushes of LINGUSTRUM OVALIFOLIUM and THUIA LOBBII, from 3 feet to 6 feet. Plant now. Price LIST free.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

To the Trade.

STACHYS TUBERIFERA, English grown. Price on application.
JAMES CARTER AND CO., 237 and 238, High Holborn, W.C.

FERNS—FERNS.—Trade offer.—Great Annual Sale of Surplus Stock cheap; 100,000 to select from, in 20 most saleable sorts; 10s. and 12s. per 100 Adiantums, Pteris, &c. Adiantum cuneatum and Pteris Mayii, 12s. per 100.
SMITH, The London Fern Nurseries, Loughboro' Road, Brixton.

Rhododendrons.

H. LANE AND SON have a splendid stock of best-named sorts well set with buds for forcing or planting, also Hybrid Seedlings and Ponticums for wood planting. CATALOGUE on application.
The Nurseries, Berkhamsted, Herts.

ROMAN HYACINTHS, NARCISSUS, LILIUMS, TUBEROSES, and many other FRENCH BULBS, grown and offered by LOUIS BREMOND, fils, Ollioules, France.
WHOLESALE LIST on application to WILLIAM DENMAN, 7, Catherine Street, Covent Garden, London, W.C.

PLANTING SEASON.—FRUIT TREES, COB NUTS, FOREST TREES, and SHRUBS. Several thousand for sale, all well rooted, strong and healthy.—Apply, TODDINGTON ORCHARD CO., Winchcomb, Gloucestershire.

GEORGE LEE, F.R.H.S., has a few thousand LAXTON'S "NOBLE" STRAWBERRY PLANTS for Sale, at from 5s. to 12s. per 100; KING OF THE EARLIES, 3s. Clevedon, October 9.

STRAWBERRY PLANTS.—Sir J. Paxton and Elton Pine, 2s. 6d. per 100; Laxton's Noble, 2s. 3d. per doz., free; Paxtons, in fruiting pots, 16s. per 100, on rail.
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STRAWBERRIES.—Leading kinds, in 3½-inch pots, for immediate Planting or Potting on for Forcing. Send for LIST.
FRANCIS R. KINGHORN, Sheen Nurseries, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

RHUBARB.—20,000 large Roots, ten years old, suitable for forcing. 15s. per 100, on rail. Cash with order. J. J. CLARK, West Brighton, Sussex.

NICOTINE SOAP.—An effectual eradicator of all insect pests affecting plants, without injury to foliage. Jars, 1s. 6d., 3s., 5s. 6d.; Tins, 15s. 6d., 25s., 95s.
All Seedsmen and Florists.

SENT GRATIS.—WOOD AND SON'S interesting Pamphlet on Fertilizing Moss. Most valuable information on Plant and Bulb Culture.
WOOD AND SON, Wood Green, N.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday Next, October 30.

5000 BULBS of LILIUM AURATUM.

MR. J. C. STEVENS will include in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY NEXT, October 30, 5000 BULBS of LILIUM AURATUM, just received from Japan.

On view morning of Sale, and Catalogues had.

Thursday Next.—(Sale No. 8022.)

Englefield Green, near Staines.

ORCHIDS and ORCHID-HOUSES.—Without reserve.

MR. J. C. STEVENS has received instructions from Col. Deare to SELL by AUCTION, on the Premises, as above, on THURSDAY NEXT, October 31, at half-past 12 o'Clock precisely, the Collection of ORCHIDS and other STOVE PLANTS, the GLASS-HOUSES, Hot-water PIPING, BOILERS, SLATE STAGING, &c.

On view the day prior from 10 till 5, and morning of Sale; and Catalogues had of Mr. J. C. STEVENS, at his Auction Rooms and Offices, 38, King Street, Covent Garden, W.C., and on the Premises.

Thursday Next, October 31.

SPECIAL SALE OF BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, October 31, an extensive Consignment of BULBS, just received from Holland, comprising choice Double and Single named Hyacinths, fine Tulips, Crocuses, Snowdrops, Narcissus, Scillas, &c., lottedto suit Trade and other Buyers.

On view morning of Sale, and Catalogues had.

Special Sale of Orchids in Flower and Bud.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, November 14, and he will be glad if Gentlemen desirous of ENTERING PLANTS for this SALE will PLEASE SEND LISTS AS SOON AS POSSIBLE.

Dutch Bulbs.

GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Harrow, Middlesex.

Most favourably situate, overlooking Harrow School, about 20 minutes walk from Harrow Station, Metropolitan Railway, and 35 minutes walk from Harrow Station, L. and N. W. Railway.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. T. Chamberlain, who is retiring from the Business, to SELL by AUCTION, on the Premises, the Nursery, Sheepcote Road, Harrow, on MONDAY NEXT, October 28, at half-past 11 o'Clock precisely (immediately preceding the Sale of the Nursery Stock), the choice FREEHOLD BUILDING ESTATE, known as the Harrow Nursery, Harrow, possessing a commanding frontage of about 600 feet to the Sheepcote Road, and containing an area of 2 ac. 3 rds, 5 perches, or thereabouts, adapted for the erection of Villa Residences or Cottage Property, so much in demand in the neighbourhood, or for continuing as a Nursery.

Particulars and conditions of Sale may be had on the Premises, of Mr. E. T. CHAMBERLAIN, 1, College Terrace, College Road, Harrow; of Messrs. CANNON AND PALMER, Solicitors, Wool Exchange, Coleman Street, E.C.; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

Exeter.

SIX DAYS UNRESERVED SALE of particularly well-grown NURSERY STOCK, presenting to Gentlemen and the Trade, largely engaged in Planting, a splendid opportunity of securing acres of well-assorted and thriving young Stock.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. Lucombe, Pince & Co., who are relinquishing the business, to SELL by AUCTION, on the Premises, the Nurseries, Exeter, on MONDAY NEXT, October 28, and five following days, at half-past 12 o'Clock precisely each day, without the slightest reserve, the First Portion of the extensive NURSERY STOCK, comprising specimen Border Shrubs, in rich assortment, and in considerable quantities; 25,000 Conifers of the choicest description, beautifully grown and in various sizes; 20,000 Evergreens, comprising Variegated and Green Hollies, Golden and English Yews, &c.; 3000 Hybrid Rhododendrons, 28,000 Fruit Trees, consisting of 6000 Standard, Dwarf, and Pyramidal Apples; 4000 ditto Pears, 1000 Dwarf-trained Peaches, Nectarines, and Apricots, not injured by frost. Thousands of Ornamental Trees, Deciduous Shrubs and Climbing Plants; 15,000 GREENHOUSE PLANTS, including 3 00 well-grown Ericas, 1500 Camellias and Azaleas, 250 Daphnes, 2500 Genistas, 3000 various Ferns, of sorts, 600 Roses in pots, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be obtained on the Premises, and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—Purchasers may arrange with the Manager at the Nursery to have their lots packed and forwarded to any part of the kingdom at the usual charge. The old-established NURSERY is TO BE LET or SOLD, on very advantageous terms.

Full particulars may be obtained of Messrs. PROTHEROE AND MORRIS as above.

Harrow.

CLEARANCE SALE, by order of Mr. E. T. Chamberlain, who is retiring from the business.

Important to Nurserymen, Gentlemen, Builders, and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Harrow Nursery, Harrow, about 20 minutes' walk from Harrow Station, Metropolitan Railway, on MONDAY and TUESDAY NEXT, October 28 and 29, at 12 o'Clock precisely each day, without reserve, the whole of the valuable and well-grown NURSERY STOCK, including 1000 Aucubas, 2 to 3½ feet, 500 Irish, English, and Golden Yews, a great variety of Coniferæ, Evergreen and Deciduous Shrubs, Hardy Climbers, a large number of Ornamental, Forest, and Fruit Trees, 1000 Currants and Gooseberries, 800 Standard and Dwarf Roses; also the loose Utensils-in-Trade, Van, Cart, Wagonette, light Phaeton, in good condition, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; of Mr. E. T. CHAMBERLAIN, 1, College Terrace, College Road, Harrow, N.W.; and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

SPECIAL SALE OF LILIES.—Important to the Trade.

8000 Lilium auratum, splendid Bulbs, just received from Japan; also several thousands of various Lilies, including 2000 Lilium rubrum cruentum, 1600 Lilium album Kroetzeri, 5500 Lilium longiflorum, grand bulbs; 200 Lilium auratum, rubro vittatum and virginale, tigrinum, eximium, elegans, &c.

MESSRS. PROTHEROE and MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, October 29, at half-past 11 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Tuesday Next.

Standard, Dwarf, and Climbing ROSES, including the best Hybrid Perpetuals and Teas; choice Hardy AMERICAN PLANTS, RHODODENDRONS, and other Evergreen Shrubs; ORNAMENTAL and FRUIT TREES, and a variety of GREENHOUSE and DECORATIVE PLANTS, CARNATIONS, PICOTEES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, October 29, at half-past 12 o'Clock.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Wednesday Next.—Important to the Trade.

10,000 LILY OF THE VALLEY, Berlin Crowns.

10,000 ROMAN HYACINTHS, 10,000 ITALIAN HYACINTHS, AZALEAS, FICUS, and other PLANTS from Holland; GREENHOUSE PLANTS from an English Nursery; 300 lots of First-class HYACINTHS, TULIPS, and other DUTCH BULBS, DAFFODILS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, October 30, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Groombridge, near Tunbridge Wells.

GREAT UNRESERVED SALE of VALUABLE NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. E. Hollamby, to SELL by AUCTION, on the Premises, Hollamby's Nurseries, Groombridge, Tunbridge, Tunbridge Wells, close to the Groombridge Railway Station, on WEDNESDAY and THURSDAY NEXT, October 30 and 31, at 12 o'Clock precisely each day, enormous quantities of CONIFERÆ, Ornamental, Deciduous and other SHRUBS, 2,000 Standard Dwarf and Climbing ROSES, 40,000 LARCH FIRS, 2 to 3 feet, 28,000 Portugal, Caucasian and other LAURELS, 10,000 named and other RHODODENDRONS, 5,000 Hardy CLIMBERS established in pots, and other Stock.

May be viewed any day (Sundays excepted), prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, and Estate Agents, 67 and 68, Cheapside, E.C.

Friday Next—Orchids in Flower.

MESSRS. PROTHEROE AND MORRIS desire to announce that they will RESERVE SOME LOTS in their CATALOGUE for FRIDAY, November 1, for ORCHIDS in FLOWER. Gentlemen desirous of INCLUDING PLANTS IN THIS SALE should kindly SEND THEIR LISTS by MONDAY NEXT.

On view morning of Sale, and Catalogues had.

Friday Next.

VANDA SUAVIS and V. LIMBATA.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. W. Kemsley & Co., to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 1, at half-past 12 o'Clock precisely, a splendid importation of VANDA SUAVIS, the true kind, such as have not been imported for over six years, together with a fine lot of V. LIMBATA. The Sale will also include about 250 lots of ESTABLISHED ORCHIDS for Sale without reserve, and a quantity of ORCHIDS in FLOWER.

On view morning of Sale, and Catalogues had.

Upper Tooting Park, S.W.

CLEARANCE SALE without reserve, in consequence of the approaching expiration of the Lease.

Well-grown and thriving NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, Upper Tooting Park, S.W., a short distance from the Balham Railway Station, on FRIDAY NEXT, November 1, at 12 o'Clock, by order of Mr. J. R. Box, a large quantity of well-grown and thriving NURSERY STOCK, in excellent condition for removal, consisting of thousands of Conifers and Shrubs, in great variety; Forest and Ornamental Trees, including Limes, Planes, and Poplars, Standard Apples, Pears, and other Fruit Trees, Roses, Climbers, several large Camellias, and other Stock.

May be viewed one week prior to the Sale. Catalogues obtained on the Premises; at Mr. J. R. BOX'S, East Surrey Seed Warehouse, Croydon, at the Balham Hill Nursery, S.W.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

Cliffe, near Rochester, Kent.

Adjoining the Cliffe Railway Station, South-Eastern Railway.

GREAT SALE OF FRUIT TREES.

Important to Nurserymen, Market Gardeners, and Fruit Growers.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Horne to SELL by AUCTION, without reserve, on the Premises, Perry Hill, Cliffe, near Rochester and Gravesend, on MONDAY, November 4, at 12 o'Clock punctually, 30,000 FRUIT TREES of the best Market sorts, comprising:—

- 11,000 Maiden Apples
- 2,000 English Paradise Apples
- 1,000 Standard and Half-Standard Apples
- 1,000 Maiden Plums
- 1,000 Standard and Half-Standard Victoria Plums
- 1,000 Standard Bush Plums
- 4,000 Gooseberries and Currants
- 3,000 Maiden Pears
- 50,000 Sir Joseph Paxton Strawberry Roots
- 1,500 Wild Cherries
- 500 Standard Bigarreau and other Cherries
- 500 Standard Farleigh Prolific Damsons
- 1,500 Standard and Half-Standard Pears
- 20,000 Two-year Connover's Colossal Asparagus

May be viewed one week prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tottenham, Middlesex.

ANNUAL SALE of remarkably well-grown NURSERY STOCK, HERBACEOUS PLANTS, and BULBS, for the growth of which Mr. Ware has gained a great reputation.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware, to SELL by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, adjoining the Tottenham Hale Station, G. E. Railway, on TUESDAY, November 5, at 11 o'Clock precisely, in consequence of the unusually large number of lots, a large quantity of beautifully-grown NURSERY STOCK, comprising:—

- 5,000 Oval-leaved Privet, 2½ to 5 feet, grown singly
- 5,000 well-grown dwarf Roses
- 10,000 Hardy Climbers
- 3,000 Veronica Traversii
- 1,000 Ornamental Grasses
- 10,000 Border and Tree Carnations
- 5,000 Ornamental Shrubs
- 30,000 exceptionally strong Seakale
- 100,000 Forcing Plants and Bulbs
- 5,000 Choice Lilies
- 5,000 Standard Ornamental Trees
- And other valuable Stock, all in the finest possible condition.

The famous new yellow Chrysanthemum "Mrs. Hawkins," &c.

The Stock may be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, or will be forwarded free by post on application to the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call the special attention of Gentlemen and the Trade to this highly important Sale. It is impossible to enumerate within the limits of an ordinary advertisement the many items of stock, as it is seldom such a quantity is offered by Auction in one day. The whole will be found to be in excellent condition.

Bagshot, Surrey.

Highly important to the Trade and Gentlemen engaged in Planting.

EXTENSIVE SALE of SURPLUS NURSERY STOCK grown to the greatest perfection and exceedingly well-rooted.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. John Waterer & Sons, to SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, on TUESDAY, November 5, and three following days, at 12 o'Clock precisely each day, and without reserve, an unusually large quantity of attractive NURSERY STOCK, beautifully grown and well-rooted, comprising 5000 Conifers, 2 to 6 feet, in rich assortment; 6000 Evergreens, 2 to 6 feet; 5000 Rhododendrons, 2 to 4 feet, an exceptionally fine lot, freely set with bloom-buds, and embracing all the choicest varieties in cultivation; fine Limes, 10 to 12 feet; and other Standard Trees; 10,000 Spruce Firs, 2 to 3 feet, many fit for Christmas Trees; and other Stock.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

N.B. Bagshot Station being situated on the Nurseries, facilities are presented for the conveyance of purchasers, and Messrs. J. Waterer & Sons, will undertake to despatch any goods bought at the Sale, simply charging for the time and labour occupied.

Hammersmith, W.

SALE of well-grown NURSERY STOCK, by order of Mr. F. Herridge.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, 47, Fulham Palace Road, Hammersmith, W., close to the Hammersmith Broadway Railway Station, on WEDNESDAY, November 6, at 12 o'Clock precisely, 3000 Green HOLLIES, 5 feet to 12 feet; 6000 AUCUBAS, 3 feet to 7 feet; 6000 Golden and Green EUONYMUS, 1 foot to 5 feet; 2000 PRIVET, 5 feet to 12 feet; 200 Golden YEWS, 2 feet; and quantities of other NURSERY STOCK.

May be viewed three days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Brockley, S.E.

Five minutes' walk from the Ladywell Station, S.E.R.

To Gentlemen, Landscape Gardeners, and others.

SALE of WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons to SELL by AUCTION, on the Premises, The Brockley Nursery, Ivy Lane, Brockley, S.E., on THURSDAY and FRIDAY, November 7 and 8, at 12 o'Clock each day, without reserve, 500 bushy AUCUBAS, 2 to 4 feet; 200 specimen Weeping ASH, 1000 London PLANES, fine trees for avenue planting; LIMES, BIRCH, POPLARS, and other STANDARD ORNAMENTAL TREES, a great variety of CONIFERS, DECIDUOUS SHRUBS in variety, 2000 FRUIT TREES, comprising Apples, Pears, Plums, and Cherries; thousands of CURRANTS, CLIMBING PLANTS, and other NURSERY STOCK, the whole in capital condition for removal.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; at the Burnt Ash Lane Nurseries, Lee, S.E; the Seed Shop, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C

Leytonstone, E., close to the Railway Station.
ANNUAL SALE.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the American Nurseries, Leytonstone, E., on MONDAY and TUESDAY, November 11 and 12, a large quantity of unusually well-grown NURSERY STOCK.

Lee, S.E.
In the High Court of Justice, Chancery Division.
CLEARANCE SALE of NURSERY STOCK, PLANTS in POTS, GLASS ERECTIONS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Manor Lane Nursery, Lee, S.E., on WEDNESDAY and THURSDAY, November 13 and 14, the whole of the GENERAL NURSERY STOCK, 5000 Aucubas, 6000 Golden and Green Euonymus, 11 Greenhouse Plants; 11 GREENHOUSES, Hot-water PIPING, CARTS, Market VAN, &c.
Catalogues may be had, when ready, of the Auctioneers, 67 and 68, Cheapside, E.C.

Eltham.
GREAT UNRESERVED CLEARANCE SALE of over 20 Acres of remarkably well-grown and thriving NURSERY STOCK, by order of Mrs. Todman, in consequence of the expiration of the Leases.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Eltham Nursery, Eltham, Kent, 1 mile from the Eltham Railway Station, on MONDAY, November 18, 1889, and following days, at 12 o'Clock punctually each day, without reserve, the whole of the unusually well-grown NURSERY STOCK, extending over 20 acres, now in excellent condition for removal.
Fuller particulars will appear in due course. Catalogues of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Maresfield, near Uckfield, Sussex.
GREAT CLEARANCE SALE of the first portion of the GENERAL NURSERY, including a great variety of CONIFERS, named RHODODENDRONS, 3,000 Standard and Dwarf Roses, 80,000 Spanish CHESTNUTS, &c.

MESSRS. PROTHEROE AND MORRIS are instructed by Louisa Lady Shelley, of Maresfield Park, to SELL by AUCTION, on the Premises, the Piltdown Nursery, Maresfield, near Uckfield, on TUESDAY, November 19, and following days, at 12 o'Clock each day, the first portion of the GENERAL NURSERY STOCK.
May be viewed. Catalogues had of M. SANDFORD, Esq., the Estate Office, Maresfield Park, near Uckfield; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.
N.B.—The well-known NURSERY is TO BE LET on very advantageous terms. Full particulars of the Auctioneers.

Nursery Stock.—West Wickham, Kent.
Under Bill of Sale, and by order of Trustee.
AUCTION SALE of about 40,000 well-grown FOREST and FRUIT TREES, CONIFER, AUCUBAS, specimen WELLINGTONIA, border and pot SHRUBS, about 10,000 Standard and Dwarf ROSES, &c.

MR. W. LEVENS will SELL the above, on THURSDAY, October 31, 1889, and two following days, at 11 for 12 o'Clock each day.
Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham; and also at 6, Kirkdale, Sydenham, S.E.
N.B. West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

To Nurserymen, Seedsmen and Florists.
Borough of Loughborough, near Leicester.

FOR DISPOSAL, a sound going concern, as MARKET GARDENER'S and NURSERYMAN'S BUSINESS, comprising five Glasshouses, Orchard, small but well-stocked nursery, 25 acres of Land, good House and Premises, and Sale Shop in market. The Nursery and House is situate within fifteen minutes walk of the market-place.
For further particulars apply to Mr. W. ARMSTRONG, Auctioneer and Valuer, 33, Cattle Market, Loughborough.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, by Private Treaty, a first-class NURSERY, well stocked; 7 Hothouses, about 2 Acres of Land, lock-up Shop in Market-place.
For particulars, apply to GRAHAM AND MADELEY, Valuers, Burton-on-Trent.

NURSERYMEN and FLORISTS: large fashionable town. Handsome and prominent Conservatory, Gardens, &c. Moderate rental. Price for good stock and four large, well-built and heated houses, £800. Excellent opportunity for practical man desirous of obtaining a high-class business.
Apply personally (or stamp), B. POMFRET, Business Agent, High Street, Tunbridge Wells.

TO LET, $2\frac{1}{2}$ Acres of GARDEN GROUND, well stocked with Fruit Trees, Small Shrubs, and Asparagus Beds, in rows 2000 feet in length.
H. C. NEAME, Birchington-on-Sea, Westgate-on-Sea.

To be Let on Lease,
Within a Mile of Kemsing Station, L.C. & D.R., and 3 Miles of (the Town) Sevenoaks.
To those in want of a small Fruit Farm, situated on the slope of the Chalk Hills, and well adapted for the Growing of Fruit and Vegetables, Erection of Greenhouses for Grapes, &c.

TO BE LET, at once, on Lease, the HOUSE known as "Percy Lodge," Kemsing, near Sevenoaks, Kent, together with the 5 acres of Land, 2 acres of which are planted with a good stock of Fruit Trees in thriving condition. There is 1 acre of Meadow and 2 acres of Arable, a splendidly built Stable and other Buildings, Piggeries, &c.; a good Well of Water drawn from the Chalk Hills.
For terms apply on the Premises, to Mr. RICHESS; or, if by letter, to the Owner, GEORGE USHERWOOD, Mack's Road, Bermondsey, London, S.E.

TO LET, a NURSERY, 7 Houses, Pits, Stabling, &c., and 2-roomed Cottage. Rent £55.
Apply on the premises, C. EWEN, 5A, Clifton Villas, Maida Vale.

To Nurserymen.
PLANTING for BURIAL GROUND.

THE BURIAL BOARD for the Parish of Melcombe Regis, Dorset, invite TENDERS FOR PLANTING the LAND, lately purchased by them as an addition to their present Burial Ground, situate in the Parish of Wyke Regis, Dorset.
The Land to be planted can be seen on application to the Lodge Keeper at the Burial Ground, and plans of such land and of the present Burial Ground, together with a Specification and Conditions for the Planting, can be seen at my Office on and after the 29th inst.
Persons desirous of Tendering are requested to send Sealed Tenders to me on or before 11 A.M., on MONDAY, the 11th November next.
The Board does not bind itself to accept the lowest or any Tender. By Order of the Board,
W. BOWLES BARRETT, Clerk.
Weymouth, Oct. 23, 1889.

Paddington, W.—To Builders.

THE BURIAL BOARD for the Parish of Paddington, is prepared to RECEIVE TENDERS for the ERECTION of a GREENHOUSE at the Cemetery. Plans and Specification to be seen at the Office of the Architect, Mr. FRANK W. M. KING, Billiter Square Buildings, Billiter Square, E.C., on and after the 24th day of October inst., between the hours of 12 noon and 5 P.M. Tenders to be delivered to me at the Vestry Hall, Harrow Road, W., before 3 o'Clock on THURSDAY, the 7th day of November, 1889, endorsed "Tender for Greenhouse." The Board does not bind itself to accept the lowest or any Tender.
HENRY CECIL, Clerk to the Board.
Burial Board Office, Vestry Hall, Harrow Road, W.—Oct. 22, 1889.

Landscape Gardening.

OUR THOMAS H. MAWSON advises on all classes of Work under the above heading; also Rock Building, General Estate Improvements, Planting, &c.
See *Gardeners' Chronicle*, No. 146, p. 412.
Address, MAWSON BROTHERS, Nurserymen, Windermere.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

THE FOLLOWING TREES, having stout, straight stems, fine heads, and splendid roots, all having been transplanted within two years:—
ACACIA BESSONIANA, 12 to 14 feet.
,, SEMPERFLORENS, 12 to 14 feet.
ACER DASYCARPUM, 12 to 16 feet.
,, ,, WIERII LACINIATA, 10 to 14 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
,, REITENBACHII, 12 to 14 feet.
,, SCHWEDLERII, 12 to 16 feet.
,, WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, common, 10 to 12 feet.
,, Purple, Pyramids and Standards, 10 to 16 feet.
BIRCH, Silver, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
,, ,, Double White, 10 to 16 feet.
,, ,, Scarlet, 12 to 16 feet.
,, Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 12 feet.
LIMES, 12 to 16, and 20 feet.
,, Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
,, Scarlet, American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR, Bolleana, 10 to 14 feet.
,, canadensis nova (the true variety), 12 to 16 feet.
,, Lombardy, 14 to 16 feet.
SYCAMORE, Common, 14 to 16 feet.
,, Purple, 14 to 16 feet.
THORNS, Double, Scarlet, 8 to 10 feet.
,, ,, White, 8 to 10 feet.
WALNUTS, Common, 10 to 12 feet.

WEEPING TREES.

BEECH, Weeping, Pyramids and Standards, 8 to 12 feet.
,, ,, Purple, Pyramids and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 6 to 10 feet.
OAK, Weeping, English, Standards, 10 to 12 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

To the Trade.

LARGE IRISH YELLOW PRIMROSE. The true Stock (crop 1889). Price per pound, &c., on application.—WM. BAYLOR HARTLAND, Seedsman, 24, Patrick Street, Cork.

DUTCH BULBS!—BULBS!—BULBS!—Hyacinths, Tulips, Narcissi, Crocuses, Anemones, Ranunculus, Lilies, and all other Bulbous Plants and Roots. Goods delivered entirely free of any charge at destination in Great Britain and Ireland. No packing charges. The most favourable and easy terms ever offered. Only the finest roots, guaranteed true to name, supplied at lowest prices. Beautifully illustrated English CATALOGUE for Amateurs, gratis and post-free on application to VAN MEERBEEK AND CO., Growers, Hillegom, near Haarlem, Holland.

SCHUBERTIA GRANDIFLORA.—See page 354 of this Paper, September 28 last, for recommendation of this New Plant exhibited, with large white flowers 2 inches in diameter, in rich bunches powerfully and deliciously scented. Strong Plants, 3s. 6d. each.
HOOPER and CO. (Ltd.), Pine-Apple Nursery, Maida Vale, W.

DEVIZES CHRYSANTHEMUM SHOW,
TUESDAY, November 12.
For 24 Cut Blooms of Incurved Chrysanthemums, not less than 18 varieties—1st Prize, £10 10s.; 2nd, Silver Cup, value £5 5s.; 3rd, £3. For 12 Blooms of Japanese, distinct—1st Prize, Silver Cup, value £5 5s.; 2nd, £2; 3rd, £1 5s. And 19 other Valuable Prizes for Plants and Blooms. The Challenge Cup will be awarded to the exhibitor gaining the greatest number of points. For Schedules, apply to
THOS. KING, The Castle Gardens, Devizes.

NATIONAL CHRYSANTHEMUM SOCIETY, Royal Aquarium, Westminster.
GRAND EXHIBITION, CHRYSANTHEMUMS, FRUIT, and VEGETABLES,
TUESDAY and WEDNESDAY, November 12 and 13.
Schedules free on application to WILLIAM HOLMES, Frampton Park Nurseries, Hackney, London, E.
"The National Chrysanthemum Catalogue," including Supplement for 1889, now ready, 1s. 1d., post-free.

KINGSTON and SURBITON CHRYSANTHEMUM SOCIETY.
President: G. C. SHERRARD, Esq., J.P.
The THIRTEENTH ANNUAL EXHIBITION will be held in the Drill Hall, Kingston, on TUESDAY and WEDNESDAY, November 12 and 13, 1889, when, in addition to Valuable Money Prizes, the Fifth Champion Challenge Vase, value 25 Guineas, will be offered. "Open to all Subscribers of 21s." Entries close November 7. Schedules and other information of
GEO. WOODGATE, Hon. Sec.,
Warren House Gardens, Kingston Hill, Surrey.

CHELTENHAM.—Nineteenth Annual SHOW of CHRYSANTHEMUMS and FRUIT will be held in the Winter Garden, NOVEMBER 13 and 14. Liberal Prizes. Schedules on application to G. TOVEY, Waltham Villa, St. Mark's.

THE BATH CHRYSANTHEMUM SHOW.
NOVEMBER 13 and 14, 1889.
Entries close November 8. For Prize Schedules apply to
14, Milsom Street, Bath. BENJ. PEARSON, Sec.

THE SHEFFIELD and HALLAMSHIRE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.
The TWELFTH ANNUAL CHRYSANTHEMUM SHOW of this SOCIETY will be held in the Cutlers' Hall, Sheffield, on NOVEMBER 15 and 16. Schedule of Prizes on application to—
WILLIAM MARSHALL, Secretary.
17, Croydon Street, Sharrow, Sheffield.

LIVERPOOL HORTICULTURAL ASSOCIATION.
The TENTH GRAND CHRYSANTHEMUM, PLANT, and FRUIT SHOW will be held in St. George's Hall, on TUESDAY and WEDNESDAY, November 19 and 20.
Entries close November 12. Schedules on application to
EDWARD BRIDGE, Secretary,
Tarbock Road, Huyton, near Liverpool.

INTERNATIONAL.—CHRYSANTHEMUM CENTENARY EXHIBITION and GRAND WINTER FRUIT SHOW.
Waverley Market, Edinburgh, NOVEMBER 21, 22, & 23, 1889.
Over THREE HUNDRED POUNDS in PLATE and MONEY for PRIZES, including the City of Edinburgh Cup, value £20.
ENTRIES CLOSE on November 15, 1889.
Schedules and particulars on application to
Messrs. MUNRO AND FERGUSON, Hon. Secs.,
6, South Saint Andrew Street, Edinburgh.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15s. to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

DESCRIPTIVE CATALOGUE.—Roses, Fruit Trees, Rhododendrons, Conifers, Deciduous and Evergreen Trees and Shrubs, Forest Trees, Clematis, Ivies, &c., on application.
150 Acres devoted to Nursery Stock.
H. LANE AND SON, The Nurseries, Great Berkhamsted, Herts.

TO LARGE GROWERS of STRAWBERRIES and OTHERS.—Special quotations of Noble, A. F. Barron, King of Earlies, Oxonian; also most of the old kinds, which include Aberdeen Favourite, and others.
R. GILBERT, High Park, Stamford.

POETICUS NARCISSUS.—Having an enormous quantity (100,000), will sell at 4s. 6d. per 1000 at Spalding Station. Not rubbish, but good sound bulbs. Giant size, 5s. 6d.—D'ALCORN, Spalding.

100,000 HARDY HEATHS.
A Collection of 100 HEATHS, in 10 varieties, price 16s.
,, ,, 20 ,, ,, 18s.
,, ,, 30 ,, ,, 20s.
,, ,, 40 ,, ,, 22s.
Special price per thousand on application. When less than 50 plants are ordered, they will be charged at the rate of 3s. per dozen. CATALOGUES Free.
JAMES SMITH AND SONS, Darley Dale Nurseries, near Matlock.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.
FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

Camellias, Azaleas, Rhododendrons, Palms, Orchids, &c. Plants grown specially for English use.
C. VUYLSTEKE, NURSERYMAN, Loochristy, Ghent, Belgium.
Wholesale CATALOGUE now ready, and may be had, free on application to
Messrs. R. SILBERRAD AND SON, 25, Savage Gardens, Crutched Friars, London, E.C.

ANTHONY WATERER invites an inspection from intending Planters to the following, well-grown :—
ABIES DOUGLASII, Colorado variety, 4 to 6 feet.
CEDRUS ATLANTICA, 4 to 6 feet.
" " GLAUCA, 3 to 7 feet.
" " LEBANI (Cedar of Lebanon), 4 to 8 feet.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
" " LUTEA, 4 to 6 feet.
JUNIPERUS CHINENSIS AUREA, 3 to 8 feet.
" VIRGINIANA GLAUCA, 5 to 7 feet.
PICEA CONCOLOR, 2, 3, 4, 5, and 6 feet.
" GRANDIS, 4 to 8 feet.
" LASIOCARPA, 3, 4, 5, 6, to 8 feet.
" MAGNIFICA, 3 to 5 feet.
" PUNGENS GLAUCA, 1½ to 3 feet.
PINUS AUSTRIACA, 3, 4, 5, 6, to 7 feet.
RETINOSPORA PISIFERA AUREA, 3 to 6 feet.
" PLUMOSA AUREA, 6 to 8 feet.
THUIOPSIS BOREALIS, 4 to 6 feet.
" DOLABRATA, 3 to 7 feet.
THUIA LOBBII, 4, 5, 6, and 7 feet.
" OCCIDENTALIS, 4 to 5 feet.
" " LUTEA, 3 to 6 feet.
YEWS, Common, 3, 4, and 5 feet.
" Golden, of all sizes, up to 10 feet.
We have a large quantity of Pyramids, Globes, and Standards, in point of variety and size unequalled.
" Golden Seedlings, 3, 4, 5, 6, and 7 feet.
" Irish, 5 to 10 feet.
" " Golden, 3 to 6 feet.
AUCUBA JAPONICA, 2½ to 4 feet.
BAMBUSA METAKE, fine Clumps, 4 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, up to 8 feet.
HOLLIES, Green, 4, 5, 6, 8, up to 10 feet.
" ALTACLARENSE.
" HODGINS.
" LAURIFOLIA.
" MYRTIFOLIA.
" SCOTTICA.
} 3, 4, 5, up to 10 feet.
" Yellow-berried, and other sorts.
" Variegated, of sorts, 3, 4, 5, up to 10 feet.
" Golden Queen, 4, 5, 6, 7, up to 10 feet.
" Silver Queen, 4 to 10 feet.
" Weeping Perrys, on straight stems, with heads of 10 to 15 years' growth.
" New Golden Weeping, a large quantity of beautiful plants.
Knap Hill Nursery, Woking, Surrey.

LILIES and ORCHIDS.—An immense stock of recently imported Plants, compels a sale of the Established Plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains; see public journals for high prices recently obtained. The special offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and trade.
My first consignments of LILIUM AURATUM have arrived, prices 4*d*., 6*d*., 9*d*., 1*s*., and 1*s*. 6*d*. each; per 100, 30*s*., 35*s*., 45*s*., 55*s*., and 70*s*. Liberal allowance to the Trade.
Apply for CATALOGUE to
W. GORDON, The Nurseries, Amyand Park Road, Twickenham.

J. E. DIXON'S "PRESIDENT CARNOT" BRUSSELS SPROUTS.
J. E. D. will be able to supply this extraordinary fine strain at 1*s*. per packet, for season 1890. The following testimonial (one of many similar) has been received from—
Mr. GEORGE SUMMERS, *Gardener to the* Earl of Scarbrough :—
"DEAR SIR,—I have grown your President Carnot Brussels Sprouts by the side of several other well-known varieties, and have come to the conclusion that it is the hardiest and best variety grown."
London Wholesale Agents :—HURST AND SON, 152, Houndsditch, E.; COOPER, TABER AND CO. (Limited), 90, Southwark Street, Borough, S.E.
JOHN ETHERINGTON DIXON (second son of the late Edmund Philip Dixon, Seed Merchant, Hull), Seedsman, 21 and 23, Lord Street, Gainsborough.

GIANT ASPARAGUS, for forcing. Price for grand clumps per 100 or 1000 on application.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

200,000 RHODODENDRONS. — Fine, healthy, bushy stuff, splendidly budded :—
SEEDLINGS, 12 inches, 4*s*. per doz.; do., 18 inches, 6*s*. per doz.; do., 24 inches, 9*s*. per doz.
Finest named HYBRIDS, 18 inches, 18*s*. per doz.; do. do., 21 inches, 24*s*. per doz.
AZALEA PONTICA, 15 inches, 6*s*. per doz.; do., 18 inches, 8*s*. per doz.
LAUREL ROTUNDIFOLIA, 24 inches, 6*s*. per doz.; do., 30 inches, 9*s*. per doz.
IRISH IVIES, from ground, 3 to 4 feet, 25*s*. and 30*s*. per 100.
" " staked, in pots, 4 feet, 6*s*. per doz.; 5 feet, 9*s*. per doz.; 6 feet, 12*s*. per doz.
Packing free for cash with order, or delivered within 10 miles.
Special Culture of Trees, Shrubs, and Climbers, suitable for Town Planting. Special quotations for Parks, Squares, &c.
W. FROMOW AND SONS, Sutton Court Nursery and Seed Establishment, Chiswick, London, W.

BARR'S NEW DAFFODIL "MRS. GEORGE CAMMELL," The Great Spanish Beauty. Amongst Daffodils this is the most distinct in character, and the most refined in beauty; perfectly hardy. 21*s*. per dozen, 2*s*. each; extra large bulbs, 30*s*. per dozen, 3*s*. each.
Barr's General Bulb Catalogue free on application.
Barr's Daffodil and Plant Catalogue free on application.
Barr's Rare Species of Crocus and Meadow Saffron List on application.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Autumn Catalogues.
CHARLES TURNER'S New and Descriptive LIST of ROSES, FRUIT TREES, CONIFERÆ, and all kinds of HARDY SHRUBS and TREES, is now ready, and can be had free on application.
Also CATALOGUE of CARNATIONS, PICOTEES, CLOVES, and Winter-flowering CARNATIONS sent free.
The Royal Nurseries, Slough.

Special Offer of Large Well-grown Evergreens and CONIFERS, frequently transplanted, standing singly, and every plant a specimen, offered by
WILLIAM WOOD AND SON,
The Nurseries, Maresfield, Uckfield, Sussex.
Single plants supplied if required at the dozen price.

Coniferæ.
ABIES DOUGLASII, 5 to 6 ft., 18*s*.; 6 to 7 ft., 24*s*. per dozen.
" " GLAUCA, very fine, 5 to 6 feet, 24*s*. per dozen.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15*s*.; 5 to 6 feet, 18*s*.; 6 to 7 feet, 24*s*. per dozen.
CUPRESSUS LAWSONIANA, 6 feet, 18*s*.; 6 to 7 feet, 24*s*.; 7 to 8 feet, 30*s*.; 8 to 10 feet, 40*s*. per dozen.
" LAWSONIANA ERECTA VIRIDIS, extra fine, 4 feet, 42*s*.; 5 feet, 60*s*. per dozen.
PICEA PINSAPO, 2½ to 3 feet, 30*s*.; 3 to 4 feet, 42*s*. per dozen.
" PECTINATA (Silver Fir), 3 to 4 feet, 18*s*.; 4 to 5 feet, 22*s*. per dozen.
PINUS AUSTRIACA, 3 to 4 feet, 20*s*.; 4 to 5 feet, 28*s*. per doz.
" LARICIO, 4 to 5 feet, 28*s*.; 5 to 6 feet, 36*s*. per dozen.
" SYLVESTRIS (Scotch Fir), 4 to 5 feet, 20*s*.; 5 to 6 feet, 25*s*. per dozen. From nursery rows, 2 to 3 feet, 35*s*.; 3 to 3½ feet, 50*s*. per 1000.
" INSIGNIS, 5 to 7 feet, 30*s*. per dozen.
" CEMBRA, 3 to 4 feet, 15*s*. per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, 12*s*. per dozen.
RETINOSPORA PLUMOSA, 5 feet, 20*s*.; 6 feet, 24*s*. per dozen.
" " AUREA, 3 feet, fine, 20*s*. per dozen.
THUJOPSIS DOLABRATA, 2 to 3 ft., 18*s*.; 3 to 4 ft., 24*s*. doz.
" BOREALIS, 4 to 5 feet, very fine, 30*s*. per dozen.
TAXUS ELEGANTISSIMA, 1½ to 2 feet, 20*s*. per dozen.
THUIA LOBBII, 4 to 5 ft., 20*s*.; 5 to 6 ft., 30*s*.; 6 to 7 ft., 36*s*.

Large Evergreens.
LAURELS, Common, colchicum, caucasicum, and rotundifolium, 3 to 4 feet, 12*s*.; 4 to 5 feet, 18*s*.; 5 to 6 feet, 24*s*. per dozen.
" Portugal, 2½ to 3 feet, 24*s*. per dozen.
TREE BOX, green and variegated, 2 to 3 feet, 9*s*.; 3 to 4 feet, 15*s*. per dozen.
BERBERIS DARWINII, 2 to 3 feet, 9*s*.; 3 to 4 feet, 15*s*. doz.
LAURUSTINUS, 1½ to 2 feet, 10*s*.; 2 to 2½ feet, 15*s*. per dozen.
GRISLINIA LITTORALIS, 1 to 1½ ft., 10*s*.; 1½ to 2 ft., 15*s*. doz.
OLEARIA HAASTII, 1½ to 2 feet, 9*s*. per dozen, 60*s*. per 100.
COTONEASTER SIMMONSII, 3 to 4 feet, 8*s*. per dozen.
GORSE, double, fine, in pots, 8*s*. per dozen, 50*s*. per 100.
DECIDUOUS FLOWERING SHRUBS, consisting of Althæa frutex, Deutzias, Forsythias, Guelder Rose, Rhus, Ribes, Sambucus, Spiræas, Syringas, &c., at 4*s*. per dozen, 22*s*. 6*d*. per 100.
WEIGELAS, a fine collection, 6*s*. per dozen, 40*s*. per 100.
CATALOGUES Gratis on application.

DOUBLE WHITE NARCISSUS.—About 50 bushels for Sale. Price 20*s*. per bushel, on rail. Sample 50 free for 2*s*.
J. J. CLARK, Goldstone Farm, West Brighton.

Special Cheap Offer.
ISAAC MATTHEWS AND SONS have to offer 200,000 very fine plants of RHODODENDRON for forcing, Cunningham's White, Jacksonii, Caucasicum pictum, in sizes varying from 1 to 3 feet, at very low prices.
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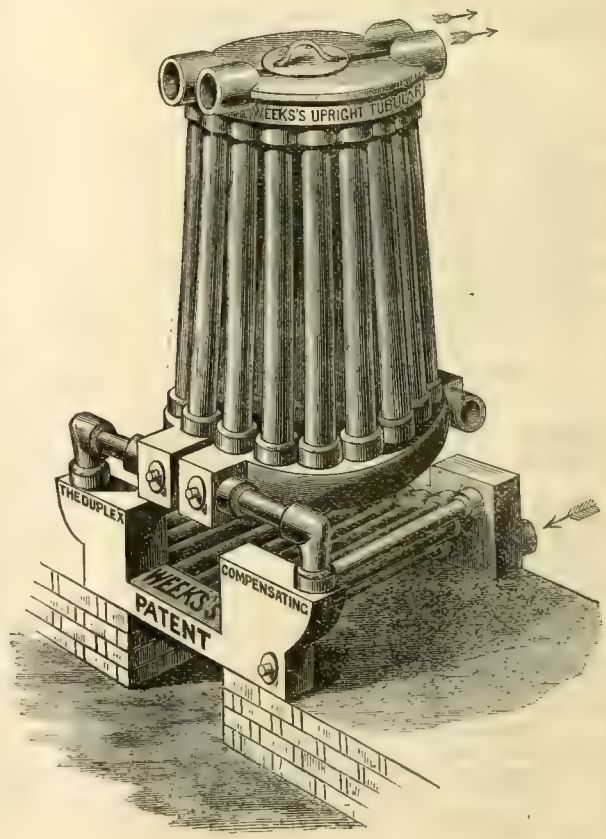
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OF A
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THE

Gardeners' Chronicle.

SATURDAY, OCTOBER 26, 1889.

HARVEST-HOME.

THAT very ancient festival, the harvest-home, has been usually celebrated with the aid of flowers, but never with such beautiful profusion in that respect, as at the present time. It seems, therefore, a proper subject for notice in these columns. Of all the festivals and periodic rejoicings that were ever celebrated in Merry England, those of the ninth month of the year were, or perhaps we may say still are, the most universal, and undoubtedly the most ancient. Cain "brought of the fruit of the ground an offering unto the Lord." The Jews were commanded, when they reaped their harvest in the Land of Promise, to bring a sheaf of the first fruits to the priest, who was "to wave the sheaf before the Lord." Wave loaves are also mentioned in the same chapter of Leviticus (xxiii.), and various kinds of live offerings, but nothing is said about flowers. When Isaiah alludes to "the shouting for thy summer fruits and for thy harvest," we are reminded that only the other day, when this year's late and tangled harvest was finished in the Fens of Lincolnshire, groups of labourers on the farms, where their masters had regaled them with beer, shouted as of old.

In later and more classic times, the harvest festival became sacred to Apollo, whose worship in this country has left behind it an interesting reminder in the May-pole. It was extremely suitable to offer garlands of flowers to Apollo, or the sun, on May-day, since they were the product of his presence and influence, and the later offerings of harvest were acts of devotion which can readily be understood. It cannot be imagined that English labourers were less devout than pagans, and accordingly floral tokens have been largely used at harvest-homes. Bullocks and sheep were slaughtered, too, and beer was freely broached. These substantial offerings were not made exactly in accordance with the old methods,

for our faiths and our customs have changed, and the good things which were once barbarously wasted in honour of Apollo were afterwards served up at the harvest supper, when the jolly reapers and their wives ate them up.

As to the shouting which has been referred to, we well remember to have heard, both in Suffolk and Essex, the roar, when heard too close, and the peculiar and pleasing sound at a distance of "Hallooing Largess." This custom has been observed in several different ways. As we have already intimated, the "hip-hip-hurrahs!" were loud this year at the carrying home of the last load, and they were heard in several of the eastern counties, as well as some others.

Largess has fallen very much into disuse. It was formerly solicited by the labourers on each farm from any well-dressed person whom they might chance to meet on their own ground, and from the neighbouring farmers, and tradespeople of the village, and the collecting party shared the largess at the end of the day. Sometimes shouting for largess took place after the "Horkey," or harvest supper, when the labourers assembled on some eminence, or in a conspicuous place, and shouted with all their strength, "Holla, holla, holla—largess!" The first three words were uttered quickly, and the last with the full strength of the lungs in a long-drawn roar. No one, of course, came forward with his cash, but the whole country was warned for miles round, on a still night, that largess would be solicited on the following day. Bloomfield, an excellent authority on this subject, says, in his poem called the *Horkey Night*:—

"'Twas near upon as light as noon,
A largess on the hill,
They shouted to the full round moon;
I think I hear them still."

It cannot be said that the harvest supper was always a floral festival, for we can still see very distinctly in our "mind's eye" through a long vista of years, the first of these feasts that we ever attended, and there were no flowers. At later ones, the village school-room, where we met, was profusely adorned. The custom varies, and masters differ much in character; but in all cases the personal tie between him and his men is not so close and confidential as it once was. Formerly, the toast of the evening on the removal of the cloth was the health of the master, and the following verses were sung heartily by all present—boys, men, and wives:—

"Here's a health unto our master,
The founder of the feast,
And I hope to God with all my heart
His soul in heaven may rest.

That everything may prosper
That ever he takes in hand,
For we be all his servants,
And all at his command."

This catch, which was carried on through many verses, and included the mistress's health, is probably forgotten now even by the old men.

As our earliest recollection does not enable us to describe harvest-homes as floral festivals, we must briefly refer to the bringing in of the last load in 1824, as described in Hone's *Every Day Book*. The village Maypole had been decorated for the occasion, with flowers and ribbons fluttering in the evening breeze. The last load stood waiting near it, laden with its full complement of men, women, children, flowers, and corn; and on the leading horse, blushing and smiling, and showing her white teeth, sat a rustic damsel representing Ceres, with flowers twined on and under her hat. All the horses were adorned with no niggard hand, with Sunflowers in their blinkers. In fact, the floral display and the Maypole were worthy of Apollo, though the lines appropriate to the occasion cannot be called classic. They run as follow:—

"The last ingathering of the crop
Is loaded, and they climb the top,
And there huzza with all their force,
While Ceres mounts the foremost horse;
'Gee-up!' the rustic goddess cries,
And shouts more long and loud arise;
The swaggering cart, with motion slow,
Reels careless on, and off they go!"

Several old writers describe the last load of corn as crowned with flowers, and this was driven through the village street and then taken to the barn with much "shouting" and rejoicing, as in the days of Isaiah. Ceres was sometimes represented by an image decked and crowned with flowers, with a sheaf of corn placed under its arm, and this symbolical figure was called in Northumberland a "harvest doll" or "kern (corn) baby." In Devonshire, at the close of reaping, some ears of the last of the corn were twisted into a curious kind of figure, which was brought home with acclamations, and hung up over the farmer's table. Here it remained till the next year, and nothing would induce the owner to part with it, lest ill-luck should befall him.

Leigh Hunt, writing more than seventy years ago, speaks, of harvest-home as the greatest rural holiday in England. We hardly experience now, however, the drawback he refers to in the diminution of flowers in the month of September. The *Norfolk Chronicle*, of September 28 last, contained thirty-five notices of the harvest thanksgiving services which are now held in many places in Norfolk, and elsewhere, and the details published in some of these very interesting and welcome descriptions, enable us to compare Leigh Hunt's list of flowers which in his time were available for decoration, with those which are now at command. The flowers at the early period of the century were Nigella, Zinnia, Polyanthus, Mignonette, Capsicum, Michaelmas Daisy, Auriculas, and China Aster. The trees and shrubs in flower in September were Tamarisk, Althea, Venetian Sumac, Pomegranate, Passion-flower, Trumpet-flower, and Virgin's Bower or Clematis. On the occasion of the thanksgiving services held at the Church of St. Gregory, Norwich, on September 20 and 22, we are told that—

"The side-panels of the reredos were outlined with Virginian Creeper, and covered with a delicate trellis-work of green-painted wood, upon which Ivy tendrils were trained, and into the centre of each panel a small bunch of Wheat and wild berries was affixed. The tablets immediately at the rear of the Communion-table were spanned by an imposing arch, composed of Oats, Barley, and Wheat, and bunches of black and green Grapes. Small sheaves of Barley and Wheat, and vases of single Dahlias, in crimson and white, were placed upon the Communion-table, and the floor within the railings was occupied by Japanese Lilies and other flowers. Ivy and Sunflowers adorned the sill of the east window, and the gas standards were entwined with Oats and Dahlias, and had Bulrushes at their bases. Autumn blooms, Wheat, and Rushes, were used in the decoration of the choir-stalls and prayer-desks. The brass lectern had its pedestal prettily decorated with Wheat and Ivy, and upon the floor at its base was a layer of fruit and flowers enclosed in a framework of Ivy leaves. The dwarf screen was richly bedecked with Asters, Dahlias, Ferns, &c.; each column in the nave was decorated with Rushes, and the gas standards hung with flowers and evergreens. Asters and Dahlias, Grapes and Sunflowers, gave to the pulpit a gay appearance, and the general richness of the colours was relieved by a white cross composed of pure white Chrysanthemums, which occupied the centre panel. The bowl of the font was trimmed with Virginian Creeper, Hops, berries, and fruit; the pedestal was covered with Ferns, Gladioli, fruit and flowers."

The decorations at St. Helen's, Norwich, were excellent, and as some of our readers may derive useful hints from these details, we publish this additional example of church decoration suitable to the close of harvest:—

"The altar bore in bold characters the inscription, 'I am the true Vine,' fringed with Hops and ears of corn, relieved with flowers. Upon the altar-table a magnificent cross of white Chrysanthemums, together with a loaf of bread, and a bunch of Grapes, was placed. The altar-rail was draped with Ferns, while running the whole length of the steps was a fine collection of choice flowering and foliage plants. The pulpit was embellished with a wreath of Oat ears, relieved with red Virginian Creeper and white Chrysanthemums, and a display of beautiful white flowers, and a collection of fruit embedded in moss and Ferns, strewed the floor at its base. Above, and on the wall immediately behind, appeared a large and well-executed design in rich-hued Dahlias, flanked on each side by rows of Laurel leaves. The window-sills of the church were covered with moss, vegetables, and fruit; while the decoration of the font was very prettily effected with a combination of red and white flowers, the pedestal hung with wreaths of red Virginian Creeper, while the summit was crowned with a dome of white Dahlias and Asparagus."

At Fakenham, Burnham Norton, Framingham Pigot, &c., where cottage gardens abound, and flowers, fruit, and vegetables are always plentiful, and at many other Norfolk villages, the decorations were excellent. At Burnham Norton, Pampas-grass was used with great effect. The pulpit had a base of moss, on which were fruits, and a basket of Grapes, edged with Cedar and wild Hips. In the font was a device of moss, Fern, and white flowers floating in the water, the Maidenhair Fern reflecting its quiverings in the liquid mirror with happy effect.

Poetical on paper, and exceedingly picturesque, as the old methods of celebrating harvest-home may have been, we are bound to admit that the modern plan of thanksgiving services, and a collection on behalf of the "Royal Agricultural Benevolent Institution," or for some other useful object, are far better. *H. E.*

New or Noteworthy Plants.

CYPRIPEDIUM MINERVA, *n. hyb.*

A new hybrid Cypripedium, from R. H. Measures, Esq., of The Woodlands, Streatham, raised by crossing C. venustum and C. Harrisianum elegans, the former being the seed parent. This particular combination does not appear to have been effected before, and I therefore propose to name it as above. Like most hybrids, it is tolerably intermediate in character, though the influence of C. venustum is perhaps the most strongly marked. The leaf is much like venustum in shape and colour, but the arrangement of the tesselations is very similar to what obtains in the other parent, namely, a series of narrow irregular lines. The dark markings on the back of the leaf, so characteristic of C. venustum, are also nearly absent in our novelty, except when very young. The peduncle is dark maroon-purple, and pubescent, the sharply-keeled bract not half as long as the ovary, and somewhat striped with dark maroon-purple. The sepals are much as in C. venustum, but the upper one has a band of purple in the centre, and a few other traces of the same colour near the base. The petals, lip, and staminode also closely approach C. venustum in shape. The petals are of a pleasing shade of light maroon-purple, with greenish nerves, the middle nerve very dark purple; as are also the lateral nerves of the superior half of each petal near the base. The lip is dark maroon-purple in front, the nerves closely resembling those of C. venustum in character; the spots on the side lobes are large, and the markings of the inside of the lip very beautiful. The staminode is light brownish purple, a little marbled with a paler shade, and the whole is of very shining appearance.

The various modifications mentioned are, of course, in the direction of C. Harrisianum—itself a hybrid between C. barbatum and C. villosum, so that three distinct species are concerned in the parentage of the present novelty. *R. A. Rolfe, Herbarium, Kew.*

New Ferns.

Antrophyum Mannianum, Hook. — This is a very remarkable Fern from the island of St. Thomas, where it grows near S. Pedro and Lagoa Amelia, at an elevation of 1250—1400 metres; also at Agua Gombola (200 metres). The fronds are broad, roundish, entire, narrowed at the base, and at the apex acuminate; 1 foot in length.

Asplenium dimidiatum, Swartz.—This is another very decorative little Fern, from the Island of St. Thomas, where it grows at Bon Successo, at an elevation of 1075 metres. Fronds pinnate, pinnules large, rhomboid, with very elongated apex. They resemble very much the pinnules of some species of Caryota. Length of the fronds about 1½ foot.

Davallia nigrescens, Hook.—This pretty Fern grows on the island of St. Thomas, at an elevation of 1000—1300 metres. The large fronds are very regular, quadripinnate. The segments are linear, half a line broad, 2 lines long. This is one of the finest ferns. *U. D.*



Fig. 65.—Terrace Garden, South Front, Castle Ashby.

CASTLE ASHBY.

We now give two views of this interesting place, the one, fig. 65, representing a view of the castle itself on the south side, where the grounds are laid out in a series of terraces at various levels, and connected by steps; there are elaborate balustrades, &c., of terra-cotta. In the spring and summer months the flower-gardening is a great feature at Castle Ashby, and the garden here shown is all aglow with colour. These gardens were mainly formed as we now see them by the late Marquis of Northampton, and contain many instances of the pretty conceits he so much favoured, in beds and parterres, balustrades, and, as will be observed, the balustrade on the top of the castle is constructed of letters forming a motto.

On p. 471 is represented a view from the carriage-drive to the castle mansion. The charming natural picture presented to view gives a glimpse of the bridge which spans the ornamental water at Castle Ashby. A dense umbrageous growth of trees lines the water at this point, and delightful vistas are opened up to view on either side from the ornamental stone bridge. Water Lilies abound; the yellow water Iris grows in luxuriant profusion, and many wild flowers find a congenial home on the wooded banks.

Nursery Notes.

MESSRS. JOHN PERKINS & SONS, NORTHAMPTON.

In December, 1885, there was published in these columns a short account of the above nurseries, in which they were spoken of as nurseries for specialties, although most of the hardy trees and shrubs grown in nurseries are found there. The Billing Road nursery lies just on the outskirts of the town, and consists of more than 115 acres of southerly sloping ground, the soil of which is a fairly light ferrugineous loam overlying ironstone rock. It is, therefore, in its nature well adapted for nursery purposes. Everything planted in it assumes a rich shade of green, growth is compact and sturdy, not robust and sappy, and rooting seems to be so perfect that the loss of one plant in a hundred is considered to be excessive amongst transplanted stuff. Conifers grow well, soil and situation alike favouring them. Owing to the contemplated extension of the county lunatic asylum, some 20 acres, at present included in the nursery, will have to be given up shortly; but the firm possessing fields contiguous to their grounds on the east, the stock, such as may not be sold forthwith, will simply be shunted on to the new ground; and in providing against contingencies, a very commodious and handsome dwelling, together with offices, &c., has been erected on the verge of the newly-broken land. We should suppose few nurserymen possess a dwelling superior to this one. Built in old English style, with overhanging upper storey, with wall tiling, handsome chimney-stack, and everything in keeping outside and inside, it is just the kind of house for the prosperous nurseryman.

The staple commodities of the nursery are Yew, Oak, Ash, and of these immense numbers were observed in all stages, from seedlings up to plants of a size to plant out at once. For these species of trees this is the one available place in the Midland counties.

The area under Ash amounted to 2½ acres; and other trees occupying large areas, were Acer colchicum rubra, A. virginicum rubrum, A. Reitenbachi and A. platanoides Schwedleri, and A. p. globosum. Another tree, and one whose imported timber is now much in vogue for furniture making, is the Black Walnut, Juglans nigra, of which considerable numbers were seen, apparently about two years' old, in fact, just of the age and size to plant in plantations protected from stock. This tree is quite safe from hares and rabbits unless in very hard winters, and it is a fairly rapid grower. It does well in wet soil, provided the moisture is not stagnant.

Ulmus Van Houttii aurea is a pretty Elm, with yellow variegated foliage. Beech and Birch are tree found in large breadths, as also Horse Chestnut of all the known varieties; and Platanus occidentalis and P. orientalis. Limes of all ages up to those suitable for avenue and street planting were observed, the older trees having stout stems and well formed heads, betokening careful transplantation and absence of crowding, as did, indeed, the whole of the stock.

Of deciduous plants noted in smaller yet relatively large numbers, mention may be made of Prunus Pissardi, double-flowered Cherry, several varieties of Crab, including the well-known Siberian and scarlet, and the less well-known Transparent, Paul's Imperial, The Fairy, and John Downie. In Poplars were Boller's variegated, large numbers of P. Abele, &c. Rhus typhina, very pretty stuff; R. cotnus, the wig-shrub, and many another plant for whose notification we have no space.

The raising of Quicks (Whitethorn) is a specialty, and as much as 8½ acres stood under this crop. There were little seedlings and plants of all sizes up to the planting size, and so great is the demand for these plants that it has long since overtaken the supply. These, with almost everything else grown here, are transplanted annually, so that losses from removal are rare when the operations of planting and the subsequent care of the plants are what they should be.

Almost as much land was occupied with Laurels in variety as with Quicks. The species grown besides the common or Cherry Laurel (Cerasus lauro-cerasus) are the Caucasian, the round-leaved Caucasian, always of a healthy dark green colour, and quite hardy; the broad, otherwise latifolia, and a new species named Otina?

Conifers, especially such species as find employment in these islands as plantation timber trees are raised in large quantities. Thuia Lobbi, a species of great expectation as a timber tree, is being largely raised, and to the firm is due the credit of being the first to note this fact, and to raise it in quantity. It is a tree that is not particular as to soil; but it is better not to plant it on the chalk unless that substance be at a great depth. Austrian and Corsican Pine, Douglas Spruce and Canadian Spruce occupy considerable areas in their various sizes. In the nursery, Pinus Laricio (Corsican) exceeds the Larch in rapidity of growth.

Good stocks were observed of Abies Balsamea, Picea lasiocarpa, P. nobilis, P. Nordmanniana, and P. pinsapo, and of Pinus strobus, P. cembra, and P. excelsa.

Cupressus, Thuia, Thujopsis, Sequoia gigantea (Wellingtonia), and Taxus in variety, form no unimportant part of the stock of the nursery.

In fruits, most of the best kinds and varieties of these are to be found here, in stout well-furnished examples; trained trees, maidens, and standards forming the bulk of them. If we may specify, we should name the Cherries, Apples, and Plums as being more than ordinarily fine stocks. Amongst Apricots, Luizette, a French variety, was mentioned as being extremely hardy, not one having

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suffered by the frost in the autumn of 1888, and the winter of 1889; whereas not ten remained of a break of 500 of the Moorpark variety. The stock of this novelty was strong and healthy.

We left the nursery with an idea that it was one of the cleanest we had ever seen, and out of which it would be quite safe to purchase the youngest or the oldest plant with the certainty of its living and thriving if given ordinary attention.

The Castle Nurseries, West Norwood.

Noted for its select collection of Orchids, its fine stock of exhibition stove and greenhouse plants, both foliage and flowering, its neat array of Pitcher-plants, and its fine selection of Chrysanthemums, Bouvardias, and other florists' flowers, the nursery of Mr. H. James maintains its old repute. The several houses of Orchids have perhaps a better show for flower this year than for some years past, the varieties of Cattleya Trianæ being well advanced, and C. Mendelii and C. Lawrenceanus well sheathed—one fine specimen of C. Mendelii having upwards of thirty sheaths, which give promise of something like a hundred flowers on a single specimen. The true Oncidium tetracopis and others of that section are sending up strong spikes, and Southgate's distinct variety of Masdevallia ignea appeared amongst a selection of these plants. Some good Sophronitis grandiflora were in bloom, also fine plants of Cypripedium Spicerianum and other Cypripediums. Among the Dendrobiums were noted a distinct, white-petalled form of D. nobile, which used to be so much admired in the Downside collection. There is also a good lot of white Lælia anceps in fine order. The Odontoglossums and other cool Orchids are in good condition, and in a corner of the cool house were vigorous plants of Drosera capensis and D. dichotoma, which Mr. James raises freely from seeds of his own saving—a mode of propagation of these plants which is not often heard of, but which is one that should be generally practised.

Selected varieties of Anthurium Schertzerianum occupy a house to themselves, and are represented by large plants of A. S. Wardii, and other noted forms; and near-by was a batch of a new form of Asparagus plumosus, which seldom gets more than a few inches in height, and never "runs." In another house the old trailing Asparagus plumosus was observed in a new guise, its branches being literally covered with small starry white flowers.

A fine house of Ericas, and another of specimen new Azaleas, promise good subjects for next summer's shows. Among the stove plants, the specimen Rondeletias, Dipladenias, Allamandas, Plumbago capensis, &c., are still in bloom, and the large Crotons, Dracænas, and Nepenthes beautiful in foliage, and the latter loaded with fine pitchers. Among the Chrysanthemums just housed are good examples of most of the best varieties, and all are well set with flowers, the most attractive at the present time being Lady Selborne, a white flower of the James Salter type, and of which large numbers are already in bloom. For an establishment of moderate size, the Castle Nurseries contain a good proportion of fine specimens and valuable plants.

Messrs. John Peed & Sons' Nurseries.

The suburban firms are moving with the times, and apparently do not intend to let the great provincial nurserymen have more than a fair share of the fruit-tree trade, which is now attracting so much attention. Messrs. Peed have many local advantages, as at Mitcham Road, Streatham, they are well within reach by road and rail of the favourite residential parts of Surrey. To their good old-fashioned stock of standard trees, they have of late years added bush and pyramid Apples on Paradise stocks, and Pears on the Quince. The special culture of dwarf trees is receiving the personal attention of the senior partner, Mr. John Peed, and under his experienced hands a choice collection of Apples, Pears, Plums, Peaches, and other fruits is constantly being improved by the addition of new varieties. The skill which was formerly so successfully applied by him to the training of specimen stove and greenhouse plants for exhibition, is now more particularly devoted to the production of fruit trees of every kind and every form. The soil of Mitcham—a deep sandy loam—is admirably adapted to the nursery business, and everything seems to thrive there. The situation is rather exposed, and the subsoil being naturally well drained, the stock ripens its wood earlier, is not so tender, and bears removal better than where grown in a sheltered and moist situation. Roses are largely grown. Herbaceous plants are much cultivated, and the glass-houses are full of stove and greenhouse plants in endless variety. Messrs. Peed are also very successful growers of Grape vines. *W. R., Streatham Hill.*

EDIBLE FUNGI.

It is a curious fact, that that which one race of people will throw aside with disgust, another will think perhaps one of the most delicious articles for human consumption.

This is exactly the case with fungi, to which family the "Briton's cherished Mushroom" belongs. What does an Englishman like better than go out into a field and gather his handkerchief full of Mushrooms, so that he may make a meal therefrom? On the other hand, propose to him a meal of what are commonly known as toadstools, and he will make grimaces worthy of a schoolboy who is about to take castor-oil. In some countries on the Continent it is quite the reverse—in Italy, for instance, where the Mushroom is regarded with great abhorrence—so much so, in fact, that one of the greatest evils one man can wish another is "that he may die of a Pratiola." Dr. Cooke says that it was only when Vittadini stood up as one of its champions that it became in a small degree recognised.

The French, however, are somewhat more favourably inclined towards the use of it, though they use many of the other species which are found throughout their fertile country.

Great care should be taken when collecting these fungi that the proper sorts are procured, as there are some species which are really poisonous. A few of the edible species are :—

Agaricus campestris, the common Mushroom, the qualities of which we are all very well acquainted with; this comes under the series Pratellæ, in which the spores are of a brown or purplish-brown.

A. procerus may be recognised by its long stem, which is hollow and bulbous, the pileus or cap is scaly; it is useful for culinary purposes, making very fine catsup.

A. ostreatus is commonly known as the Oyster Mushroom, it is found growing in large clusters upon trees, the Laburnum being a favourite; it may be gathered in September, and may be recognised by its rather dirty-white appearance.

A. tricholoma.—Under this name are included all the toadstools, or, as some people call them, toad-skips. All the different kinds are edible, and by some are supposed to be wholesome. Care should be taken in cooking, so that they may be well baked, as this is often the case whereby Mushrooms will make a person ill. The toadstools have a fleshy stem, varying in length from 1 to 3 or 4 inches. The gills have a notch at the part nearest the stem; the veil is invisible almost.

Coprinus comatus is conspicuous at this time of the year. It is known as the "Maned Agaric," from its appearance to a wig being placed on a stick. This genus differs principally from the Agarics in the deliquescent character of its membraneous gills. This species, when gathered young, is edible.

Marasmius oreades, one of the "fairy rings," is a very good species for culinary purposes; it is usually found growing amongst others, which, though not poisonous, are best left alone. These latter may be recognised by having narrower gills, and the stem covered with white down to the base. The way in which these rings appear, have given rise to various theories as to their cause. Berkeley says "that they originate from a single fungus, the growth of which renders the soil immediately beneath unfit for reproduction; the spawn, however, continues to spread, and in the following year produces a crop which spreads again, as the soil from which it originated forbids its return." He says "this mode of growth is far more common than is supposed, and may be observed constantly in our woods, where the spawn, can spread only in the soil or amongst the leaves and decaying fragments which cover it."

Boletus edulis is reckoned one amongst the finest of the edible species, it is quite common and may be recognised by its brown cap; the under surface is close and perforated with apparently small pin holes, this surface is in the first place white, then yellow at which stage it should be eaten, finally changing to green, by which time it will have become unfit for food.

Lycoperdon giganteum is known by almost every one under the name of the "giant puff-ball." For cooking, the puff-ball should be gathered when young and snow-white colour, finely sliced, and fried with butter, with a flavouring of pepper and salt; when cooked in this manner the dish will compare favourably with many of our most expensive dishes. This fungus has other qualities beside that of being edible: the spongy portion of it can be made into tinder, which, when burnt, is used as a narcotic; the dust of it is very useful for healing wounds. *P. Weathers.*

ORCHID NOTES AND GLEANINGS.

CATASETUM BUNGEROTHII VAR. AUREUM.

It is, perhaps, a little difficult to decide which is the more beautiful, the golden or the ivory-white form of this showy Catasetum, but the former is certainly the less common of the two. It was described in *Lindenia*, vol. iii., p. 43, t. 116, under the above name, and, if the colour is faithfully reproduced, it is certainly a very brilliant variety. A similar but somewhat paler form came from R. H. Measures, Esq., of the Woodlands, Streatham, the other day, for determination, and must be referred to this variety. The flowers were of great size and beauty, the lip measuring 2¾ inches in diameter. The species is of recent introduction, but has already given evidence of considerable variation, as the variety Pottsianum (*Lindenia*, vol. iii., p. 19, t. 104) has the petals beautifully spotted with reddish-purple. It is somewhat singular that the species should have remained so long undiscovered by horticultural collectors, for it was obtained over thirty years ago by Spruce. The fact may not be generally known, but such is the case; and how it was discovered was, that I unearthed a wild specimen in some out-of-the-way genus (I forget which), where it had laid unnamed and unrecognised, probably from the date when Spruce's specimens were incorporated with the Kew collection. I instantly recognised it, and of course transferred it to its proper position. No evidence at present seems forthcoming that any one obtained specimens after Spruce's time until it was met with by M. Linden's collectors. *R. A. Rolfe.*

The Female of Catasetum Bungerothii.

A short time ago the female flower of Catasetum Bungerothii became known, one solitary example having appeared, on a male raceme, in the collection of the Compagnie Continentale d'Horticulture, of Ghent, Belgium. That was represented in these columns on April 13 last (p. 461, fig. 83). Evidence is now forthcoming which tends to show that this flower is somewhat abnormal in character, for the female has now appeared in three other collections, and in no case does it agree with the one figured. First it appeared with Messrs. F. Sander & Co., of St. Albans; then with Mr. White, of Arddarroch; and a few days later it came from Messrs. Backhouse & Son, with a request for the name. In each case a female raceme alone was produced, and the peculiar reflexed

margin of the hood (a feature I have not observed in any other species) was absent. So that the most obvious difference between the present one and other known females is the greater length of the hood. The present evidence, therefore, goes to confirm the opinion I have previously expressed, viz., that the sexes in Catasetum are normally borne on distinct plants, but occasionally both kinds of flowers are produced on the same individual—sometimes on the same raceme. The females of many species still remain unknown, but we may hope that the gaps in our knowledge may be gradually filled up, for there is evidence of a considerable number of species being now in cultivation. *R. A. Rolfe.*

Oncidium Mantinii.

A fine specimen of this handsome cool-house Orchid is now in bloom with G. H. Baxter, Esq., Hutton Park, Brentwood. The plant in growth is very close to O. Forbesii, and it seems to bear the same relation to that species that O. Marshallianum does to O. crispum, viz., a sport or seminal variation, in which an almost wholly bright golden-yellow lip is developed. The lip of O. Mantinii has a few bright reddish-brown spots, and it has been suggested that the plant is a hybrid between O. Marshallianum and O. Gardneri, but in view of the great variability of the whole of this section of Oncidium, and seeing that the plant is almost identical with O. Forbesii, there appears to be little ground for the conjecture.

Aërides Lawrenciæ Southgatei.

This distinct and noble Aërides in the collection of R. H. Measures, Esq., has now two fine spikes of between thirty and forty flowers each. It differs from the type in its freer growth and more distant leaves, its larger flowers and the peculiarly bright carmine-crimson of the tips of the white segments, and of the base of the spur. Mr. Measures' plant is over 4 feet high, but having lost some of the bottom leaves, it has to be lowered, after which the old stem should furnish numbers of this fine plant.

Cattleya Bowringiana.

There is a brightness about the flowers of this worthy introduction of Messrs. Jas. Veitch & Sons, which renders it one of the most attractive of autumn flowers. A fine show of it is now to be seen in the Orchid-houses of R. H. Measures, Esq., at the Woodlands, Streatham. The flowers, which are equal to those of a good C. Skinnerii, vary in tint from pale-lilac to rich rosy-purple, with various shades of dark crimson on the front lobe of the lip. Some of the specimens have twelve or more flowers on a spike. Whatever resemblance the flowers may have to those of C. Skinnerii, they are borne on a totally different plant, the curious swollen base to the pseudobulbs; their loose sheaths, which remain green a long time; the glaucous foliage, and other characteristics making it easily distinguishable from that species.

C. Bowringiana, which is a very easy plant to cultivate, was introduced from British Honduras, in 1884, and received a First-class Certificate from the Royal Horticultural Society, October 27, 1885, under the provisional name of C. autumnalis, the certificate being re-awarded when the plant was exhibited under its authoritatively given name, C. Bowringiana. *J. O'B.*

Cattleya Mastersonle.

This is the result of a cross between C. Loddigesii or C. labiata. It is a free-growing plant, which thrives in an admirable manner if its requirements are properly administered to; this is an important factor in the cultivation of all subjects. If it be found that a particular plant does not succeed under one mode of treatment, another system should be tried until success is attained; but care should be taken to give each trial sufficient time to be thoroughly tested, for plants do not at once spring rapidly from one state to another, but require attention or watchful care to restore them if in a bad condition. It is well to procure a healthy subject to start with if possible; but sometimes one becomes possessed of a plant which sadly lacks vigour, and we have found from experience that unhealthy Cattleyas are frequently very difficult to restore to a flourishing condition. They require careful attention in the matter of heat or moisture, and situation we have found to be of the greatest importance. For instance, when a Cattleya has become shrivelled or unhealthy, we have found it a good plan to place it in a shady position, where it may be supplied with moisture about its stems and foliage; but this, again, requires thought, as much depends upon the season of the year. If the weather be hot, a slight syringing in the morning and afternoon will be highly beneficial, until the stems plump up and commence to root, when the plant or plants should be gradually inured to more light, care being exercised with regard to the moisture supplied, when it will recover vigour and health. When plants are in a sickly condition, they should never be allowed to bear any flowers—a process which exhausts them very much—and their energies will be better exerted in the production of new growth. Thus every plant in a collection should be under the watchful care of a responsible head, whose chief aim is to see that every plant is thriving, and upon the least sign to the contrary, at once set about its restoration. The plant will have been suffering some little time before its condition is noticeable, and will require immediate attention, as delays in such cases are often serious and dangerous.

We find the Cattleya in question succeeds either in a pot or hanging-basket, but in both cases it must be kept near the roof-glass, in order to afford it as much light as possible. It should be potted in good fibrous peat, from which all the fine particles have been shaken, to which may be added a little chopped sphagnum moss, the object in chopping the latter being to allow of its mixing in a better manner with the peat fibre. In potting or basketing the plants a few nodules of charcoal should be added from time to time, which allow the root more freedom, and also assist in keeping the soil more sweet about them. The drainage must also be ample and thorough, as the roots require a fair amount of water during active growth; but it requires to be carried quickly away, and everything about them should be kept in a sweet and healthy condition. "*Orchid Album,*" 1889.

FRUIT CULTURE AND CONFERENCES.

Now that the attention of the country is being drawn more and more to the benefits likely to accrue from the extension of fruit-growing, we may expect a great development of it in every direction; and it surely behoves the horticultural press of the country to see that all the useful information available is laid before its readers. Conferences are excellent things in their way, and the example set by the Royal Horticultural Society, and also by the British Fruit Growers' Association, who have hitherto met at the Crystal Palace, Sydenham, in encouraging these Conferences, might well be followed in provincial centres throughout the country; and we may now hope that the example of Conferences on a variety of matters of great horticultural interest will be taken up and receive a hearty recognition from country gardeners, and from all who are interested in horticultural progress, and especially in fruit-growing as an important industry.

The development and advancement of fruit and vegetable culture according to the best methods would, in any district, be of so far-reaching a character, that more good might be expected from it than if ten times the amount of time, money, and labour, expended in promoting it, had been given in prizes at fruit and flower shows. I have not a word to say against horticultural exhibitions rightly conducted, for they are of great benefit to the cause of horticulture, and have been the means of stirring up a spirit of emulation amongst gardeners and amateurs, which has resulted in great improvements in the quality of garden products. Let the provincial exhibition continue to go on and increase, if for so desirable an end; and, in truth, it might be the best agency whereby Conferences might be managed, and in some cases the exhibition day might be selected as being the most convenient one for gardeners and others to attend a Conference. My experience in London would lead me to the conclusion that gardeners would be quite as ready to read papers giving the result of their experience in the culture of fruit, or any other course of garden management, as they would be to compete for prizes. Take Manchester, this being one of the largest of provincial horticultural centres, as an illustration of the good that may be done, if this work were taken up by the Council of the Manchester Royal Botanical and Horticultural Society.

There have been seen magnificent fruit exhibitions in the gardens at Old Trafford, and as exhibitions of horticultural produce they have left little to be desired. The most deserving productions have been awarded prizes, the people flock to see the shows, wonderingly inquiring how such productions were obtained, under what conditions they are grown, &c. Now that the necessity for trustworthy information has arisen, we may be assured that the gardeners of England need only to be applied to, and they would be found eager to respond. One of the members of the Council of the Botanical and Horticultural Society of Manchester, Samuel Barlow, Esq., of Stakehill House, Castleton, has a garden of hardy fruit trees at Shimmda Hir on the Little Orme, from which a fund of practical information bearing upon the culture of fruit trees in North Wales might be derived. The house and garden are near to Llandudno, say about 2 miles from the centre of the town, and Mr. Barlow has planted about 4000 to 5000 fruit trees. The garden was broken up from the hill-side, which may have been grass land for hundreds of years; the soil, of considerable depth, is naturally rich, and in days gone by the spot was the haunt of myriads of waterfowl. One of the best positions on the Little Orme was chosen for the garden, but what seems to be of the most importance is the fact that there must be hundreds, nay thousands, of acres of soil as good and in quite as favourable positions in North Wales, where the land is at present not worth 7*s.* 6*d.* rent per acre, and which might be turned into flourishing fruit gardens. What about the expense? may be the query of some interested enquirer. Indeed, this is the most important point always; but, in fact, there is no great expense to be incurred, for those hill sides are drained naturally, and all that is required to be done is to trench up the ground, say 18 inches deep, and stir up the sub-soil about 6 inches more.

These hill sides are also naturally manured. Even if no account be taken of the grass being browsed over by cattle, the fibrous roots of the grasses have formed a mass of decayed fibre about a foot in thickness, and, as all practical men are aware, no manure is needed at first when pasture land is broken up, even if it has been laid down only twenty years, let alone for centuries. This is the kind of soil the garden at Shimmda Hir consists of. I have visited the garden twice at the gathering time of fruit, and can truly say that I never saw anywhere such clean, vigorous growth on Apple or Pear trees, or fruit so clear in the skin and perfectly sound. The trees are yet but young ones, and this year they have produced fruits of superb quality. Mr. Barlow writes me to say that his finest Apples were Ribston Pippin, Cox's Orange Pippin, Washington, and King of the Pippins. He exhibited Apples and Pears from this garden, at the Manchester exhibition, taking first place in a large competition. His best varieties there, were Grenadier, Warner's King, Peasgood's Nonsuch (this Apple has now taken a leading place for its large size, fine form, and great beauty), Gloria Mundi, Cox's Pomona, an excellent, free-bearing culinary Apple, which has been of excellent quality and superbly coloured this year; Stirling Castle, another standard fruit; Emperor Alexander, Beauty of Hants, Cellini, Eclinville, Golden Noble, and Oldenburg.

Pears succeed in a remarkable manner in the garden on the Little Orme, as will be noted from the fact of Mr. Barlow having six specimens of Pitmaston Duchess which weighed together 7 lb. 15 oz. Mr. Barlow is a gardener by nature, who would, if he could, live in his garden, and sleep under the trees; but I know enough of the fruit garden on the Little Orme to be able to assert, that it owes as much to Nature as it does to Art, for we walked round the garden and hillside together before the estate was purchased; and the first thing that arrested my attention most, was the splendid condition of the fruit trees, which at that time were not much cared for. It was also the gathering time of fruit, and I believe that I made the remark, "that ground which could produce such fruit trees as these would grow anything." It must not be inferred, from what has been stated, that the winds do not blow at the Little Orme, for they come up the glen sometimes with great force. I do not mean to dilate further upon the excellence of the fruit produced here, but merely suggest the possibility of land on the Welsh hillsides being made to produce sufficient fruit to supply the needs of the inhabitants of these islands; and Mr. Barlow has shown us how well adapted soil and climate are for the purpose. The exhibits from Shimmda created a sensation at the Middleton Agricultural show, as well as at the Manchester show, and what an excellent sequel to the exhibition at the latter place would have been a paper by Mr. Barlow on the methods pursued in producing Apples 22½ oz. weight each, and Pears to turn the scale at 22 oz. I earnestly hope this matter will be taken up by the craft, and I am quite sure that if the Royal Horticultural Society could indicate a way of rendering aid in promoting Conferences over all the country, its efforts would be met in a free and liberal manner. *J. D.*

GIGANTIC FIG TREE AT ROSCOFF.

One of the sights of North-west France is to be met with at the small fishing town of Roscoff, Finistère, in the wonderful Fig tree in the garden of the old Capuchin Convent. The trunk, reproduced from a *camera-lucida* sketch (fig. 66), is 2 feet 6 inches in diameter at 3 feet 6 inches from the ground, and the spread of the branches is 80 feet. The wide-spreading limbs are supported on numerous stone pillars, forty-eight of which are monoliths of granite; others are of wood, with a horizontal wooden framework stretching from pillar to pillar. The trunk is close to a stone wall, and the earth is higher behind than in front of the wall, and roots have pushed through the stonework, as shown at the left of the illustration. At the time of my visit, two months ago, the tree was covered with Figs; these were being picked off gradually as they ripened.

At Auray, in Morbihan, it was curious to see the lady scavengers cleaning the streets in the morning, before breakfast. The sweeping part of the brooms is made of branches of Ruscus aculeatus, and this answers admirably for getting the wet garbage from between the stones. Brooms with the sweeping part made of Broom (Sarothamnus), are used only for indoor work, and the Broom plant appears to be cultivated for the manufacture of brooms. Branches of Broom are sold in the market-places, with snails and other oddities.

In sketching for a fortnight, I found my light *camera-lucida* stand constantly viewed with suspicion by the soldiers and police. Once a Breton called out "Prussian!" and some rustics, in another place, after asking for explanations, said they had never heard of England or Englishmen, but they had heard of Prussians; elsewhere a *gendarme* applied at the hotel, and requested me to fill up a paper with the year, month, and day (!) of my birth—my trade, my birthplace, "nationalitie," "domicile," where I had come from, where I was going to next, and—what for. Very few Breton books are to be bought in Brittany, at least, such was my experience. On enquiring at a stationer's for Breton music and old Breton books, only three small books could be produced, and one of the three was named *Klenvid ann avalou-douar* (*pe patatez*), *i.e.*, "Disease of apples of the earth (called Potatos)". The book was a bad one, almost as bad as similar books published in England. The Potatos in the fields were all very high-moulded, high-moulded, indeed, to an absurd degree, but the men in the Potato fields said the Potatos were badly diseased; the leaves and stems, at any rate, were generally rotten with the Peronospora. The men in the fields were paid a franc a day. *W. G. Smith, Dunstable.*

ASHRIDGE.

Travellers by the North-Western Railway will have noticed the long ridge of chalk hills which stretches for many a mile on the right hand, and commencing to be thickly wooded on the London side of Berkhamstead town, and apparently terminating in the direction of Dunstable Downs, a tall pillar, with a gilded flame, standing at this, the northerly portion of the estate. This is Ashridge, the present residence of the Earl of Brownlow, the mansion lying embosomed in Beech woods some 3 miles from Berkhamstead. The house, once a monastic building, is in excellent preservation. No one visiting Ashridge for the first time can but be struck by the grey lichen-covered walls, its stately architecture, and withal its homeliness, and its admirable cosy nooks and isolated parterres, differing so much from the modern spirit as seen in buildings and gardens. The cool and shady cloister-like corridors that enable you to get from one part of the place to another, the old-fashioned flower borders, the old creepers on far older grey walls, and the ancient trees everywhere, are so unlike what we had seen at a new place belonging to one of the Rothschild family near to Tring.

The lawns at Ashridge are the perfection of turf, rich green, soft, yet not mossy, yielding to the foot like velvet pile, and beyond the skill of any gardener to produce in a lifetime, and itself the product of centuries of care on the part of generations of gardeners. The several gardens round about the mansion are charming retreats, with their rustic corridors, the pillars covered with flowering, climbing plants.

The beds edged with Box, and surrounded by gravel-paths, are filled with zonal, tricolor, and variegated Pelargoniums, dwarf Nasturtiums, in which Iceland Poppies with good effect are planted; Clematis Jackmanii superba, and Calceolarias. The modern carpet-bed would be considered an impertinence in such a garden, and therefore it very properly finds no place. The borders are even more admirable than the beds, and contain mixtures of beautiful herbaceous plants, and things that smell sweetly; and there is not too much stiffness of tying-up, but just enough, and creeping plants ramble about from one plant to another, making a pleasing tangle of flower and leaf. A Fuchsia-planted border in front of an ancient wall covered with old creeping plants was quite a picture in its way. The Fuchsias were from 6 feet to 8 feet in height, perfect columns, mostly, and full of bloom (September 9), the front of the border being occupied with small-growing herbaceous plants.

There is one quaint garden where a bed is filled with the facsimile of the coat-of-arms of the Brownlow family. These coats-of-arms are done in Box, coloured gravels, and plants with foliage of suitable colours. It is a curious fancy, and remarkable in its way. *Arms.*—Argent: a lion rampant, gules, between three Pheons sable. *Crest:* a lion rampant, gules, supporting an arrow, palewise, or pheoned, or flighted, argent. *Supporters:* two lions reguardant, argent, collared paly wavy of six, argent and azure.

Other beds are filled in with the arms of allied families.

The beautiful lawn which stretches away from the garden front of the house, has been lowered a foot or thereabouts, all the old velvety turf being relaid with the utmost carefulness. It has perhaps now an evener and pleasanter appearance, and it is certainly easier mown with a machine. A narrow flower parterre and a broad walk separate it from the house. The beds in the parterre or long border were filled in regular kind of way with white East Lothian Stocks, Zinnias, Coleus, Asters, Marigolds in variety, Violas Countess of Hopetoun, Archie Grant, and Pilrig Dwarf, Cannas, Ricinus, Hyacinthus candicans, Chrysanthemum Madame Dupon, single-flowered Dahlias, &c.; and notwithstanding that the time of year was so late, the floral display was quite creditable. The terrace garden has a retaining wall of about 1½ foot high on the side next to



Fig. 66.—Gigantic fig tree at Roscoff, Finistère.

MASSACHUSETTS AGRICULTURAL COLLEGE

the lawn. Mr. J. Lowe, the present head gardener, has managed this piece of work very successfully.

Pelargoniums are mainly employed to fill the beds of the Italian garden on the east side of the house, and these still looked very gay, one of the best varieties employed was Waltham Seedling. As climbers on the walls, Stauntonia latifolia, and Smilax laurifolia, and single-flowered White Rose, were noted. In these gardens is to be found one of the largest specimens in the country, of Thuiopsis dolabrata variegata. The plant is somewhat hemmed in by a hedge and some large trees, but it is at present in vigorous health, and growing at a great rate.

The sweet-scented Lemon Verbena, Aloysia citriodora, is grown into ornamental standards, of 8 feet in height, and looks very pretty in neat green tubs when standing on the terrace. There are very old plants still in good health whose stems may measure 2 inches in diameter, and younger ones of equal height and spread of head, but lesser diameter of stem, which have been raised in four years from cuttings. Restricted at the root and assisted with manure-water, these plants flower profusely.

Plants and Their Culture.

The Forcing-Houses.—Many of the subjects required for early flowering should by this date have been got in readiness for forcing, as plants at this season require longer time before blooming than is the case at a later date, and this should be borne in mind, plants being not rarely crippled and rendered unsatisfactory by hard forcing. The early Roman Hyacinths may be put into an intermediate-house as required, these bulbs always forcing well if they are placed for ten to fourteen days in a temperature of 60°, and placed in a cool-house at once when the flower-spikes begin to open. The temperature given above will be sufficient during the day for many plants, and a few degrees higher during bright sunshine, and 5° lower, or 55°, during the night.

The different kinds of bulbs should be placed on a shelf, or at one end of the house, as the constant syringing which many of the other plants need, will be injurious to them. The paper-white Narcissus will also be ready to place in this house, keeping the bulbs near the light.

Azaleas will force readily if well prepared, and plants of early varieties, with prominent buds, such as Amœna, Deutsche Perle, Fielder's White, and Alba. Syringe the plants several times a day. The deciduous species of Azalea will force readily, but the plants require a longer time to open their flowers at this season, therefore those plants should be selected which have the most forward buds.

Camellias.—Our earliest plants are now flowering freely, and we find them most useful. The plants have not been forced, and they are on a wall in an early Peach-house. They give us a supply of bloom for several weeks, and make their growth when the Peach-house is started, and give but little trouble. We syringe them heavily then, and the partial shade afforded by the Peach trees when making their growth, suits them.

Tea Roses in pots, if treated as before advised, will now give a good supply of flower-buds, and a certain portion of the earliest plants may be gently forced, but they will not require much heat to cause them to open their buds. To preserve the plant in a clean condition, syringings with tobacco-water and pure soft-soap should be practised. If mildew appears, as it will after putting them in heat, syringe them every ten days with fir-tree oil or Bentley's insecticide. A few Deutzias may be brought on, but it is not advisable to place many of these plants in the forcing house at present. A few clumps of Lily of the Valley may be placed near the pipes, and kept moist by being plunged in cocoa-fibre or leaf-mould. Never allow the roots to get dry.

Callas, which were plunged in pots on a south border during the summer, will be ready to transfer to the forcing pit. The others which were planted out in the border will form a succession to these. The useful Hoteia japonica, Solomon's Seal, Staphylea colchica, Kalmias, and a few of the early kinds of Rhododendrons, if suitably prepared betimes, will give good returns if forced gently into flower. Helleborus niger may be lifted with a good ball of earth, and potted up, and handlights placed over some of the plants in the open border.

If space in a cool-house or pit can be found for some pots of Viburnum, Persian Lilac, and L. Charles X., Prunus sinensis, fl.-pl., Hydrangea paniculata grandiflora, the plants will be very useful, provided they have been potted early, and otherwise prepared. Many of the large-growing shrubs besides those above named, should always be brought on slowly, and kept well syringed all over, or they will lose much of their beauty. The last lot of bulbs may now be potted up, retarding them in the spring if it be found necessary. Tuberoses should be potted to form a succession, placing the bulbs in small pots, and giving no water before growth is made, and plunging them in bottom-heat of 80°; before potting, rub off all offsets, keeping these latter by themselves, and repotting the large bulbs whenever the pots get full of roots, and still keeping them in bottom-heat. By this means much finer bloom-spikes can be obtained. *G. Wythes, Sion House, Brentford.*

Fruits Under Glass.

Pine-apples.—The kind of treatment recommended in the previous Calender should still be followed out, and any that are required to be ripe in May, 1890, should be kept quiet in an even temperature, giving air when the sun shines, to keep it from rising too much. Plants with fruit swelling should be afforded a brisk top and bottom-heat, and a genial moist atmosphere. When watering, give some kind of manure-water; it is not advisable to water the plants much after the fruits begin to colour, or they may turn black at the core. The glass of the roof should be kept scrupulously clean, and the plants should be plunged, so that the tips of the leaves are not far from the glass. Be careful with the damping down, and drip must be guarded against, so that none may fall into the hearts to give a check to the embryo fruit, or injure those in bloom, causing faulty pips. It is well to keep the air rather dry at this stage.

Suckers should now have the temperature lowered to their winter maximum—that is, 60° by night and 65° by day, giving air on every opportunity when the sun is shining, to keep them sturdy, using a little moisture on the paths and walls; at the same time, maintain a genial temperature, and do not water too freely, but just to keep the soil moist. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Bush Fruits.—By this date most of the leaves will have fallen from the Currant and Gooseberry bushes, and to keep the work of pruning well ahead it should be commenced at once, unless small birds are troublesome, when the pruning may be left till spring. These bushes should at all times be kept open in the centre, so as to have fine fruit of good flavour. After pruning the Gooseberry bushes, root out all the root-suckers with a suckering-iron, thin the branches where at all crowded, and leave plenty of young wood all over the bushes. If caterpillars have been troublesome, scrape from under the bushes all the loose soil, and give the bushes and the soil beneath them a dressing with soot and lime mixed; the application should be repeated a few times during the winter.

Red and white Currants will require to be differently dealt with, the pruning being done more according to the spur system, and the shortening back of the leading shoots in accordance with their strength, but at all times a succession of healthy young branches should be encouraged to replace the older ones, as on these much finer fruits are produced; Black Currants should only be thinned out, and this must be done freely, otherwise there will be much small fruit.

Apples.—The remainder of these should now be gathered when dry, and stored; also any late Pears. In mild weather ventilate the fruit-room freely, and examine those fruits which were gathered early, removing the decayed specimens before they injure others.

Maria Louise Pears will now be ripe, and to prolong the season some may be removed to a cooler place, and the forwardest made use of. *H. Markham, Mereworth Castle, Maidstone.*

The Kitchen Garden.

Cucumbers in Pits and Houses.—Do not allow the fruits to remain on the plants after they have grown to a useable size, pinching off deformed ones, and not allowing the plants to bear too abundantly. Remove the old discoloured leaves, cutting them clean off, in preference to pinching. The laterals should not be so closely pinched in as is usual in the summer, and where space on the trellis will allow of it being done, lay in young growths. Encourage the plants to grow, or root-action will become stagnant. Top-dress the plants with a compost of sandy leaf-mould and horse-droppings, and dust the hills with Vine-manure or bone-dust when the roots appear in numbers on the surface. From 1 to 1½ inch in thickness will be enough compost for a dressing.

With the shortening days the atmospheric moisture and root-waterings should be lessened. The temperature at night should not exceed 65° to 70°, and by day a rise of 10° with sun-heat will be sufficient. Afford a little ventilation every day, and ventilate freely when the weather is mild and fine, shutting up early in the afternoon. Should mildew appear, dust the plants freely with flowers-of-sulphur, and maintain a drier air and a higher temperature until it has disappeared. On the other hand, a high and dry temperature is likely to invite the attack of red spider, and to rid the plant of this pest use about 2 oz. of carbolic soap dissolved in 1 gallon of water, and apply at a temperature of 85°, afterwards washing well with tepid water, before the soap water has had time to dry on the leaves, &c.

Mushrooms.—The first beds made up in the house will now be showing Mushrooms, and the covering of hay or litter employed to maintain uniformity of warmth and moisture may be removed when the Mushrooms reach the button size. Should the bed be found to be too dry, which may be ascertained by opening a part of the bed and taking out a handful of the material, when if it be elastic under the pressure of the hand and fall to pieces, a watering with tepid water is necessary, and some fresh covering should then be placed on the bed. If, on the other hand, the materials remain in a compact state, it is too wet, and not much hope can be entertained of a crop.

When Mushrooms come in very thick clusters, they should be thinned out so as to allow them to develope. When gathering Mushrooms, pull them out by the root, not cut them off, the stumps being liable to engender mould, which sometimes destroys the remainder of the crop. Continue to collect fresh materials for succession beds. Where horse-droppings and stable-litter are plentiful, these are unquestionably the best materials, and should be prepared under cover, for, if but once saturated with rain, at this season of the year, there is small chance of getting them dried. Where horse-droppings cannot be secured in sufficient bulk, Beech, Oak, and Spanish Chestnut leaves will be found almost as useful, these being used in the proportion of one load of stable litter to three loads of leaves, the whole being turned over frequently.

When the heat has subsided to a safe point, the bed may be formed, It will require a greater amount of trampling to consolidate the materials than stable litter alone, and when the temperature has subsided to 85°, the spawn may be placed in the bed and the surface soiled over. The temperature of the house should not exceed 55°, for if it should, it will be at the expense of the future crop. Sprinkle the walls and floor with tepid water once a day, and be careful at all times not to chill the surface of the beds. *W. M. Baillie, Luton Hoo.*

New Tulips.—Tulipa Maximoviczi, introduced to Europe from Eastern Bokhara by Governor-General Rosenbach, is similar to T. linifolia, except that the linear leaves are erect and widely distributed on the flower-stalk. Flowers scarlet, with long, oval, dark spots bordered with white at the base of the petals inside. T. Batalini is also from the same region as the above, and is named after Professor Batalin; it is a yellow-flowered Tulip, with five leaves on the stalk, green, smooth, without any margin. Petals longish, oval, blunt, turning outwards at the tip, and sometimes irregularly notched. Both are early flowering species, succeeding in a warm, dry position in ordinary garden soil. *Gartenflora, October.*

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APPOINTMENTS FOR THE ENSUING WEEK.

SHOW.

FRIDAY, Nov. 1—Havant (two days).

SALES.

MONDAY, Oct. 28
- Dutch Bulbs, at Stevens' Rooms.
- Dutch Bulbs, at Protheroe & Morris' Rooms.
- Clearance of Nursery Stock, at the Exeter Nurseries, Exeter, by Protheroe & Morris (six days).
- Clearance of Nursery Stock, at the Harrow Nursery, Harrow, N.W., by Protheroe & Morris (two days).

TUESDAY, Oct. 29
- Lilies, at Protheroe & Morris' Rooms.
- Roses, Shrubs, Fruit Trees, &c., at the City Auction Rooms, by Protheroe & Morris.

WEDNESDAY, Oct. 30
- Dutch Bulbs, and 5000 Lilium auratum from Japan, at Stevens' Rooms.
- Plants and Dutch Bulbs, at Protheroe & Morris' Rooms.
- Nursery Stock, at Hollamby's Nursery, Groombridge, by Protheroe & Morris (two days).

THURSDAY, Oct. 31
- Dutch Bulbs at Stevens' Rooms.
- Dutch Bulbs, at Protheroe & Morris' Rooms.
- Established Orchids, Orchid-houses, &c., by order of Colonel Deare, at Englefield Green, Staines.

FRIDAY, Nov. 1
- Nursery Stock, at The Nursery, Upper Tooting Park, S.W., by Protheroe & Morris.
- Imported and Established Orchids at Protheroe & Morris' Rooms.

SATURDAY, Nov. 2
- Dutch Bulbs, at Stevens' Rooms.
- Dutch Bulbs, at Protheroe & Morris' Rooms,

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—46°.1.

The Nomenclature of Conifers.

An incidental reference to the nomenclature of Conifers in a recent issue has brought us a letter from Mr. Goemans, in which he calls attention to the excellent service which was rendered at the Conifer Congress at Dresden in May, 1887, by the adoption of Mr. Beissner's *Handbuch der Coniferen Benennung*. This work was noticed in our columns at the time of publication, but, as the question of nomenclature is just now in the air, it may not be inappropriate to repeat that it is a list of all the Conifers that are generally cultivated in the open air, or with slight protection, in Germany. The list is based for the most part upon the latest general revision of the order that is contained in Bentham & Hooker's *Genera Plantarum*, and is unquestionably very useful. The list has been adopted by the leading horticultural societies of Germany, by the Press, and by many of the leading nurserymen. Holland has followed the example of Germany, while, as for the United States, the leading writers, sometime before Mr. Beissner's publication, acted upon the same general principles as those upon which his list is based. At Kew, also, the Conifers have long been named in accordance with these views. In the numerous articles published on coniferous plants in these columns of late years, we have invariably followed the same plan, even though, by so doing, we have brought upon ourselves not a few mild animadversions for reversing the application of the generic names Abies and Picea. So far as regards this particular change, we English are (with few exceptions) the only people now who call the Silver Firs Picea, and the Spruces Abies. By so doing we show our resemblance to that distinguished juryman who, finding himself at variance with all his fellow-jurors, declared that he never met with eleven more obstinate men in his life! We trust that Mr. Beissner's publication will, in time, become known to English as well as to German readers, and that it may be adopted as a garden catalogue for present use, though it is evident that finality cannot be expected for any list, and that changes must necessarily be made sooner or later in accordance with the progress of science. Those whose knowledge of German is limited, will not experience much, if any, inconvenience, as the names adopted are all in Latin. The whole genus Retinospora is suppressed, as it undoubtedly should be, but that horticulturists who are not botanists as well will ever abandon that generic or pseudo-generic name, is more than we can bring ourselves to anticipate.

Mr. Beissner's list of Conifers will lead many to wish that a similar list could be compiled for Orchids. One or two partial lists are already available. Mr. Goemans himself has prepared one for some of the genera of Orchids which have been published in the *Revue de l'Horticulture Belge*, while a somewhat fuller list "of the Orchids cultivated in Europe," was mentioned quite recently in these columns (p. 361), as having been published under the auspices of the Nederlandische Orchidophilen Club. A much fuller and more complete list, with bibliographical references, and references to illustrations, has been in course of publication during several years in these columns. This list was originally commenced and carried on up to the genus Cattleya by Mr. W. B. Hemsley, in accordance with the revision of the order by Mr. Bentham, in the *Genera Plantarum*. Various circumstances occurred to prevent the rapid and continuous publication of this list, but lately it has been resumed by Mr. R. A. Rolfe. The space which can be allotted to such matter, which is not very interesting to the general reader, necessarily depends on the requirements of other matters of more pressing interest. In the meantime, we may add that the encouragement afforded us by orchidists has been by no means commensurate with the labour and cost that has already been bestowed upon it. Partly, no doubt, this is to be accounted for by the irregular method of publication. Could the list be completed and reprinted as a separate list, the case might be different.

A complete list of the genera in cultivation, together with indications of the number of species, their geographical distribution, and references to illustrations, mainly prepared by Mr. F. W. Burbidge, was given as a supplement to our columns in May, 1885, with a map.

These materials, incomplete though they are, will be very valuable to any future compiler of a list of cultivated Orchids, analogous to that of Mr. Beissner for Conifers, to which allusion has been made.

What the outcome of the deliberations of the Nomenclature Committee will be, we cannot pretend to divine. It can hardly be wrong, however, to give a caution against exaggerated anticipations. In all probability, the committee will confine itself to the nomenclature of what are known as garden varieties and hybrids solely, and leave the ordering of genera, species, and primary varieties to the botanists. One of the greatest sources of confusion hitherto, as we have often pointed out, has arisen from the practice of horticulturists of imitating the nomenclature of the botanists, without troubling themselves at all as to the principles on which that nomenclature is based, and the proper manner in which they should be applied. Botanists, on their part, must be content to recognise the different requirements of science and of practical horticulture. It will be for the committee to devise some working compromise which, while not antagonistic and obstructive to science, shall be adapted to the requirements of practice.

Chrysanthemum Centenary Conference at Chiswick, November 5 and 6, 1889.—Amongst the celebrations of the centenary of the introduction of the Chrysanthemum into Europe, organised at Edinburgh, Toulouse, Ghent, and other centres of horticultural activity, the exhibition and conference to be held by the Royal Horticultural Society in the gardens at Chiswick should prove conspicuous for interest, for the metropolis is, before all places, the home of the Eastern flower. It is arranged that a display of flowers, grown by the Society, will be made in the great vinery at Chiswick, November 5 and 6, this being supplemented by collections of plants and flowers contributed by cultivators, many of the more eminent of these being members of the managing committee. The schedule for the show consists of thirty-six classes, and although in some few of these the usual practice of "dressing" the flowers will be allowed, the general purport of the show is to ensure the finest and most representative examples of natural development, the skill of the cultivator stopping short at the point where intentional modification of form begins. Thus, in the classes for plants, there are some special places reserved for such as are best adapted for decorative purposes, apart from the "finishing touches" of the florist; while in several classes for cut flowers, the specimens are to be accompanied with natural foliage, and are to be shown as cut from the plant. In certain classes dressing will be allowed, and will be carried to the highest point by experts, but the natural growth of the same varieties will also appear with them to afford instructive contrasts between the alloyed and the pure metal. The intellectual part of the entertainment will consist in the reading of papers, and the discussion of points of interest. The President is T. B. Haywood, Esq., member of the Council; the historian, Mr. C. Harman Payne; the essayist in new varieties, Mr. E. Molyneux; the propounder of rules for judging, Mr. J. Wright; and the recorder of progress in the evolution of the flower, Mr. Shirley Hibberd. These five will furnish the matter for the discussions of the first day. On the second day, Mr. F. W. Burbidge will discourse on the production of seed, which is a crucial point in Chrysanthemum culture; Mr. C. Orchard will explain his method of converting giants into dwarfs; Mr. C. Pearson will treat on cultivation for market; and Mr. W. Piercy on the production of early varieties that flower in the open ground before the time when autumnal frosts make havoc of the garden. Another important feature of the undertaking is the appointment of a series of committees of experts, who will critically examine the whole of the varieties exhibited, and name the best amongst them for various purposes, so as to furnish a mass of authoritative information for the benefit of cultivators and the general public.

The Time of Meeting of the Floral Committee.—At the close of the business of the Floral Committee of the Royal Horticultural Society on Tuesday last, Mr. T. B. Haywood handed to the chairman of the day, Mr. John Fraser, a letter from the Rev. W. Wilks, the Secretary of the Society, with the request that it might be read. The letter asked for the opinion of the committee as to the expediency of changing the hour of meeting. After some discussion, it was agreed that application should be made to each member of the committee in writing, to ascertain his wishes in the matter, and the same communicated to the Council.

Railway Rates Classification.—The Board of Trade inquiry into the Railway Classifications was opened at the Westminster Town Hall on Tuesday, October 15, and the question has therefore entered upon a most important phase. The opposing forces may now be said to have joined issue, after a great deal of preliminary skirmishing. Lord Balfour presided at the meeting, which was convened for the purpose of settling the mode of procedure. Eminent counsel, including Mr. Pope, Q.C., and Mr. Littler, Q.C., appeared for the railway companies, and these gentlemen, and others, having spoken on behalf of the railway interest, and Mr. Balfour in the name of the Mansion House Committee, a plan of campaign was decided on. The opening is to be on the part of the railway companies, the London and North Western Company's schedule being first considered, and afterwards another—probably the Great Western Railway Company, selected by the remaining companies. Thereafter the objectors will be heard, the intention being to conduct the proceedings in a manner analogous to that adopted by Private Bill Committees. It had been announced that the first subject for discussion would be the question of terminals, but Lord Balfour, on Tuesday, requested that the whole case should be submitted at the outset. It is also desired that objections shall be amalgamated as far as possible, and a good deal in this direction has been done in the last few weeks. The agriculturists as a body appointed, on Monday, 14th inst., a committee to act on their behalf, twenty-seven County Councils and other bodies being represented. Proceedings will be resumed on the 29th, so that both sides have a little more breathing-time, and after the above date sittings will be each Tuesday, Wednesday, and Thursday.

"Botanical Magazine." — The October number of the above contains plates and descriptive matter of the following plants:—

Dracæna marmorata, received at Kew from the Singapore Botanic Garden; it has sessile, plicate, bright green leaves, copiously marbled with white, which are 3 feet long and 4 inches broad; the panicle is narrow, erect, reaching a height of 2½ feet; flowers, greenish-white.

Primula petiolaris var. *nana*, a common plant in moist situations in the alpine region of the Himalaya, 13,000 to 16,000 feet; forms a dense tuft of long stalked, spathulate-obovate, or orbicular-cordate leaves and umbelled flowers on a stout scape; flowers sapphire-blue.

Fritillaria bucharica, found by A. Regel, in Eastern Bokhara, at from 4000 to 6000 feet elevation; bulb globose, stem terete, about 1 foot long; leaves sessile, alternate-lanceolate, 3—4 inches long; inflorescence, a lax, many-flowered raceme; flowers, greenish white.

Iris paradoxa, a native of the Caucasus and Persia; leaves four or five, linear, glaucous, never exceeding 6 inches in length; flower-stem one-headed, terete, shorter than the leaves; inner segments of the perianth erect, large, lilac, or white coloured, obovate, narrowed suddenly to a short claw; outer segments of the perianth spreading horizontally, brownish-black on a pale-brown ground colour.

Shortia Galacifolia, a native of Carolina, U.S.A. a pretty little herb, with glabrous, orbicular, subcordate leaves, and pure white flowers on one-flowered, red stalks—the leaves turn a deep, port wine red in the autumn. (See *Gardeners' Chronicle*, March 30, 1889, p. 397.)

Seeds in Germany. — Mr. Benary, in his harvest report, states:—"In spring it became apparent that the raw, damp weather of last autumn, but more especially the sharp frosts in the early part of October, had considerably injured the whole of the Brassica tribe — Cabbages, Savoys, Borecoles, Khol Rabis and Swede Turnips—and in consequence the crops of all will be very limited. The unfavourable weather just mentioned also had a serious effect on Carrots. Parsley and Parsnips having also suffered during the winter, less was planted out than usual, but from the breadths growing fair crops may be expected. The almost abnormal heat of June and July was very beneficial to Beans, and the yield will be a good one, that of Peas, Spinach, Endives, and Radishes of all kinds will be middling. Of Lettuces and Cucumbers we expect good crops, and of salad Beets and Mangold Wurzels the yield will be satisfactory. Onions looked very well in the spring, but the subsequent unusually hot weather proved detrimental to their development, and the result is only a middling yield of all varieties."



Fig. 67.—Castle Ashby: scene in the park. (see p. 465)

North of Scotland Horticultural Association.—An annual adjourned meeting of the North of Scotland Horticultural Association, was held on Wednesday evening, the 16th inst., in the Christian Institute, Aberdeen. Mr. D. M. Smith, Argyll Place, Aberdeen, in the chair. There was a small attendance. Mr. William Reid, Secretary,

read the annual report, which contrasted unfavourably the work of last year with that of former years, the meetings being smaller, the discussions less animated, and less interest manifested in the work. The need for stimulating the interest of members in the affairs of the Society was referred to by the chairman, Mr. France, and others, the report being ultimately adopted. The office-bearers for next year were appointed as follows:—President, Mr. D. M. Smith; Vice-President, Mr. C. S. France (Messrs. Cardno & Darling); Secretary, Mr. William Reid, 8, Hadden Street, Aberdeen; Treasurer, Mr. W. Wyllie, Market Street. The usual committees were appointed, and a programme for the work of the ensuing session gone over. Votes of thanks terminated the proceedings.

A Right Way of Fostering a Love for Flowers.—By a recent resolution of the Public Parks Committee of the Aberdeen Town Council, well worthy of emulation by all such bodies, it was agreed to distribute amongst the artisans of the granite city, who cared to apply for them, a number of surplus plants which were in the hands of the keeper of the Duthie Public Park, Mr. Harper. The resolution was practically carried into effect on Tuesday and Wednesday of last week, and the result has shown how highly the privilege has been appreciated. Over 20,000 plants were given away to the various applicants in quantities of from six to twelve, according to their wants and means of preserving them over the winter. The people seemed very highly pleased to get the plants, and there is no doubt that a great deal of enjoyment and pleasure will result from the tending that will be required to keep them alive during the winter. The plants consisted of 14,000 Pansies and Violas, all of the best sorts; 6000 Pelargoniums, scarlet, pink, bronze, and tricolor; 2000 Calceolarias, yellow and brown.

Propagating Pelargoniums.—The method followed at Lincoln Park, Chicago, by the head gardener, Mr. Stromback, says the *American Florist*, is to take cuttings from bedded plants in the latter part of September. The cuttings are pretty well trimmed and placed in beds of sand in the greenhouses, the sand having previously been well watered. After being placed in the sand, they are watered along the rows to settle the sand around them, and no more water is given them for about ten days, or until the cuttings are calloused, but in bright weather they are syringed occasionally if the foliage gives indication of wilting; but until the cuttings are calloused, he aims to give them just as little water as possible, and not very much more afterwards until bottom-heat is supplied, and more liberal waterings become necessary. He believes that more Pelargonium cuttings are lost and injured from overwatering than from any other cause, especially in autumn propagation.

The Malting Barley Competition.—We notice that at the recent Brewers' Exhibition in London, the Champion Cup open to the world, as well as 1st, 2nd, and 3rd prizes, have been won by Kinver Chevalier Barley, a variety introduced by Messrs. E. Webb & Sons, nurserymen, Wordsley, Stourbridge. This is the third year in succession that this variety has won the premier honours at the Brewers' Exhibition.

Early Narcissus. — Mr. J. C. Tonkin, of Scilly, writing, a few days ago, to a Penzance contemporary, observes:—The *Cornishman* of last week noticed a bloom of Narcissus (tazetta variety), known as Scilly White, sent to London by Mr. Hartlands, of Cork. I may state that Mr. Hartlands stands almost alone in raising Narcissus at this season of the year. Several bulbs of Scilly White have thrown up bloom-spikes on the islands three weeks since. In fact, a variety known as the Cornish Narcissus (which grows in abundance at St. Michael's Mount, and is similar to the Scilly White, but inferior in size and colour) figured freely in the decorations at harvest festivals. The Narcissi crop is in a very forward state. Soleil d'Or, Scilly White, and Belle de Normandy are pushing their foliage 3 or 4 inches above the ground, and look exceedingly healthy.

The Illustrated London Almanack for 1890. — This publication contains important new features:—"Insect and Mould Pests Injurious to the Garden, Orchard, and Farm," illustrated and described, by Jabez Hogg, Esq., F.R.M.S., &c.; six pictures in chromo of birds and flowers, viz., Thrush, Goldfinch, Chaffinch, Robin, Kingfisher, Woodpecker, and Bullfinch; besides much useful matter.

Chrysanthemums in London.—The display of the above flowers at Victoria Park is now open to the inspection of the public.

American Seed Trade.—Connecticut seed-growers complain that low tariff and foreign competition is a source of much greater danger to them, than that of the new seed districts in California or Nebraska, and intimate that the present low tariff will prove an exterminator to the seed-growers in America, ordinary farming having paid better the past two years than seed growing.

A Pretty Bouquet.—We have just seen a simple and pretty bouquet which was bought in a French market for a few *sous*. The centre was composed of Malope trifida of three shades of pink, and this was edged with a small-flowered Aster, like A. ericoides. The great charm of the bouquet consisted in the varied tints of the flowers, and the different stages of their development; some being fully expanded, while numerous others were in the bud stage.

Gardeners' Royal Benevolent Institution. We are desired by the Secretary, Mr. E. R. Cutler, to announce that the annual card collection for the present year will close on the 31st inst., and that he will be glad to receive any outstanding cards on or before that date. He likewise informs us that the collecting cards have this year brought in a clear net sum of about £980; and the twenty-five shares in John Rylands & Co., Manchester, have been sold, producing the sum of £511 10*s.* 9*d.*, which, of course, will be added to the reserve fund.

Potatos in the United States. — The Potato crop in northern New York, according to the *Garden and Florist*, is reported to be the worst failure known for many years, all varieties having been blighted when the tubers were about half grown, making a very light yield of inferior quality.

A New Pipe-joint in Tubular Boilers.—An objectionable feature in tubular boilers is the spigot and socket-caulked joint, difficult to make, and equally so, in case of need, to get asunder without breakage of the parts; and one, moreover, which does not provide for expansion and contraction under varying temperatures. The Thames Bank Iron Company have dispensed with these joints in their boilers, and substituted rubber rings between the ends of the tubes and the boiler castings, securing the soundness of the joints by wrought-iron bolts and nuts, which tie the castings together. This seems to be an advance in the matter of pipe-joints of all kinds of much practical valve. A joint similar in principle, but differing somewhat in detail, was illustrated in these columns on May 12, 1888.

Intercropping.—We often observe intercropping where two kinds of vegetables are planted, the one to have possession of the bed when the other is consumed, but it is rare to find a succession of three crops on the same plot. The following may be planted together with good results, and the system is worthy of adoption in small gardens, where there is a difficulty found in meeting the supply. 1, Cos Lettuce, Garden Cress, Early Radishes; 2, Early Kohl Rabi, Cabbage or Cos Lettuces which form heads early, and Celeriac; 3, on Early Cauliflower beds, from autumn or winter sowings, may be planted Leeks and Lettuces. To carry these various crops, a liberal allowance of manure must be afforded the land. It may be remarked, that the interplanting of Leeks and Celeriac, or Celery, has a tendency to keep the other plants free from insect enemies.

Vegetables at Bloemfontein.—Vegetables, says the *Bloemfontein Gazette* (South Africa), on our morning market now fetch famine prices. History appears to be repeating itself, and the 7*s.* 6*d.* Cauliflower era seems coming in again. Cabbages of no great size, or even of good quality, fetched on Saturday last half-a-crown each. Small Carrots (about eight in a lot), realised 5*d.* a lot, and middle-sized Onions went at 3*d.* apiece. Potatos are also fetching exorbitant prices.

The Clyde Fatality.—The following subscriptions, in aid of the widows, have been promised or paid:—R. B. White, Esq., £50; Messrs. J. Veitch & Sons, £15 15*s.*; Messrs. Protheroe & Morris, £15 15*s.*; Messrs. F. Horsman & Co., £5; Messrs. Charlesworth & Shuttleworth, £5 5*s.*; Baron Schroder, £20; Messrs. Wills & Seagar, £1 1*s.*; Mr. W. Markham, £1 1*s.*; Mr. B. Wynne, £2 2*s.*; W. J. Thomson, Esq., £1 1*s.*; W. Cobb, Esq., £1 1*s.*; H. M. Pollett, Esq., £5 5*s.*; Mr. James O'Brien, £2 2*s.*; Mr. J. Prewett, £1 1*s.*; Thos. D. Findlay, Esq., £5 5*s.*; Mr. C. J. Salter, £1 1*s.*; Sydney Courtauld, Esq., £1 1*s.*; Mr. Alex. Miller, 5*s.*; Mr. T. Whillans. £1 1*s.*; Mr. Geo. Paul, £1 1*s.* The name of Mr. W. Thomson, Jr., Clovenfords, should be added to the list of the committee as announced last week.

A Remarkable Rose. — We read in the current issue of the *Garten and Blumen Zeitung* of a huge specimen of Rosa Banksia, in the garden of Professor C. N. Shepard, Charleston, South Carolina, U.S.A., and which is renowned in the district. The Rose was planted about fifty years ago, and the branches have been budded at various heights, from 6 feet to 15 feet, with Maréchal Niel, Marie Van Houtte, Devoniensis, Cloth of Gold, Madame Eug. Verdier, and other choice varieties, which, without exception, have grown wonderfully. The stem near the ground level has a diameter of 6 inches. The branches are utilised to cover two arbours, each more than 13 yards long by 4 yards wide, and extend beyond these to a distance of 21 yards, and to a height of 14 yards.

Michaelmas Daisies. — These plants adapt themselves excellently to the weather conditions of autumn, and in spite of wind and rain—and we have had several hurricanes and downpours lately—these plants open their flowers and look as fresh as if nothing material had happened. All this shows how valuable and useful they are at this season for borders, where there is now little else which has not become shabby in appearance from the beating of wind and rain. The most suitable situation for the tall growers is in the front of groups or borders of shrubs, but sufficiently far removed to be out of reach of their roots. A. bessarabicus may be planted nearer the front of the border, as it is a dwarf kind, which sends up stems about 2 feet high, and bears heads of deep purple flowers as large as a florin. All these Asters seed freely, and plants may be raised in that way, and by doing this we shall get new and possibly improved varieties; or they may be increased readily by division at almost any time between the present time and the spring, as they branch and spread quickly, becoming quite full of young shoots at the crown.

The United Horticultural Benefit and Provident Society. — On Wednesday evening last, the 23rd inst., this Society held its third anniversary dinner, at the Cannon Street Hotel, with N. N. Sherwood, Esq., in the chair, and about 150 other gentlemen present. The Chairman, in proposing continued success to the Society, gave some very interesting facts concerning its present satisfactory condition, and urged the desirability of making provision for a rainy day, which can be

accomplished by joining the Society, which certainly deserves the support of gardeners. There are now 300 benefit members besides honorary members, and he hoped to see many new ones. This was responded to by Mr. N. Cole, one of the oldest members. The Chairman's health was given by Mr. H. J. Veitch, and in answering Mr. Sherwood announced that at the next anniversary dinner his old friend, Mr. Roger Cutler, would preside. The musical arrangements were under the direction of Miss Belval.

Publications Received.—*Manual of Orchidaceous Plants. Part V.: Masdevallia, &c.* (London: James Veitch & Sons, Royal Exotic Nursery, Chelsea). —*Les Orchidées, leur Structure, &c.*, par L. Castle, traduit par A. de Meulenaère (Belgium: F. & R. Buyck, 15, Rue de la Tour Rouge, Ghent). — *Handbook of the Bromeliaceæ*, by J. G. Baker, F.R.S. (London: G. Bell & Sons, York Street).

Notices of Books.

Handbuch der Laubholzkunde . . . Von Dr. Leopold Dippel. Berlin: Paul Parey. 8vo, pp. 446, fig. 282. (Williams & Norgate.)

This is the first instalment of a descriptive work on the deciduous trees and shrubs native to, or cultivated in Germany, and all of which may consequently be expected to be hardy in this country. In the present part are contained descriptions of the Monocotyledonous shrubs (including Smilax, Ruscus, Danæ, Philesia, and Lapageria), and of the shrubs and trees belonging to the Sympetalous or Corallifloral division of Dicotyledons. The characters of each genus and species are given, together with bibliographical references and indications of figures. Considering the large number of figures and descriptions of shrubs and trees that have been published in the pages of this journal, it is remarkable that so few of them have attracted the author's attention.

The figures given in the present volume are outline representations, similar to those used in the illustration of Lauche's *Deutsche Dendrologie*, while others are novel. So far as we have examined it, the book seems "up to date," the nomenclature correct, according to present knowledge, and the synonymy attended to. Specially we note that the author has taken care to give the date of publication of the types—a matter for which students should be thankful, as also for the full index of genera and species, and their synonyms. This is of the more consequence, as few gardeners would think of looking for Azalea in the text under Rhododendron, where, according to modern botanical usage it is rightly placed. Dr. Dippel's work is likely to be of great service.

Bromeliaceæ Andreanæ.—*Description et histoire des Bromeliaceæ recoltées dans la Colombré, l'Ecuador et le Venezuela.* Par E. André, Paris, 1889. 4to, pp. 118, with 39 plates and a map.

In 1875 and 1876 M. André undertook, under the auspices of the French Government, a mission of scientific exploration in the Northern Andes. He made large botanical collections, of which only a few of the orders have yet been published. The orders which have been already dealt with, which are specially interesting from a horticultural point of view, are the Passifloreæ, which have been determined by Dr. Masters; the Cucurbitaceæ and Melastomaceæ, by M. Cogniaux; the Hederaceæ, by M. Marchal; and the Alströmerieæ, by Mr. J. G. Baker. M. André devoted, during his travels, particular attention to the Bromeliaceæ, and in the present work he has enumerated all the species which he collected; and fully described and figured the numerous and very interesting novelties which he discovered. The plants of this order have been so much neglected, and have many of them such a small geographical range, that he has obtained ninety new species, which are here for the first time fully described and figured. The most curious new genus is Sodiroa, named in compliment to Father Sodiro, of Quito, an indefatigable botanical explorer, and the author of a well-known monograph of the Ferns of Ecuador. Of this genus, which was briefly characterised by M. André soon after his return to Europe, in the twenty-fourth volume of the *Bulletin of the Botanical Society of France*, seven species are now known. It has the capsular fruit and characteristic seeds of the Tillandsieæ, but differs from all the other genera of that tribe by its sarmentose habit, spaced-our linear leaves, and long scariose calyx-tube. None of the species have yet been brought into cultivation. The other new genus is Thecophyllum, which is nearly allied to Caraguata. In Caraguata, M. André has discovered sixteen new species, several of which are very handsome, and have been safely brought home alive. Of these, C. sanguinea has been already figured in the *Botanical Magazine* (tab. 6765), and C. Morreniana and Van-Volxemi in the *Revue Horticole*. Another genus of which he has materially increased our knowledge is Puya. In his new Puya gigas, also safely brought home, the great spiny leaves reach a length of 3 or 4 feet, and the peduncle, including the dense spike, a length of 20 or 30 feet. In two of his new Pitcairnias (macranthera and Broughiastiana) the petals reach a length of 4 or 5 inches. He has a curious new Naratas (N. niduspuellæ, André), with rigid leaves, 3 feet long, and a flat-topped central capitulum of flowers, surrounded by bright red bract-leaves. In all, he has collected 129 species and fourteen varieties, representing fourteen genera. There is a new Friesia from the volcano of Azupal, at a height of 12,000 feet; fourteen new Pitcairnias, and thirty-five new Tillandsias, of which several belong to a new subgenus with the habit of Calopsis, characterised by its small flowers and cylindrical capsules, three or four times the length of the obtuse oblong sepals.

The following is his summary of the altitudinal range of the species, of which he had an opportunity of working out the geography:—Nine species and varieties, 500 metres; one do., 210 to 1300 metres; fourteen do., 500 to 1800 metres; fourteen do., 1800 to 2500 metres; nineteen do., 2500 to 3500 metres; one do., 1700 metres; two do., 1700 to 2800 metres; three do., 1800 to 3500 metres; three do., 1800 to 2500 metres.

The book will add very materially to our knowledge of the order, and his harvest of new Bromeliaceæ alone would be a rich result of his expedition. It is a great boon to have figures with analyses of so many new species.

Köhler's Medizinal Pflanzen

is continued by Dr. Pabst, and the excellence of the coloured plates excites our surprise that such a publication can be produced at so cheap a rate. Happy Germans! There is nothing comparable to it in this country, even at much higher price. (Williams & Norgate.)

Weeds.—Herbs and flowers which grow where the agriculturist or the gardener does not want them, form the subject of an article in the October issue of the *Cornhill Magazine*. The greater part of our existing weeds are (observes the writer) contemporaries of the stone and bronze age, and came to us, like civilisation, from the remote East, with the introduction of Corn and Barley. When man had cleared the primæval forests, the wild herbs and flowers accustomed to live under the shade of trees were exposed to the open heat of the noonday sun, and died out, and a vegetation from elsewhere began to usurp the soil. In America, where the substitution is a thing of such very late date, the two floras, native and intrusive, can be traced with perfect ease and certainty. European weeds of cultivation have taken possession of all Eastern America, to the exclusion of the native woodland flora, almost as fully as the European man, with his horse and cows, has taken possession of the soil to the exclusion of the noble Red Indian with his correlative buffalo.

Roses.

THE ROSE IN 1889.

Are Rose growers, or rather, let us say, Rose exhibitors to be always in the condition which Pope ascribes to the whole race—

"Man never is, but always to be blest"?

It would almost seem so; year after year we have been looking forward for a good Rose year—year after year all promises fair, we hope that we are going to reap pleasantly the fruits of our labours, and then something comes on—some rift in the lute—to mar all, to shatter our hopes, and to make us feel very small indeed. At one time it is those "terrible May frosts;" at another, a cold wave that chills everything; at another, excessive heat—until at last we settle ourselves down to the conviction that we are never again to see such Rose seasons as we used to have. Probably no season has ever more upset exhibitors' calculations than that of the present year; at one time it seemed as if we were going to have a late season; everything (Roses included) was fully three weeks behind, and those Committees who had fixed an early date for their shows were wringing their hands and hopelessly trying to find a spare day earlier than their fixture; then, after a time, all was changed, hot weather set in, one of the most lovely Mays experienced for many years set things going, at a wonderful pace. June was a dry but fine month, and the early days of July were very hot; hence Roses came on with a rush, and many of our best exhibitors were shut out, as their Roses were nearly over before the exhibition season began. Teas are earlier than H.P.'s, and many growers who have always showed well were not able to put up even one stand.

At the same time, while disappointment was the prevailing feeling, it must be conceded, I think, that the Rose itself at the time of its appearance on the exhibition table never gave greater pleasure, even though it was of short duration, than it did this season. With a dry month, except where thunderstorms prevailed, the flowers had a fair chance of opening without being damaged by wet, and such flowers as Mons. Noman amongst the H.P.'s, and Jean Ducher amongst the Teas, which in a wet season are in a mass of rotten pulp, opened out their charms freely, while there was not that scorching sun which sometimes takes the colour out of such flowers as Charles Lefebvre and Camille de Rohan, and so we had the unusual conditions of both light and dark coloured Roses being shown in equally good condition. To this may be added that all Roses seemed to come true to character; very often a Rose may be so altered by climate and cultivation, that one has to stop and say, what Rose is that? But that was not the case this year, and this is a sufficient evidence that, however disappointing the season may have been to exhibitors, it was one in which the lover of the Rose, for its own sake, had ample enjoyment.

Yet with all these drawbacks, the exhibitions were as numerous, and the interest excited in them as great as usual. Of course, all Rose growers naturally look to the National Rose Society, and its metropolitan exhibition is the "Epsom" of the Rose year; it was held, as of late years, at the Crystal Palace, but its enjoyment was considerably marred by the presence of His Imperial Majesty the Shah, who wished to visit it and the Crystal Palace at the same time. In consequence of which, all the arrangements for the day were turned topsy-turvey: instead of being held in the transepts of the great building, the very best of all places for a Rose show, they were obliged to reserve them for the visitors to the Palace, and the show was held in a large tent attached to the northern end, near to the Alhambra Court; and, although all was done that could be, the exhibition was naturally injured by it, while the great heat of the day had a most depressing effect upon the Roses, which would not have been the case, had there been more space, both for the Roses and the visitors—in many cases the stands had to be placed in a

double tier, which is not nearly so good for showing the Roses off. Moreover, their effect was very much marred by a long line of Begonias, double and single, which were placed at the back, and whose glaring colours in many instances deadened the effect of the beautiful tints of the Roses; moreover, it was a great disappointment to the Society, for its royal patroness, the Princess of Wales, had intended to visit it early in the day, while the judging was going on, when she would have seen the flowers in all their freshness; whereas, as she did not arrive until late in the evening, their glory had departed, and distressed and faded blooms met her eye—for no Rose, however stout its substance, could withstand for six or seven hours the intense heat of a crowded tent.

The Rose Conference at Chiswick was one of the leading events of the year, but I have not met with anyone who regarded it as a success. In the first place, I think a great mistake was made in altering the date from that originally fixed—the last week in June to the first week in July; the former would have kept clear of the Rose shows—the latter brought the Conference right into the thick of them, and, as a natural consequence, most of the amateurs were absent. Chiswick, too, notwithstanding its associations, is out of the way, and a tent is not the most exhilarating of places in which to hold a Conference; consequently, there was a degree of dulness about the whole thing which left one with the impression, which was not removed even at the dinner, that the most valuable part of it will be the publication of the papers in the *Journal of the Royal Horticultural Society*. The officers of the Society deserve all praise for the manner in which they worked to ensure success, and if they did not gain it they have, at least, the comforting assurance that they deserved it.

To those who, like myself, have attended Rose shows for the last twenty years, and who has been privileged to see them in all parts of the kingdom, it is curious to note the changes that have taken place in the *personnel* of the exhibitors, and that not from death, but other causes; in the earlier days of the National Rose Society, the great champions were Mr. R. Baker, of Exeter, and Mr. T. Jowitt, of Hereford. The latter of these has altogether retired, while the former, after many years absence, owing to severe affliction, only reappeared last year, and their places may have been said to have been taken by the Rev. J. H. Pemberton and Mr. Grant at the southern, and Mr. T. B. Hall and Mr. E. R. Whitwell at the northern shows of the Society; and now three of these have retired, leaving Mr. Pemberton alone to carry on the combat. But, as in times past, the empty places have been filled, so I believe it will be now, and some enthusiastic amateur will take up the gauntlet. There is, of course, this feeling when a giant retires, "Well, I ne'er could hope to have got a 1st prize while he was exhibiting, but now I have some hope of so doing." There is some justice in such remarks, and although we shall grievously miss the grand flowers they used to show, yet perhaps the retirement of these large growers is not an unmixed evil; there is, too, always a danger when an exhibitor goes into the matter very largely, that he may be induced to become a trader rather than a *bonâ fide* amateur.

New Roses of 1887.

Probably the question that is most frequently asked at Rose shows is: Is there anything new, and what is it? I do not remember a season in which there were so few foreign new Roses as in 1889—I say foreign, because both our English and Irish raisers have really supplied us the last two years with by far the best of the new Roses. I have just looked through the list which a very eminent firm selected as the best of those of the autumn of 1887, and I do not see that one of the H. Perpetuals, save those of British origin, have been exhibited; and it is a somewhat curious reversion to see French nurserymen publishing plates of English-raised Roses, and in truth, nothing has appeared amongst them at all comparable to Dickson's Earl of Dufferin, or Mack's Sir Rowland Hill, the former a seedling, the latter, I believe, a sport from grand old Charles Lefebvre, and quite worthy of it. These two, and Mrs. John Laing, I believe to be the best of the year before last's Roses. There was one of which Mr. Ben Cant, no mean authority, wrote very highly. Gloire de Margottin, raised by my old friend Margottin, of Bourg La Reine, who, years ago, told me that we were going behind all the Roses of recent years, and was trying Gloire de Rosamene as the parent from which he intended to raise seedlings. He has succeeded in getting great brilliancy of colour, as in Gloire de Bourg La Reine and Gloire de Margottin, but along with that it has the defect of thinness, which was at once seen in the former of these; and now I find Mr. Cant somewhat modifies his former statement concerning the latter, for in his catalogue of the present season he writes of it as a "good bedding Rose, of rather rambling habit, will probably make a good pillar Rose;" which does not read as if he expected it to be of much use as an exhibition Rose.

Amongst the Tea Roses of that year there are some few additions of great merit:—Madame Hoste, one of Guillot's Roses, is likely, I think, to be a great favourite: it was shown several times during the past season; Miss Ethel Brownlow (Dickson & Sons) has been well shown, and promises to be a good Rose, having somewhat of the character of the Comtesse de Nadaillac, but a vigorous grower. Messrs. Paul & Son exhibited l'Ideale, a very pretty, but small Rose, of the William Allen Richardson type, exquisite in its colouring, and likely to be a most popular Rose, especially with ladies.

New Roses of 1888.

I have before me a list of the Roses for 1888, and amongst the hybrid perpetuals—except our own home raised flowers—I do not see one which has made or seems likely to make any mark. We meet the name of old Lacharme, who has left no successor, and we do not find much to encourage us in the names of the raisers, whose flowers have certainly not appeared on the exhibition table. Amongst our home raised flowers a few have been shown, but not so many as in some years. Caroline d'Arden, one of Dickson's flowers, seemed promising, although having a tendency to coarseness, and there are some not yet in commerce which are likely to make their mark. There are amongst the Teas some which will probably be found valuable. I have, through, the courtesy of Mr. B. Cant, seen a fine bloom of Ernest Metz, a flower of the Catherine Mermet type, but deeper in colour than that grand old flower. Another, which I have heard highly spoken of, is Madame Pierre Guillot, another of Guillot's (a most successful raiser of Tea Roses) flowers; it is said to be a darker Madame de Watteville; Lady Castlereagh, one of Dickson's (of Newtownards), flowers promises to be a very useful and vigorous Rose. The greatest gain has, however, been most probably the white sport of Souvenir d'un Ami, shown by Mr. Geo. Prince under the name of Souvenir de Sarah A. Prince; it is in all respects like the type, the same in colour, which is a beautiful clear white; whether it will supersede the present favourite white Tea Niphetos remains to be seen. The valuable climbing variety of this favourite Rose exhibited by Messrs. Keynes, Williams & Co., of Salisbury, will be very valuable for those who possess houses where climbing Roses can find space to grow in; it makes most rampant growth, and is, in every respect save this, like the type.

I do not think we need fear any diminution in the culture of the Rose. One hears on all sides of fresh growers; while we must remember that exhibitors form but a limited portion of the Rose-growing and Rose-loving fraternity, although very many who commence only with growing for their own pleasure, afterwards desire to share the pleasure with others, when contributing to the long line of boxes at our shows. By-the-bye, a great deal of unnecessary wrath has been expended on the manner of exhibiting the Rose and the Dahlia; but I think that anyone who saw the ghastly failure of attempting to break through the old plan at the Dahlia Centenary will say it is not encouraging for those who think that we can improve on the old system of showing off the flowers; and, in truth, I do not believe that anything better is ever likely to find favour either with exhibitors or the public. *Wild Rose.*

Trees and Shrubs.

Magnolia acuminata.

Amongst hardy deciduous Magnolias, acuminata, or the Cucumber tree, is one of the best suited for our climate. A fine specimen of this tree may be seen in the grounds of Mr. Joshua Clark, of Fairy Croft, Saffron Walden, which has reached the height of 50 feet, and is well furnished to the ground with its pendulous branches. Mr. Clark has planted several species of the deciduous Magnolia in his time, and has succeeded in flowering the beautiful pink variety, Lenne, but which has since died from the effects of the spring frosts. The soil in which Magnolia acuminata is planted consists of a rich loam resting on gravel. [We may point out that this is one of the very best town trees. Ed.] *Hortus.*

The Red-berried Elder.

Mr. Burbidge kindly sent us from Dublin, some time since, a spray of this shrub laden with its beautiful red berries. It is somewhat mysterious that this shrub does not more often produce fruit in England. In Germany and Switzerland it is very common, whilst here we rarely see it.

Cornus florida.

The *Canadian Horticulturist* gives a coloured figure of a variety of the Canadian Dog-wood, in which the bracts, instead of being white, are of a rich rose colour. If we may judge from the figure, it must be very desirable for its colour, and, of course, it is quite hardy.

Cornus sibirica.

We saw lately in Messrs. Perkins & Son's nursery, Northampton, a fine break of this species side by side with Cornus sanguinea, from which it differed by its dwarfer and compacter habit, and the abundance of milk-white, terminal clusters of berries. We do not know if pheasants and other birds are partial to the berries, but in any case, the plant is valuable for its winter effects as a group, or covert side plant, or for planting in masses close to water.

Trees and Shrubs at Segrez.

On the occasion of a recent visit to Segrez, I had the opportunity of comparing the Æsculus turbinata there with my Æ. sinensis (?), from which you figured an inflorescence I sent to you. They are identical, except that the velvety covering on the nerves of the under side of the leaves, so much insisted upon in the description of Æ. turbinata, is perfectly wanting in mine, which are quite glabrous even in dried specimens, where it is much more apparent than in the fresh state. May not that variation be the result of soil or climate? It is the more remarkable, as from the age of the two trees, they must both have come from the same stock, viz., the plant introduced by Von Siebold, and distributed by Lemoine, of Nancy. Reference to M. Lavallée's notes would settle that point. What is the Æ. sinensis vera? At the time of my visit, I found Æ. indica in blossom. This has a great resemblance to the Æsculus depicted in the *Phonzo Zoufou*. Can that Himalayan species have extended to Japan, or been introduced into that country. It is rather shrubby in appearance, like some Pavia, while Æ. turbinata (or sinensis) is decidedly tree-like. I had the Indian Horse Chestnut from Osborn's nurseries at Fulham many years ago, but I never could keep it alive during the winter out-of-doors, and finally lost it. At Segrez it seems quite hardy.

Gordonia grandis.—I also admired this shrub, which must flower during the greater part of the summer, as at the end of June it had already been

in blossom for weeks. It has fine flowers and foliage, but the habit is rather straggly. It requires a peaty soil, and a sheltered, shaded, and moist locality. It is a gem for dilettanti, but it will never do for the million.

Actinidia Kolomikta.—The wonder of my visit was Actinidia Kolomikta, a rather large shrub of climbing habit, but no support or care was given to it, and it lay all dishevelled. Most of the leaves had turned of a lovely lilac hue, sprinkled with diamond powder. I cannot compare it to anything but sprays of Bougainvillea, but it is hardy even in Belgium. I had never seen it or heard of it in that beautiful condition. Is it an individual variation, or is it the result of the age of the plant, the soil, or brighter sunshine that we enjoy? I cannot say. On my return, I investigated my (much smaller) specimen plant, and found the lilac colouring on one single leaf. I am going to train it on a southern wall, and will tell you later if I succeed or not in getting my plant as finely coloured as the one at Segrez. *J. V. V.*

Cotoneaster Simonsii.

With a little timely pruning to keep it in shape and within reasonable bounds, this plant makes a good addition to the shrubbery, its numerous bright red berries showing up cheerfully during the winter. A few plants dotted about among other shrubs on the lawn or in the shrubberies are desirable objects. It is a plant very suitable for covering walls and fences. *H. M.*

Florists' Flowers.

CHRYSANTHEMUMS AT GREAT DOODS, REIGATE.

The fine plants forming the collection at this noted garden are now fast approaching the height of their beauty, and already there is much to be seen that is interesting; and what with the October-flowering varieties, and the skilful manipulation of later sorts, a very effective display is made. Amongst the more conspicuous at present in flower are Mr. William Holmes, a medium-sized flower, of fine form and pleasing bronzy-crimson colour, golden-tipped, and with nicely reflexed petals—unquestionably one of the best half-early varieties; Mandarin, an elegant and novel-looking Japanese, with creamy-white flowers, rose-shaded—very free and effective; Feu-de-Bengal, an orange-red Japanese, inclining to a nankeen-yellow shade—a distinct and free-flowering variety, very useful for general decorative use; Wm. Cobbett, a fine large-flowered variety, of a rich reddish-salmon colour, distinct—a useful plant; the well-known Comte de Germiny, nankeen-yellow, and crimson-striped broad petals, was conspicuous for good form; as was also the splendid snow-white Avalanche; which is without doubt one of the best whites of the Japanese section, suitable alike for exhibition or decoration. Another fine white just coming into bloom, was Lady Lawrence, a flower of grand size and substance; Stanstead Surprise, a long petalled, purple and bronzy-shaded flower, seemed to be a good thing. Besides these there are many others of great promise—prominent amongst them were fine batches of Queen, Mad. Audiguier, grandiflorum, gloriosum, and that useful late white, Moonlight; also many meritorious examples of Edwin Molyneux, Val. de Andorre, Samuel Morley, Le Triomphant, Mons. Chas. Souchet, which was showing splendidly; also the distinct, French grey, Mons. Freeman, and Mrs. T. H. Spaulding, M. Alphonse de Rothschild, M. Garmer, Prince Alfred, and Princess of Wales; while Marguerite Marrouch was here, in fine form; the fine Anemone-flowered James Weston, and many others.

Mr. Brown is well known as an enthusiastic cultivator, and the condition of the collection bears abundant testimony to the skill and attention which have been bestowed upon it. An important point in his management is in keeping the plants dwarf, and in comparatively small pots—sixteens being the largest size. Each plant has on an average three shoots, which rarely exceed 3½ feet in height, stout, short-jointed, and clothed to the pot, with large leathery dark-green leaves, betokening great vigour. *F. R.*

PHŒNIX ROEBELENII.

Early this year a very extraordinary miniature tree Palm, sent by Mr. Roebeleni, of Manila, but shipped, as I understood, at Singapore, was purchased by me at Messrs. Protheroe and Morris's Rooms. It has all the characters of an ordinary Date Palm of 50 or 60 feet in height (fig. 68), and what I took to be the remains of an inflorescence, seemed to indicate that the pigmy had reached its mature stage—indeed, the evidence of the stems and the scars of the leaves left on them points to a growth of twenty or thirty years in order to attain the 2 feet or so of its stature. With his usual kindness, Mr. N. E. Brown, of the Kew Herbarium, assisted me in inspecting many specimens of Palms of the Indo-Malayan region, but nothing like this singular plant was found. In the absence of the inflorescence, any name must be provisional, and as there is little



Fig. 68.—Phœnix Roebelenii.

doubt about this being new either as a variety or as a species, I think it best to attach its discoverer's name to it, and thus record the introduction of one of the most extraordinary and graceful Palms we have. Mr. Roebeleni reads the *Gardeners' Chronicle* I know; perhaps he will give us further particulars. *James O'Brien.*

The Apiary.

INVERSION IN THE YEAR 1889.

There is a very good instance of the above in the *Beekeepers' Journal*, by "Amateur Expert," which carries out my own ideas of the matter. The subject is not, however, new, for it seems that so long as 250 years ago, Bishop Butler practised and recommended it. The Bishop's plan was somewhat different to that now practised. He used to turn a skep up when it was ready to swarm, and fit another exactly over the top of it. Thus the new entrance was higher up. This was, no doubt, perplexing to the bees at first, but I suppose they eventually found the proper entrance.

In the case of "Amateur Expert" the hive was flat-crowned, with a hole in the top, and a bung in it. This hive was inverted on a V-shaped piece of wood, so that the bees could enter the same way as before; only, of course, it was through what was formerly the top. In this new state of affairs, to prevent the queen ascending, excluder zinc was placed over the mouth of the hive, and twenty-one 1 lb. sections placed on the top. In twelve days, "Amateur Expert" says, they were all full of comb, and partly full of honey. He therefore put a similar crate under the other, but at the end of twenty days from the time of inversion a large swarm issued. He caused this swarm to return to the hive by apprehending the queen-bee. But at the end of nine days they again swarmed, and two days afterwards swarmed again. By taking out the unfinished sections from the first two crates, and putting them with empty sections on the swarm, "Amateur Expert" says he finally got the following sum total from the original skep, viz.:—

"Two colonies of bees in bar-framed hives.
"Twenty combs with sufficient stores for winter.
"Seventy-five 1 lb. sections of comb-honey.
"A bell-glass containing about 8 lb. of comb-honey."

Finally, the old skep from which all these good things came, was as good as ever, and of course had a young queen in it. Now what can be said against inversion after this? Seventy-five pounds of honey-comb is reckoned a good harvest (though, of course, there have been higher results) from a hive which does not swarm at all; but in this case there were 8 lb. additional in a bell-glass, and three lots of bees in the place of one. It seems that the best results of inversion are usually obtained from skeps, not bar-framed hives. The latter are so easily manipulated that it hardly seems worth while to invert them. *Bee.*

American Notes.

In one of my last letters, I promised to send you a few notes on bedding as practised generally in the parks and gardens in the North States. Materially there is no difference in the mode or manner of the arrangement of the beds and borders, nor of the species and varieties of plants employed in them, compared with what is observed in England. Calocasia esculentum and French Cannas are conspicuous, as is also the pretty Salvia splendens.

A bed of succulents may occasionally be met with, and I noted one bed with some good specimens of Agave Victoria regina, which were seedlings, I was informed, of the plant which was figured some time ago in the *Gardeners' Chronicle*. At the public parks in Washington and Philadelphia are to be seen beautiful beds of Crotons, and the effect is gorgeous. Planted in the spring from 5-inch pots, and receiving no protection whatever, they attain the height of 4 to 6 feet, and are well formed in proportion, and beautifully coloured beyond imagination. In cities where there are large avenues, these are not fenced off from the villa gardens, which are in the main grass plots, but adjoin the side walk, on the opposite side of which is a belt of grass. I noticed this particularly in Buffalo, and the absence of walls and the like is a vast improvement. Occasionally a specimen Palm adorns the "plot," and gives the place an oriental appearance.

The addition of herbaceous plants growing promiscuously about the Central Park, New York, is a specially interesting feature to horticulturists. The Lily Pond is thoroughly appreciated. Along terraces, and down winding ravines, the Lily pond is reached, a shallow basin, covering a quarter of an acre, and over which hang pendulous Willows, and whose banks are gay with marsh plants; the pretty foliage of Acorus gramineus, fol. var., showing to advantage against the dark background. Papyrus (Cyperus) antiquorum succeeds well, and relieves the flatness occasioned by the semi-tropical and other aquatics. Most prominent and interesting is the sacred bean of Egypt, Nelumbium speciosum, with its showy pink tipped flowers, and broad scabrous leaves, rising out of the water nearly 3 feet. Nelumbium luteum is very attractive, with its gay yellow flowers. Besides the lovely Nymphæa alba candi-

dissima and N. odorata, are the striking N. zanzibarensis (blue), N. odorata rosea, the little N. pygmea, and the gaudy red Lily of India, N. rubra.

Limnanthemum nymphoides (Fringed Water Lily of England) does not appear to be adverse to naturalisation. Another floating acquatic is the Water Poppy of South America. Limnocharis Humboldtii, with beautiful flowers, resembling a Calochortus. Last, but not least, is the grand Eichornea crassipes, with its pretty racemes of tinted violet flowers, and which is now at its best; the power of floating is given it by the stems, which are inflated. The fountain of Bethesda, figured in the *Gardeners' Chronicle*, vol. vi., No. 140, p. 247, contains several interesting plants.

Chrysanthemums, owing to winds and heavy rains, are not up to the average of former years. Contrary to the rule in England, hardening off of the Chrysanthemum is guarded against here, for the days, although short, are very sunny, and over-ripening of the wood has proved to be detrimental to the formation of good flowers. It may surprise many to know that the majority of growers cultivate their Chrysanthemums in glass houses. Many of the plants are struck in June, and these give one good single flower; but of this more anon. *Our New York Correspondent.*

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

PLANTING STRAWBERRIES.—On p. 419 appears some interesting and suggestive illustrations on this subject, with their source duly acknowledged. In the essay on "Fruit Culture for Cottagers and Small Holders of Land," which belongs to the Fruiterers' Company, will be found, on its appearance, similar sketches that were prepared several months ago. As will be seen in the preface, they were copied, with a slight alteration, from an excellent American volume, entitled *Success with Small Fruits*, by Edward Roe, dedicated to Charles Downing, and published in England, by Seeley, Jackson, & Halliday, in 1880. The *Gardeners' Chronicle* being proverbial for its disposition to act justly in these matters, I may, perhaps, be permitted to suggest that the American paper mentioned on the page above quoted, may possibly have obtained credit for the original production of illustrations to which it is not fairly entitled. The same figures appear in a trade catalogue, without any acknowledgment, but it, of course, did not occur to the compiler that his action was on all fours with that of a person who desired a few choice plants for his garden, so took them from the nearest nursery, as if they were his own. I am, all the same, glad to find that I have such valuable supporting evidence of the usefulness of the figures as is afforded by the authorities in question—a practical nurseryman and the editors of important horticultural journals in England and America. The object of this note, however, is to accord credit where credit is due. *J. Wright.* [We were under the impression that the figures copied by us were original. Ed.]

SCHUBERTIA GRANDIFLORA.—This plant was well described by W. Harrow in your columns of September 28, p. 345, and I quite agree with him that it is a plant which should meet with greater favour from gardeners, being good for exhibition and general decorative purposes. The plant seen by W. Harrow at Sandy show was grown by me, and was then past its best, it having been covered with bloom for more than two months. The reason the plant was not in good bloom when shown was that, owing to my having changed it from a warm stove to a cool conservatory, the free growth necessary for a continuance of bloom was checked. It is a plant which, with proper care in a growing temperature, will continue to bloom for several months. The same kind of treatment usually afforded Stephanotis floribunda is suitable for this plant. As the plant above alluded to was bought during the first year it was sent out by Messrs. Hooper, of Pine-apple Nursery, Maida Vale, I have had sufficient time to prove its worth. *Wm. Rabbitt, The Gardens, The Hasells, Sandy.*

WANT OF SUCCESS WITH ODONTOGLOSSUMS.—Perhaps you, or some of your able correspondents, can help me in a difficulty I find in respect of growing the cool-house Odontoglossums. I have a very small house in two compartments, one of which I keep as an intermediate and the other as a cool-house. It faces south, or a trifle to the east of south. It is all shaded during summer with blinds of thin scrim-canvas, which are drawn up and down according to the weather. The plants in the intermediate-house do remarkably well, and consist of a small selection of Cattleyas, Cypripediums, Dendrobiums, &c., which, almost without an exception, do admirably, making clean and healthy root and leaf-growth, and on the average flowering well. In the cool-house there is no heat in the summer at all, and there the Dendrobiums, Lælias, Cypripediums, which are suited to low temperature, do as well as can be wished, but not so the Odontoglossums of the crispum type and the Masdevallias; they root and make pseudobulbs year by year fairly, but the leaves are never the picture of health which we hear of and occasionally see, but soon become spotted, turn brown, and fall off before their time. The Masdevallia leaves often decay when quite in bud, without expanding at all. The flower-spikes when they appear very frequently shrivel up entirely, or produce malformed flowers. During the last two summers I have had a scrim-canvas screen fastened up inside the house, to break the scorching of the sun's rays, to which I attributed the mischief, I being frequently away for several hours together, so that the blinds are not pulled down with perfect regularity. The Masdevallias were this year transferred in May to a cold frame with a northerly aspect, and have only been back in the house for a week or two. Neither of these experiments has produced much visible effect. The watering is done with soft water, collected in a tank in the house, and is done regularly. The sphagnum on the pots is exceedingly healthy, and that, we are told, is an index of healthy condition of soil. Insect pests are hunted for, and are very well kept under. Ventilation is arranged to enter below the stage (at the level of the pipes), so that the plants are not exposed to draught. Finally, we are here (in the centre of England) 380 feet above the sea, and account ourselves in a subalpine climate, in which we might expect these cool-house plants to succeed well. According to the accounts given by successful growers, reported in the *Gardeners' Chronicle*, very different methods seem practised with equally good results. I feel there must be something very wrong in my method of treatment, but after much pondering cannot see it. If you or any of your correspondents can help me, I shall go on and try again; if not, I fear I must renounce entirely the growth of this beautiful section of plants. *L. C.*

LEAVES OF HELLEBORUS NIGER CURLING UP.—For several years some plants of Helleborus niger var. maximus have done very well in a frame, growing in deep free soil, and covered with lights in flowering time. They have been divided and transplanted, and the soil renewed as there seemed to be occasion. Last year one or two began to curl up their leaves, and the habit has spread to other plants this year. I can detect no insect at any stage of growth, but have syringed with the usual insecticide mixtures without curing the defect. Perhaps some reader of the *Gardeners' Chronicle* can tell me about it. In another part of the garden, plants are attacked with Peronospora, but these are quite free from it. *C. Wolley Dod, Edge Hall.*

DAHLIAS FOR AUTUMN AND WINTER FLOWERING.—Most people who grow Dahlias have been greatly disappointed at various times when a severe frost has occurred early in the season, and killed them when in full beauty. Mr. Gilbert, of Burghley, has hit upon an excellent plan for prolonging the season of these useful autumn flowers. He procured young plants of several white Pompon varieties last spring, and instead of planting them out, as usual, he potted them on, until eventually they were put into 9-inch pots, and stood outdoors in a sheltered position, on a bed of ashes. The flowers were picked off as they appeared, and a few small sticks inserted as supports for the plants, which have kept very dwarf and compact all the time. After the middle of September the flower-buds were allowed to remain, and the plants were moved inside before severe frost came. When I called there, a few days since, there was a house full of beautiful flowers that would prove very acceptable for many purposes, now that most of the autumn flowers are getting scarce, and the plants promise to keep on flowering for a long time to come. They all belong to the Pompon class, and the best varieties were White Aster, White Bedder, F. A. Zachman, and John Spittle. I counted forty-two flowers and large buds on one plant. They were growing in a vinery in which no fruit was hanging, and they have given good return for the small amount of labour incurred in growing them in pots. *W. H. Divers, Ketton Hall, Stamford.*

PRESERVING APPLES IN SOIL.—In common with your correspondent, "A. D.," I remember when a boy, finding Apples in the orchard which had lain hidden in the grass and leaves till spring. What mattered it then that they were slightly musty? They were plump, juicy, and scarce. Claygate Pearmains and Ribstons stood the ordeal of winter better than softer varieties. The plan of storing Apples in earth, or "clamping" them, is practised in some parts of the country, but it is not to be recommended, as the fruit acquires a slightly musty and bitter taste. If stored in sand it is difficult to get the grit out of the eyes and stalk cavities. The best material is the siftings from burnt clay, which is free from germs of any kind. I have tried moss, but this also gives a musty taste to the fruit stored in it or on it. So does straw, and, worse still, hay. Even boards convey an undesirable flavour to fruit stored upon them, and I always interpose sheets of whitey-brown paper between the fruit and the shelves. Earth makes a good floor for storing fruit, but it should be sweet and clean. *W. R., Streatham Hill.*

PAPYRUS ANTIQUORUM.—This stately aquatic (the paper rush of the ancient Egyptians) is not often met with in private gardens, although introduced, according to Paxton, so long ago as 1803. Where accommodation can be found for it, and rare plants are valued, it should certainly find a place. When well cared for, its triangularly-shaped stems reach to the height of 13 feet, surmounted by a large cluster of pendant leaves, afford a distinct and attractive appearance. The management of the plant is simple in suitable situations; it will, however, succeed in a warm house if placed in a large pot or tub of heavy loam mixed with sand, and kept constantly wet; but like other aquatics requiring heat, it is more at home with the base of the pot submerged in a warm water tank, and in such positions its roots readily spread out into the water. Its powers of endurance under adverse circumstances are considerable. My employer, two years since, dug up a plant from a swamp near Syracuse, which he had potted and brought home in his yacht, after several weeks' exposure on deck. On reaching home the plant speedily regained health, and is now a grand specimen. The plant is increased by division of its rhizomes. *Thomas Coomber, The Hendre Gardens, Monmouth.*

SPIRÆA DOUGLASII.—The flowers of this variety are generally produced early in August, and are of a rosy-pink colour; sometimes the individual plumes, if I may so term them, are from 6 to 8 inches in length, and very suitable for mixing with other large flowers in tall vases. *H. Markham.*

CHOU DE BURGHLEY.—At Umberslade Hall gardens, near Solihull, a large breadth of this valuable vegetable of Mr. Gilbert's is now to be seen in its best character, and Mr. Pritchard accords it high praise for table use. It forms conical firm heads, which are mild in flavour when cooked, and very delicious, and is prized more than any other Cabbage for use at the present time. I certainly can speak in praise of its use on the table, and think Chou de Burghley will find its way into most gardens, when its merits are more generally known. *D.*

BEDS FOR WINTER AND SPRING.—The time is now at hand for making alteration and beautifying the flower garden for winter and spring, and so far as we are concerned, I am glad to say our garden is nearly completed without adopting the advice of your Calendar writer in your issue of October 12. I would advise him to discard all his dreadfully mutilated shrubs and rabbit-nibbled Heathers, and fill his garden with all the old-fashioned flowers to be obtained; and there are plenty to make a garden gay from the time of planting until they are again

planted with their summer occupants, excepting when they are covered with snow, then, like the mutilated shrubs, they will be all of an invisible green. Such methods as he unfolds are, in these days, scarcely to be recommended for general adoption. I have also a great objection to the way bulbs are generally planted in open beds, and especially the manner of planting them in the public parks. It requires no skill to grow Hyacinths and to have a good bloom, if you buy good bulbs. I imagine if good old-fashioned flowers were more planted there, the beds would be much more appreciated by the people, and the cost would be considerably less than at present. Spring and winter gardening has been done here for more than thirty years with flowers; our beds are gay now, and give a pretty good idea of what the colour will be in each bed in the spring. To do this, we grow from 6000 to 7000 Polyanthuses of various colours; the whites and the yellows forming a special feature in the garden here, as they are thoroughly distinct, and make a splendid show, and all raised from seed. And this we sow in the open ground, just as Cabbage seed is sown, and no coddling is required. These plants are all planted out in the month of May, about 6 or more inches apart, and after one summer's growth they are shifted to the flower garden in October, and with this treatment they are in good flower now, and will continue to throw up flower-stems to the number of twenty or more. In addition to these, we grow a few thousand Pansies from seed sown under hand-glasses in the open ground. The beds and borders of those plants are now planted, and are fairly well filled and covered with flowers. They will never be free of flower, more or less, all the winter. The white and silver-foliaged Arabis have their places, also a great quantity of alpine Auriculas, Valeriana Phu aurea, Myosotis, Aubrietia, and various other plants. In addition to all this, we have a good sprinkling of bulbs. Tulips are used principally between the Arabis, where the objectionable stems are out of sight; the same thing might be said of the Valeriana, especially if scarlet Tulips or blue Hyacinths are planted amongst it. The yellow or white Polyanthus make a good groundwork if planted with coloured Tulips or Hyacinths among them. As I live in a cold corner of North Yorkshire, you may think it presumption on my part to give advice on this subject, but I think that filling beds with mutilated shrubs is not in keeping with the gardening of these days. *William Culverwell, Thorpe Perrow.*

IMPATIENS HAWKERII.—This plant is in great beauty just now in the Birmingham Botanical Gardens, and as it is grown there it is unquestionably a valuable addition to our autumn-flowering plants, especially for its rich rosy-carmine colour. The plants now in flower are from cuttings struck in February last, taken from plants kept in an intermediate-house through the winter. Mr. Latham, the Curator, says that this plant does not flourish when over-potted; and when the pots are full of roots, he applies a little manure-water, and he finds that the plant flourishes and flowers best when kept on the shady side of the house. If exposed too much to the sun, the young growth becomes damaged, and the flowers imperfectly develope. The soil used consists of turfy loam, leaf-soil and sand. Just now several fine plants of the scarlet Salvia are in great beauty, and this plant is always done well here. *D.*

LIQUIDAMBAR STYRACIFLUA was better known and sought after as an ornamental tree thirty years ago than at the present time, and yet it is one of our brightest-coloured foliaged ornamental trees. In the pleasure-grounds at Highbury, near Birmingham, examples can now be seen of this tree, bright in colour, and conspicuous objects in the shrubberies, and, in consequence, many other specimens are to be planted. *S. H.*

LARGE YIELD FROM FIVE POTATOS.—The gardener of the Forest of Glen Tana, Aboyne, N.B., has raised 292 very large tubers from five original sets of Sutton's Abundance variety. *W. B.*

LATHYRUS SIBTHORPII.—About the end of last July, mention was made of some pink flowers exhibited at a show near Chester as L. Sibthorpii. Their bright rose colour was much admired, and it was suggested that they were a variety of L. rotundifolius. I have just received from Mr. Weaver, gardener at Christleton Hall (who exhibited them) rooted plants with leaves and full seed-pods, and find that they undoubtedly belong to L. tuberosus—a plant which claims to be native. This disposes of one of the claimants for the name L. Sibthorpii; another, which a friend in Devonshire sends me, and which flowers in April, and was originally from the Oxford Botanic Garden, is not yet identified with L. rotundifolius, but is suspected to be a form of it. *C. Wolley Dod, Edge Hall, Malpas.*

SOCIETIES.

ROYAL HORTICULTURAL.

October 22.—At the meetings of the Committees, held at Westminster, last Tuesday, Mr. Wildsmith delivered an interesting lecture on Pears, in which he advocated the use of cordons on the Quince stock as bearing earlier and better coloured crops of fruit. It was argued that better results were obtainable from trees on the Quince, but it was at the expense of labour. If allowed to grow without attention, then the Pear stock gave a heavier yield. For cultivation in the open, Mr. Wildsmith preferred pyramids on the Quince, and he did not believe in intercropping.

The weather was very unfavourable for a horticultural exhibition, a fog coming on and necessitating the free use of gas in the hall, and the true colours of the flowers were consequently hidden.

Floral Committee.

Present: J. Fraser, Esq., in the chair, and Messrs. B. Wynne, R. Dean, H. Herbst, H. Cannell, W. Holmes, L. Castle, T. Baines, C. Noble, C. T. Druery, S. Hibberd, and G. Paul.

The chief exhibit was that of Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, S.W., who had a very interesting collection of plants suitable for table decoration, and comprised over sixty different kinds, some of which are not frequently seen in use for the purpose suggested. There were various Ferns, Nephrolepis Duffi, Adiantum, and Pteris; Palms in variety, elegant Crotons, narrow-leaved Dracænas, Carex viridis, and a new variegated Carex, much resembling it, but with narrower, more drooping leaves, with a broad yellow median variegation, a very pretty novelty, which is likely to grow in favour; Sarracenias, Nepenthes Mastersiana, a small plant with several pitchers, which hid the pot from view; Aralias, Ardisia mamillata, Tillandsias, variegated Pine-apple, Ficus Parcelli, ornamental-leaved Begonias, and other subjects. The same firm also contributed an effectively arranged collection of tinted leaves suitable for decorative purposes. These included several Acers, Liriodendron tulipiferum, Cratægus crus-galli, Quercus laurifolia, Cornus sanguinea, Amelanchier arbutifolia, Rhus Osbeckii japonica, &c.

A hybrid between a Rhododendron (one of the Javanicum hybrids), and Azalea indica Stella was also sent by Messrs. Veitch, the latter being the pollen parent. The Rhododendron, which was named Lord Wolseley, has large Indian yellow flowers 2 inches long, and expanding; the result of the cross is a plant with rich orange scarlet flowers, with a wide tube and small lobes, and about one half the size of the flowers of the female parent; the plant was about 18 inches in height, and the flowers had a texture intermediate between its parents. The leaves are leathery, with the veins showing prominently.

From the Swanley Nurseries, Kent, Messrs. H. Cannell & Sons sent a few examples of Chrysanthemum bloom, well developed; the leading novelty was seen in Eynsford white, a fine Japanese bloom in the way of Avalanche, but more dense and of better substance, the petals are pure white and fairly broad; a pale buff Anemone-flowered variety, M. C. Lebosc; Miss Gorton, rosy-lake Japanese; Sunflower, rich yellow; Avalanche, C. Orchard, C. Audigier, and the richly-coloured E. Molyneux were also shown. Wm. Neville, rich ochre-yellow reflexed, was another good variety, with broad petals and distinct colour. Of Anemone flowered varieties, M. Pankoucke, deep madder-brown with yellow tips to the florets, and M. Castor, with dull crimson lake quilled rays were the most conspicuous. Zonal Pelargoniums Eynsford Gem, rich scarlet with a small white eye; and Beauty of Kent, salmon-pink shaded darker towards the centre, were shown; both varieties have large pips and good compact trusses. Plants of the pretty Begonia Octavie, and cut blooms of various double and single tuberous varieties, were also shown.

From Mr. W. Wildsmith, Heckfield Place Gardens, Winchfield, Hants, had some fine blooms of Chrysanthemums, including a dozen excellent specimens of Avalanche; others were Madame J. Laing, Sarah Owen, Florence Percy, W. Holmes, and Madame de Sevin.

Chrysanthemums were also contributed by Messrs. J. Laing & Sons, Forest Hill, S.E., these were Stanstead Surprise, a flower recalling Madame de Sevin, but is larger and of a deeper hue; Condor, a large broad petalled flower of a rough appearance; Madame Louise Leroy, Japanese, white with pink tips; Bertha Flight, white narrow petals, a good solid flower; and Monsieur Bernard, dull crimson Japanese.

Mr. G. Stevens, Putney, also sent a few blooms, including the Anemone-flowered Nelson and Gorgeous, a bright yellow Japanes flower. A large pot of Hæmerocallis macrostephanum in flower, came from Mr. G. Wythes, Sion House Gardens, Brentford: it is a useful free-flowering plant, and may also be used for cutting from.

A group of Ferns which came from Mr. H. B. May, Dyson's Lane Nursery, Edmonton, had several useful and elegant varieties of Pteris and Adiantum, as well as others, including Pteris leptophylla princeps, the fronds of which are ovate bipinnate, the primary pinnæ being long drawn out and crested slightly; the whole plant is compact, and the colour dark green.

Orchid Committee.

Present: H. J. Veitch, Esq., in the chair; and Messrs. J. O'Brien, J. Dominy, H. Ballantine, H. M. Pollett, J. Douglas, and E. Hill.

A fine plant of Odontoglossum grande, Tautz's variety, was contributed by Mr. Cowley, gr. to F. G. Tautz, Esq., Shepherd's Bush, W.; it had a spike of six flowers, each measuring about 6½ inches across, and the colouring was also good. The variety aurea was also shown, and likewise Odontoglossum Insleayi splendens, and its var., aurea, which is pale coffee-coloured, and of no great beauty.

Mr. Dennison, gr. to — Gledstane, Esq., Manor House, Gunnersbury, sent a well-grown and flowered example of Dendrobium formosum giganteum, for which a Cultural Commendation was given.

Mr. Whillans, gr. to the Duke of Marlborough, Blenheim Palace Gardens, Woodstock, sent a plant of the Blenheim variety of Cattleya Dowiana, pale cream and crimson.

From the gardens of Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, came plants of Cœlogyne speciosa, with a large flower, 2 to 3 inches long, pale translucent brown, with the lip rich crimson-brown inside, with a white median lobe; and Epidendrum sceptrum, with four fine racemes 18 inches long, bearing a number of the crimson-brown and yellow flowers.

Messrs. F. Sander & Co., St. Albans, contributed, under the name of Dendrobium Statterianum, a plant with several flowers of rich purple; it was apparently closely allied to D. bigibbum. Also D. hæmatochilum var. pictum, with a pale rosy-crimson lip, with twisted sepals and petals, which were spotted brown on a greenish-brown ground.

Fruit Committee.

Present: T. F. Rivers, Esq., in the chair; and Messrs. W. Warren, W. Wildsmith, J. Burnett, W. Denning, R. D. Blackmore, G. Bunyard, P. Crowley, T. J. Saltmarsh, W. Bates, G. Wythes, J. Hudson, H. Balderson, and J. Cheal.

Messrs. Gaymer & Son, Banham, Attleborough, sent samples of sparkling cider of fine quality, and also a collection of Apples used for its production. There were besides several varieties regarded as cider Apples, such varieties as King of the Pippins, Warner's King, Ribston, Aromatic Russet, New Hawthornden, Golden Noble, Court Pendu Plat, Cellini, &c.—about sixty dishes in all.

Mr. Hudson, gr. to the Messrs. de Rothschild, Gunnersbury House, Acton, sent a collection of fine Pears and Apples, in which were Beurré Superfin, Pitmaston Duchesse, Louise Bonne of Jersey Pears; and Apples, Winter Queening, Winter Nelis, Golden King of the Pippins, and Cox's Pomona.

A number of first-rate Pears were contributed by Mr. Allen, gr. to Lord Suffield, Gunton Park, Norwich, Marie Louise, Beurré Bachelier, Durondeau, General Todtleben, Emile d'Heyst, Doyenné du Comice, British Queen, Beurré Diel, and Glou Morçeau being among the best examples.

An extensive collection of Pears was also sent from the gardens of the Society at Chiswick, the best being Vineuse, Comte de Laumy, Beurré Superfin, Napoleon, Emile d'Heyst, Beurré d'Anjou, Buerré Diel, Beurré Charneuse, Flemish Beauty, and Marie Louise.

Mr. T. Myles, Appley Towers Gardens, Ryde, Isle of Wight, sent three varieties of seedling Grapes, crosses between Black Alicante and Gros Colmar, one of which was Certificated as Appley Towers; it is a black variety with a long bunch, berries ovoid, flesh firm, juicy, and slightly muscat in flavour.

Messrs. G. Bunyard & Co., Maidstone, sent a grand example of Apple Bismarck; and Mr. Tice, Feltham, Middlesex, equally fine Blenheim Orange.

Pines were sent by Mr. Bates, gr. to J. S. Nicholson, Esq., Poulett Lodge, Twickenham. There were two fine fruits of Smooth Cayenne, weighing 6 lb. each; and one of Prince Albert, 4 lb. There were other minor exhibits, which do not call for notice.

Awards were made as follow:—

By the Orchid Committee.

Botanical Certificate.

To Epidendrum sceptrum, from Sir T. Lawrence, M.P.

Award of Merit.

To Odontoglossum grande, Tautz's var., from Mr. Tautz.

Award of Merit.

To Chrysanthemum Nelson, from Mr. J. Stevens.

To Chrysanthemum Stanstead Surprise, from Messrs. J. Laing & Son.

To Chrysanthemum M. Chas. Lebosc, from Messrs. Cannell & Son.

To Chrysanthemum Wm. Neville, from Messrs. Cannell & Son.

To Chrysanthemum Eynsford White, from Messrs. Cannell & Son.

To Chrysanthemum M. Pankoucke, from Messrs. Cannell & Son.

By the Fruit Committee.

First-class Certificate.

To Grape Appley Towers, from Mr. Myles.

By the Floral Committee.

First-class Certificates.

To Carex sp. variegata, from Messrs. J. Veitch & Sons.

To Pteris leptophylla princeps, from Mr. H. B. May.

Medals.

Silver Banksian.

To Messrs. J. Veitch & Sons, for group of table and decorative plants.

To Messrs. Gaymer & Co., for collection of cider Apples.

To Mr. W. Allan, for collection of Pears.

To Mr. Hudson, for collection of Apples and Pears.

Bronze Banksian.

To Messrs. J. Veitch & Sons, for cut specimens of autumn foliage.

To Mr. H. B. May, for group of Ferns.

NATIONAL AURICULA AND NATIONAL CARNATION AND PICOTEE SOCIETIES (Southern Section).

The annual general meeting of the members of these Societies took place at the Horticultural Club, Hotel Windsor, on the 22nd inst., Mr. Shirley Hibberd in the Chair, among those present being the Rev. H. H. D'Ombrain, H. Cannell, T. E. Henwood (Treasurer), C. Philips, W. L. Walker, H. Turner, M. Downie, R. Dean, J. F. Kew, &c. The minutes of the last annual meeting having been read, the business of the Auricula Society was taken. In reference to the dates of the exhibitions, it was reported that the Royal Horticultural Society would hold a meeting on April 22 in the Drill Hall, and that the Council would offer the same terms as last year. Mr. William Holmes wrote on behalf of the Royal Aquarium Company, stating that it was in contemplation to hold a series of exhibitions during the year, and offering terms to the Auricula and Carnation Societies to take their exhibitions there. It was also stated that the Council of the Royal Horticultural Society contemplated holding an exhibition of Ferns and Carnations at Chiswick on July 22 and 23, and that an extensive trial of border Carnations and Picotees would take place in the Chiswick Gardens during the summer; and it was thought advisable, seeing the Council offered the Carnation Society the same terms as last year, that the Carnation show should take place at Chiswick on July 22. Eventually, it was agreed that the proposals of the Royal Horticultural Society be accepted, the Auricula show to be held in the Drill Hall, Westminster, on April 22, and the Carnation show at Chiswick on July 22; that the Committee co-operate with the Council in carrying out a Carnation conference, that Mr. Martin Rowan be requested to read a paper on the "Culture of Carnations in Towns," and Mr. Richard Dean one on "Border Carnations." The Secretary was instructed to write to Mr. Holmes, and thank him for his offer on behalf of the Aquarium Company.

The Treasurer, Mr. T. E. Henwood, submitted a financial statement, showing there was a balance in hand in favour of the National Auricula Society of £7 18*s.* 9*d.*, and of the Carnation and Picotee Society of £4 7*s.* 5*d.*; the sum of £25 having been invested at the commencement of the year. Mr. J. Douglas submitted a report dealing with the exhibitions of the present year, and bearing testimony to the prosperous condition of both societies. Mr. Shirley Hibberd was re-elected President of the National Auricula Society; Dr. Hogg, Dr. Masters, and Messrs. J. T. D. Llewelyn, H. S. Leonard, and H. J. Veitch vice-Presidents; Messrs. J. F. Kew and J. Lakin were added to the committee; Dr. Hogg and Mr. H. J. Veitch were re-elected auditors; Mr. T. E. Henwood was re-elected Hon. Treasurer, and Mr. J. Douglas Hon. Secretary. Mr. J. T. D. Llewelyn was re-elected President of the Carnation and Picotee Society; the names of Lady Wolverton, Lady West, and Miss Tufnell were added to the list of patrons; Messrs. H. S. Leonard and H. J. Pearson were added to the Vice-Presidents, and the committee was re-elected, similar auditors, Treasurer, and Secretary being also re-elected. The schedules of prizes of last year were adopted for the shows in 1890, and it was arranged that a meeting of the Committee should take place on March 11 to elect judges, &c. A necessary revision of the rules was made, and the amount of the annual subscription was made to read, "five shillings and upwards." Several new members were elected, and the meeting closed with a vote of thanks to the Treasurer, Secretary, Horticultural Club, and to the Chairman for presiding.

NATIONAL CHRYSANTHEMUM.

Oct. 23.—A meeting of the Floral Committee took place at the Royal Aquarium on the above date, Mr. E. Sanderson in the chair, the committee being numerously represented. First-class Certificates of Merit were awarded to President Hayes (reflexed Japanese), rich deep golden-yellow, large, full, and symmetrical, and of a dwarf habit of growth; and to Thomas Stevenson (Japanese), a sport from Criterion, orange-crimson, slightly shaded—a remarkably fine full flower; Japanese Anatole Cordonnier, deep magenta-crimson, narrow, and somewhat twisted petals, was commended for its colour; and Victorine, a small brownish-red Pompon of the Bijou type, apparently very free blooming, was commended as a variety to cut from. The above came from Mr. R. Owen, Castle Hill Nursery, Maidenhead, who also had Eugénie Giat, reflexed, orange-crimson, good broad petal; Harvest Queen, reflexed, pure white, like a small Elaine—very dwarf habit; Fred. Fortescue, reflexed, bright lilac-pink—very pretty; Gladys Spaulding, a Japanese Anemone, yellow and brown guard petals, with golden centre. The committee requested to see this again. Sir Joseph (Japanese), a reddish-cerise sport from Peter the Great, which promises to make a good market plant, and Charming, a large and striking golden-yellow single variety, having four rows of guard petals.

Messrs. W. & G. Drover, Fareham, sent Antoinette Farez (incurved), like Antonelli, but a better flower and colour, though considered not so good as Golden Eagle, bright crimson, with buff reverse; M. Lawson (Japanese reflexed), clear deep pink—good size and pleasing, and evidently a strong grower; and W. M. Singerley (Japanese) crimson magenta.

A First-class Certificate was awarded to Madame Louise Leroy, pure white—a large full flower, quite distinct from either Avalanche or Eynsford White—but which was scarcely worthy this high award, from Mr. W. Fyfe, Overstone Park Gardens, Northampton.

A First-class Certificate was awarded to Emma Stevens (reflexed Japanese), very fine and full, of superb build and great depth, French white in colour, from Mr. George Stevens, St. John's Nursery, Putney, who also had Flora (reflexed), white, a large full flower, shown in too advanced a condition; and Alfred Stevens (incurved), sport from William Holmes, bright crimson, with a buff reverse, very rich in colour; the committee wished to see this again.

First-class Certificates of Merit were awarded to Stanstead White, a very large pure white Japanese, of the Dragon type, measuring nearly a foot across; and M. Charles Lebosc (Japanese Anemone), pale yellowish-buff throughout; a very fine and distinct variety. These came from Messrs. J. Laing & Co., Stanstead Park Nursery, Forest Hill, who had also Souvenir de Madame Blandinières (Japanese), bright deep crimson, very showy, but somewhat thin in the petals; and Condor, a large flower, with very broad petals, slightly tinted with delicate lilac, but too thin in substance.

From Mr. H. Cannell & Sons, Swanley, Kent, came a large and interesting collection of cut blooms, and 1st Class Certificates were awarded to Mons. Pankoucke (Japanese Anemone), Shown also by Messrs. J. Laing & Sons: to Eynsford White; to Robert Cannell (incurved), sienna-red, with golden buff reverse, very large and full, and highly promising. This firm also had Crimson Precocité, a charming bright coloured pompon of excellent shape. Sabine (Anemone Japanese), pale yellow, having broad guard petals, and an undeveloped centre; Polar Star, a pure white reflexed; Mr. Grant (Anemone Japanese), pale rosy-pink; William Neville (Anemone Japanese), bright orange-buff, of the build of Christine; M. Caster (Anemone Japanese), pale lilac-rose—a fine central cushion of guard petals, but deficient in the ray florets; and Miss Gorton (Japanese), delicate pink—very fine. From Mr. George Addison, Croydon, came George Addison (incurved), lilac-pink, with silvery reverse, like Lady Slade and Lady Hardinge.

A vote of thanks was awarded to Mr. A. S. Fraser, Camberwell, for a stand of twelve blooms of fine Japanese varieties.

From Mr. F. Perkins, Leamington, came some flowering shoots of Chrysanthemum, with their leaves having a burnt appearance. It was considered that the plants had been over-fed with some stimulant that had affected the roots, and caused the seared appearance of the leaves.

Law Notes.

CLAIM FOR PRIZE MONEY.

On Friday, October 18, Mr. Alfred Winfield, of Hounslow, sued Mr. Alex. Dean, of Bedfont, at the Brentford County Court, for the sum of fifteen shillings, the balance of the value between the 1st and 3rd prizes, for an exhibit displayed by the former at a recent flower show held at Hounslow.

Mr. Charles Robinson appeared to defend the Horticultural Society.

At the outset of the proceedings, the plaintiff asked how many witnesses the solicitor for the defence proposed to call, as he should wish the Court to be cleared of them, but Mr. Robinson replied that he had none.

Mr. Winfield, who appeared with a number of papers in his hand, then commenced to address the Court, but was immediately stopped by his Honour, who said he merely wanted the facts of the case.

Plaintiff said that at the last exhibition held by the Hounslow Horticultural Society, he exhibited a model garden, which he contended was the only one shown. (At this point Mr. Robinson got up and stated that there were several exhibited, two others being placed by the defendant and fellow judges 1st and 2nd, and the defendant's garden was 3rd). The plaintiff, however, still stated that his was the "only model garden," and for which he was awarded 3rd prize, and he thought he should have had the 1st. At the close of the show he saw the Secretary about the circumstances, who told him to write to him, which he did, but had received no reply. He (Mr. Winfield) was of opinion that defendant was the instigator of his not receiving the 1st prize.

The case was here stopped by His Honour as a non suit.

Mr. Robinson applied for costs for his client, and 5*s.* was allowed.

At the close of the Court, Mr. Winfield paraded the streets of Brentford with his "model." *Middlesex Chronicle, Oct.* 19.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending October 21, is furnished from the Meteorological Office :—

"The *weather* has remained in an exceedingly unsettled state, with heavy falls of rain in many parts of the kingdom. Fog has prevailed over England at times, and thunder and lightning were observed in many places during the latter part of the week.

"The *temperature* has varied greatly in different localities; in the Midland Counties, the West of England, the South of Ireland, and the Channel Islands, the average for the week has been below the mean, and in 'England, E.,' it has been about equal to the normal; but in all the other districts a slight excess is shown. The highest readings were observed, as a rule, between the 15th and 17th, when the thermometer rose to between 55° and 60° in most districts, and to 62° in 'England, E.,' and 'England, S.' The lowest readings were observed during the early part of the time over England, but towards the close of the period over Ireland, the minima ranging from 30° in the 'Midland Counties,' and 31° in 'Scotland, N.,' and 'Scotland, E.,' to 39° in 'Scotland, W.,' and 43° in the 'Channel Islands.'

"The *rainfall* has been more than the mean in all districts excepting the north and west of Scotland. Over the southern parts of Ireland and England the excess has been considerable.

"*Bright sunshine* has been, as a rule, very deficient, the percentages of the possible amount ranging from only 6 in 'Scotland, E.,' and 'England, N.W.,' and 7 in 'England, N.E.,' to 24 in 'England, E.,' and 30 in 'Scotland, N.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Accumulated. Above (+) or below (—) the Mean for the week ending October 21.	Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
	Day-deg.	Day-deg.	Day-deg.	Day-deg.		10ths Inch.		In.		
1	2 +	39	0	+ 159	+ 12	1 —	196	32.9	30	23
2	1 +	34	3	— 36	+ 22	4 +	161	22.4	6	29
3	1 +	43	0	— 36	+ 8	5 +	149	20.4	7	27
4	0 av.	51	0	— 51	+ 125	6 +	153	22.3	24	32
5	1 —	44	2	— 50	+ 77	1 +	144	23.2	15	29
6	1 +	65	0	— 5	+ 75	11 +	145	21.6	14	32
7	1 +	44	0	+ 6	— 17	4 —	167	32.9	9	31
8	1 —	41	0	+ 4	0	1 +	155	26.6	6	30
9	2 —	53	0	— 111	+ 93	11 +	157	28.9	17	36
0	1 +	49	0	+ 22	— 49	4 +	188	31.9	16	26
1	1 —	49	0	— 26	— 6	14 +	168	30.5	20	33
2	2 —	75	0	+ 62	— 16	13 +	162	23.0	16	42

The districts indicated by number in the first column are ie following :—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, October 24.

A small cargo of Nova Scotia Apples to hand his week, quality very inferior. No improvement n business. Market well supplied. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	7 0	Peaches, per doz.	4 0-	8 0
Cobs, per 100 lb.	110 0-	...	Pine-apples, Eng., lb.	1 6-	3 0
Grapes, per lb.	0 6-	2 6	— St. Michael, each	2 0-	6 0
Lemons, per case	21 0-	45 0	Plums, ½-sieve	2 6-	5 0

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0 6-	...	Mustard and Cress, punnet	0 4-	...
Beet, red, per dozen	1 0-	2 0	Onions, per bunch	0 5-	...
Carrots, per bunch	0 6-	...	Parsley, per bunch	0 4-	...
Cauliflowers, each	0 3-	...	Shallots, per lb.	0 6-	...
Celery, per bundle	1 6-	2 0	Spinach, per bushel	2 6-	...
Cucumbers, each	0 6-	0 9	Sprouts, per lb.	0 4-	...
Endive, per dozen	1 6-	...	Tomatos, per lb.	0 9-	...
Herbs, per bunch	0 4-	...	Turnips, per bunch, new	0 5-	...
Leeks, per bunch	0 3-	...			
Lettuce, per dozen	1 6-	...			
Mushrooms, punnet	1 6-	...			

Potato Market still quiet and no special demand for anything except the very best samples. Magnums and Imperators: Blacklands, 45*s.* to 55*s.* per ton; Lincolns, 50*s.* to 65*s.*; Yorks, 65*s.* to 80*s.*; and Kents, 70*s.* to 90*s.* *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Evergreens, in var., per dozen	6 0-	24 0
Aspidistria, doz.	18 0-	42 0	Ferns, in var., doz.	4 0-	18 0
— speci. plants, each	7 6-	10 6	Ficus elastica, each	1 6-	7 0
Asters, per dozen	4 0-	8 0	Foliage plants, various, each	2 0-	10 0
Begonias, dozen	4 0-	12 0	Fuchsias, dozen	3 0-	9 0
Chrysanth., dozen	6 0-	15 0	Hydrangea, per doz.	9 0-	18 0
Cyperus, per dozen	4 0-	12 0	Marguerites, doz.	6 0-	12 0
Dracæna terminalis, per dozen	30 0-	60 0	Palms in var., each	2 6-	21 0
— viridis, per doz.	12 0-	24 0	Pelargoniums, scarlet, per dozen	4 0-	6 0
Ericas, various, doz.	8 0-	18 0	Solanums, per dozen	6 0-	12 0
Euonymus, in var., per dozen	6 0-	18 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Maiden Hair Fern, 12 bun.	4 0-	9 0
Asters, English, bun.	4 0-	8 0	Mignonette, 12 bun.	1 0-	4 0
Bouvardias, per bun.	0 6-	0 9	Pelargoniums, 12 spr.	0 9-	1 6
Calla æthiopica, 12 bl.	3 0-	6 0	— scarlet, 12 spr.	0 4-	0 6
Camellias, 12 blooms	2 0-	4 0	Primulas, double, 12 sprays	0 9-	1 0
Carnations, 12 blms.	1 0-	2 0	Roses, Tea, per doz.	1 0-	3 0
Chrysanth., 12 bun.	3 0-	9 0	— coloured, dozen	2 0-	4 0
Chrysanth., 12 blms.	0 6-	3 0	— red, per dozen	0 6-	1 0
Dahlias, 12 bun.	2 0-	4 0	— Safrano, dozen	0 6-	1 0
Eucharis, per dozen	3 0-	4 0	Stephanotis, 12 spr.	3 0-	6 0
Gardenias, 12 blooms	2 0-	4 0	Sunflowers, various, per 12 bun.	3 0-	6 0
Gladioli, 12 bun.	6 0-	12 0	Tuberoses, 12 blms.	0 6-	1 0
— 12 sprays	1 0-	1 6	Violets, 12 bun	1 3-	2 0
Heliotropes, 12 spr.	0 3-	0 6	— French, bunch	5 0-	6 0
Lilac, white, Fr., bun.	6 0-	7 0	— Parma, 12 bun.	2 0-	4 0
Lilium, var., 12 bl.	2 0-	6 0			
Marguerites, 12 bun.	3 0-	6 0			

Orchid-bloom in variety.

SEEDS.

London: *Oct.* 23.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, write that to-day's market was thinly attended. There is, as yet, hardly any business passing in Clover seeds; Rye Grasses are dull and neglected. In Winter Tares the late advance is well maintained. Choice Blue Peas do not offer freely. Bird-seeds show no quotable variation. The new Haricot Beans are good and cheap. Mustard keeps steady. More money is asked for Rape seed.

POTATOS.

Borough and Spitalfields: *Oct.* 22. — Good demand for best samples. Trade otherwise slow, and second qualities rather in buyers' favour. Early Rose, 40*s.* to 50*s.*; Regents, 55*s.* to 75*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 45*s.* to 70*s.*; Imperators, 45*s.* to 65*s.* per ton.

Stratford: *Oct.* 23. — Quotations: Magnums, light, 55*s.* to 70*s.*; do., dark, 47*s.* to 50*s.*; Hebrons, 50*s.* to 70*s.*; Imperators, 55*s.* to 65*s.* per ton.

Spitalfields: *Oct.* 23.—Quotations: Early Rose, 50*s.* to 60*s.*; Hebrons, 50*s.* to 70*s.*; Imperators, 45*s.* to 70*s.*; Regents, 60*s.* to 80*s.*; Magnums, 45*s.* to 60*s.* per ton.

FRUITS AND VEGETABLES.

Spitalfields: *Oct.* 23.—Cabbages, 1*s.* 3*d.* to 2*s.* 6*d.* per tally; Savoys, 2*s.* to 4*s.* do.; Cauliflowers, 4*s.* to 7*s.* do.; Radishes, 2*s.* to 3*s.* do.; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Brussels Sprouts, 1*s.* 9*d.* to 2*s.* 3*d.* per half-sieve; Spinach, 1*s.* to 1*s.* 6*d.* per bushel; Greens, 1*s.* to 1*s.* 3*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Carrots, 1*s.* to 1*s.* 6*d.* do.; Parsley, 1*s.* to 2*s.* do.; Beetroots, 4*d.* to 6*d.* per dozen; Parsnips, 8*d.* to 10*d.* per score; Scarlet Beans, 1*s.* to 1*s.* 6*d.* per bushel; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Cos Lettuce, 6*d.* to 8*d.* per score; Mustard and Cress, 1*s.* to 2*s.* per dozen baskets; Leeks, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; Horse Radish, 1*s.* to 1*s.* 6*d.* per bundle; Celery, 6*d.* to 1*s.* do.; Cucumbers, frame, 1*s.* 9*d.* to 2*s.* 6*d.* per dozen; English Onions, 6*s.* to 6*s.* 6*d.* per cwt.; Belgian Onions, 5*s.* 3*d.* to 5*s.* 6*d.* per bag of 110 lb.; Dutch Onions, 5*s.* 3*d.* to 5*s.* 9*d.* per bag; Spanish Onions, 6*s.* to 9*s.* per case; Carrots, 20*s.* to 35*s.* per ton; English Apples, 2*s.* to 4*s.* 6*d.* per bushel; Pears, 1*s.* 6*d.* to 3*s.* per half-sieve; English Tomatos, 4*s.* to 6*s.* per 12 lb.; Foreign Tomatos, 9*d.* to 1*s.* 6*d.* per box.

Stratford: *Oct.* 22.—There has been an excellent supply and a brisk trade at this market during the past week. Cabbages, 1*s.* 6*d.* to 3*s.* per tally; Savoys, 4*s.* to 5*s.* do.; Cauliflowers, 4*s.* to 6*s.* do.; Turnips, 35*s.* to 43*s.* per ton; Carrots (household), 35*s.* to 40*s.* do.; do. (cattle feeding), 23*s.* to 27*s.* do.; Mangels, 14*s.* to 18*s.* do.; Swedes, 18*s.* to 22*s.* do.; Onions, Dutch, 6*s.* to 6*s.* 6*d.* per bag; do., Oporto, 5*s.* to 7*s.* per case; Apples, English, 2*s.* to 6*s.* per bushel; Watercress, 6*d.* per dozen; Walnuts, 10*s.* to 12*s.* 6*d.* per bag; Pears, 3*s.* to 9*s.* per bushel; Celery, 6*d.* to 1*s.*

NOTICES TO CORRESPONDENTS.

Books.—Roses: *J. R. The Rose Garden*, by W. Paul (Kent & Co., 23, Paternoster Row, London).—Budding and Grafting: *J. R. The Art of Grafting and Budding*, by Baltet (W. Robinson, 37, Southampton Street, Covent Garden, London, W.C.—Plant Forcing, &c.: *J. R. Villa Gardening*, by E. Hobday (Macmillan, Bedford Street, Covent Garden, London, W.C.); *The Garden Calendar*, by T. W. Sanders (Hamilton, Adams & Co., Paternoster Row).—Vines and Figs in California: *J. F. M.* We know of none. Try a foreign bookseller.

Bouvardias: *J. B.* The plants have been grown too warm, and without sufficient stopping of the shoots.

Corrections.—In article entitled "Lockinge," p. 405, for "land at Wimbourne," read "land at Lambourne.—In "Names of Plants," p. 451, in reply to "A. P. C.," read "2, Pellionia Davoueana."—In "Names of Fruits," p. 451, replying to "H. H. F.," read "3, Easter Beurré."

Fern: *A. G. W.* One of the many forms of Adiantum cuneatum.

Fungus: *J. M. P.* The huge mass of fungi, with each cap 9 inches across, and taken from a Poplar tree, is Agaricus euosmus, a rare species. *W. G. S.*

Grapes from a Late Vinery: *X. Y. Z.* The Grapes sent had the appearance of being ripened long ago. They were sweet, rather deficient in juice, and well-flavoured. The shrinkage of the juices of the berry may be the result of long keeping, or from too arid an atmosphere, with great dryness of the soil. These would all have a tendency to cause wrinkling of the skin. Examine the border; but it will not be wise to give much water, or the berries would fall.

Ham Green Favourite Tomato: *G. W. R.* Try our leading seed-houses,

Helleborus niger Leaves Diseased: *C. W. D.* They are affected with Phyllosticta heleborella, Sacc., in an immature state, with an ordinary Cladosporium growing upon it. The latter succeeds decay, the former induces it. *M. C. C.*

Hortus siccus: 700 Specimens: *J. Smith.* Advertise it in our columns.

Melon: *J. D.* Tastes must differ greatly as to what is a good Melon, as we find the one you send to have a disagreeable bitter flavour; but perhaps the sample is not a fair one.

Melons for Market: *G. W. R.* Hero of Lockinge, Bailey's Green Flesh, Colston Bassett Seedling, Eastnor Castle, Golden Perfection, Read's Scarlet. There are none better. Cox's Green Gem, when it may be obtained true, is a heavy, prolific Melon, of medium size, of fine flavour. It always sells well.

Mushroom Bed: *G. W. R.* Employ half Beech or Oak leaves, the bed being made a little thicker than if it were wholly made with horse-litter. (See "Kitchen Garden," p. 469 of this issue.) Get *Mushrooms for the Million*, by J. Wright, 171, Fleet Street, London, E.C.

Names of Fruits: *J. H.* Your fruit is that of Cydonia japonica, which frequently bears fruit in England. It is quite distinct from the Pome-

granate.—*D. S.* Apple: Striped Beefing.—*T. F. Dancer.* American Mother.—*W. H.* Pear: Thompson's (true).—*H. H.* 1, Mank's Codlin; 2, Reinette du Canada.—*R. T. F.* Cox's Pomona; *A. J. Nicholls.* 1, Huyshe's Victoria; 2, Maréchal de la Cour; 3, Comte des Flandres; 4, Alexandre Lambre; 5, Lamb Abbey Pearmain; 6, Duke of Devonshire.—*G. Robinson.* 1, Duchesse d'Angouleme; 2, Bergamote Nonpareil; 3, Autumn Bergamot; 4 and 9, Easter Beurré; 5, Winter Nelis; 7, Marie Louise; 8, Louise Bonne of Jersey; 10, Ribston Pippin; 11, Whorle Pippin.

Names of Plants: *W. S.* We cannot undertake to name varieties of Crotons. Take them to some large plant nurseryman.—*R. Upcher.* Quercus Mirbecki; Colletia spinosa; silvery stalk, with dark leaves, is apparently Teucrium fruticans; dark green serrated leaf is Guevina avellana.—*R. A.* Echinops ruthenica; Nerine angustifolia; Oxalis cernua.—*Mrs. C.* 1, Oncidium varicosum; 2, O. flexuosum.—*Briggs.* 1, Oncidium flexuosum; 2, Polystichum angulare; 3, Asplenium marinum.—*W. Reid.* Dendrobium chrysanthum.—*C. B.* 1, Begonia Saundersii; 2, Pellionia pulchra; 3, Begonia, hybrid not recognised; 4, Eranthemum Andersonianum; 5, Anthurium Andreanum; 6, Maranta zebrina; 7, Maurandya Barclayanum.—*C. L.* 1, Hymenocallis adnata (Pancratium); 2, Adiantum macrophyllum; 3, Lastrea Sieboldi; 5, Ruscus aculeatus; the others next week.—*B. Rowe.* Bulbophyllum species next week.—*C. Best.* 1, Asclepias curassavica; 2, Aster argophyllus, Musk-scented Starwort.—*W. M. Geddes.* 1, Physalis Alkekengi; 2, next week.

Nursery Tenant: *T. D.* Time in which to clear the ground of planted-out stock from six months to one year, and in some cases more time.

Vine Leaves for Winter Use: *G. R.* We know of no method of doing what you require.

CATALOGUES RECEIVED.

Lénauet-Huet, Ussy, Calvados, France—Nursery Stock (Wholesale).

T. Bunyard, Ashford, Kent—Fruit Trees.

Baltet Brothers, Troyes, Aube, France—Trees and Shrubs, Roses, Plants, &c.

Benjamin R. Cant, Colchester—Roses.

Robichon-Loyer et Fils, 7 and 9, Route d'Olivet, Olivet, near Orleans, France—Azaleas and Roses.

W. & J. Birkenhead, Sale, Manchester—Ferns and Selaginellas.

William Rossiter, Paignton, Devon—Fruit and Forest Trees, &c.

Communications Received.—J. P.—D. T. F.—E. Benary.—Dicksons.—U. D.—G. D.—W. B. H.—C. B. P.—P. W.—W. H. E.—W. D.—J. Rose.—A. B.—J. S.—W. Swan.—W. E.—A. D.—W. R.—G. N., shortly.—F. C. G.—W. H. W.—J. H. P.—E. M. P.—Rose.—J. Boland.—Rev. W. T.—J. J. W.—Bee.—T. C.—Paul Michel.

Centenary of the Chrysanthemum.—The *Gardeners' Magazine* this week is a double number of special information on the history of the Chrysanthemum in celebration of the centenary of the flower, which was certainly introduced to Europe in 1797, although there are faint records of its appearing exactly one hundred years previously. A very interesting point in the work accomplished by Mr. Shirley Hibberd and his able coadjutors, is the tracing of a number of distinct types of the autumnal flower to their sources, so that we are to have figures of the very first that appeared, and which represents the reflex section; and of the first incurved flower, which is reported to date from 1820. It happens that the Editor of the evergreen *Gardeners' Magazine* is an expert in Chrysanthemums, and has been in touch with the leading cultivators from the date of the first installation of Chrysanthemum exhibitions. In a paper, entitled "The Glorious Company of Mummers," contributed to this special issue, he records his remembrances of those ancient veterans, Robert James, George Taylor, Robert Oubridge, and others, who were the makers of the flower in modern times, and whose criteria of perfection still govern the tastes of the men who award the prizes at the exhibitions. The subject is interesting, for it constitutes a study of our social life; and it is remarked by Mr. Hibberd that two of our most important domestic institutions, the teapot and the Chrysanthemum, are gifts to us from a people most unlike us generally in tastes and manners.

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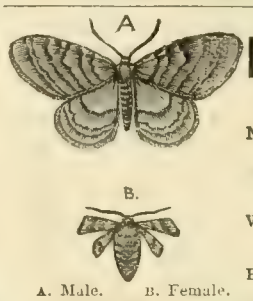
BROWN FIBROUS ORCHID PEAT 31*s.* 6*d.* per Ton, or 12*6s.* per Truck of 4 tons; Bags 5*s.* each; 10 Bags, 45*s.*

BROWN and BLACK FIBROUS PEAT, 21*s.* per Ton, or 84*s.* per Truck of 4 tons; Bags, 5*s.* each; 10 Bags, 45*s.*

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Now Ready for Catching the Winter Moths upon Fruit Trees, should be used this month.

INVALUABLE.

Write for particulars and price to

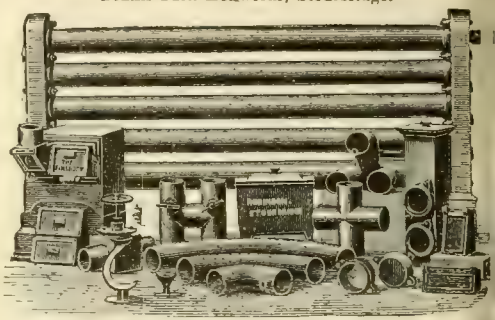
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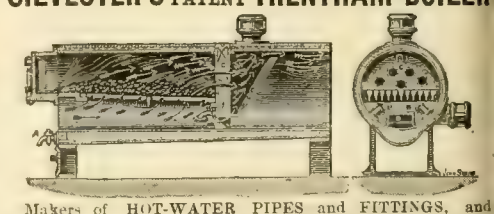


4-in. Expansion Joint Pipes, 9 feet long, 5*s.* each; 4-in. Hot-water Socket Pipes, 9 feet long, 5*s.* 3*d.* each. *Illustrated revised Price List on application, free.*

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SILVESTER'S PATENT TRENTHAM BOILER



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ROBERTS'S PATENT (IMPROVED), for Greenhouses, Bedrooms, &c.

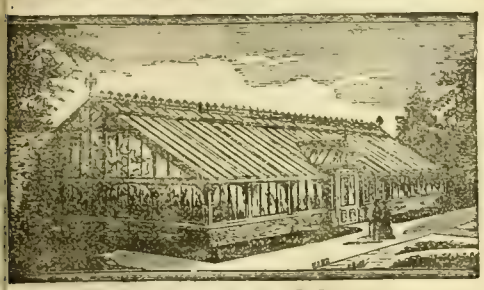
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W. RICHARDSON & CO.

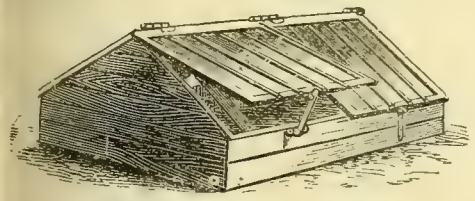
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Best Work guaranteed, and at Lowest Prices.

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PORTABLE PLANT FRAMES.

The above are without exception the most useful kind of frame for plant growing, and every one with a garden should possess one. The sashes turn right over one on to the other, and the boxes are put together with wedges, and can be taken apart in a few minutes. Sizes and prices, carriage paid to any station in England, ready glazed and painted:—

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6 feet long, 3 feet wide	Packing Cases FREE.	2	0	0
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12 feet „ 5 feet „		5	17	6

Larger sizes at proportionate prices.

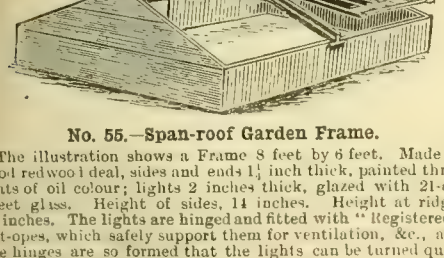
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London Agent—Mr. H. Skelton, Seedsman, &c., 2, Holloway Road, N.

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No. 55.—Span-roof Garden Frame.

The illustration shows a Frame 8 feet by 6 feet. Made of good redwood deal, sides and ends 1¼ inch thick, painted three coats of oil colour; lights 2 inches thick, glazed with 21-oz. sheet glass. Height of sides, 14 inches. Height at ridge, 32 inches. The lights are hinged and fitted with "Registered" Set-opes, which safely support them for ventilation, &c., and the hinges are so formed that the lights can be turned quite over, or taken off at pleasure.

	Length.	Width.		
1 Light Frame,	4 feet	by 6 feet ...	Cash Prices, Carriage and Packing Free.	£2 17 6
2 „ „	8 feet	by 6 feet ...		4 7 6
3 „ „	12 feet	by 6 feet ...		5 17 6
4 „ „	16 feet	by 6 feet ...		7 7 6
5 „ „	20 feet	by 6 feet ...		8 17 6
6 „ „	24 feet	by 6 feet ...		10 7 6

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A Large Stock always on Hand.

Special quotations for quantities.

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For Exhibiting Cut Blooms.

2-inch, suitable for Incurved	per doz.	3	6
2¼-inch, suitable for large Incurved and small Japanese	„	4	0
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BRASS ditto ditto ...	„	1	6
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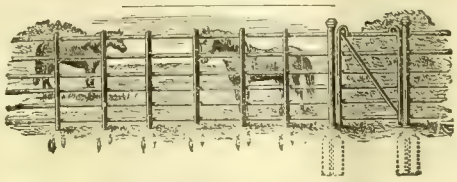
132, COMMERCIAL STREET, LONDON, E.

HILL & SMITH,

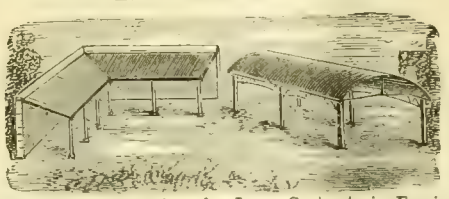
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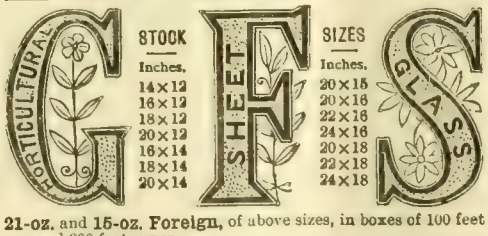
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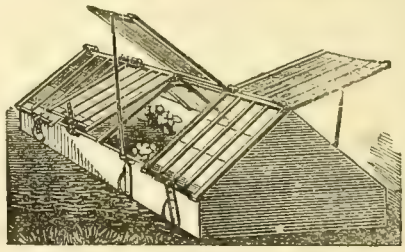
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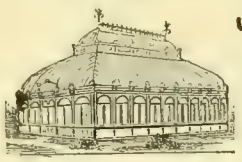
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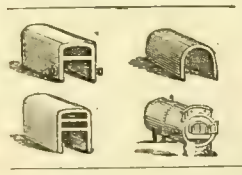
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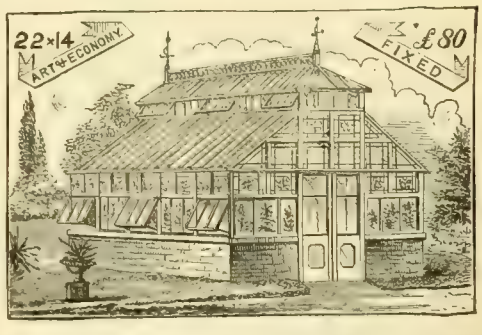
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8	„ ..	0	5	0	19	„ ..	0	10	6
9	„ ..	0	5	6	20	„ ..	0	11	0
10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
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J. BLACKBURN AND SONS are offering Archangel Mats lower than any other house in the trade; also Petersburg Mats, and Mat Bags, Raffia Fibre, Tobacco Paper, and Shading. Prices free.—4 and 5, Wormwood Street, E.C.

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Sold by Seedsmen and Ironmongers at home and abroad.

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RAFTS, BOATS, AND CYLINDERS,
AND ALL GARDEN SUNDRIES.
SEND FOR A
PRICE LIST
from the Largest Manufacturer in the Trade,
H. C. SMYTH,
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DRURY LANE, W.C.

MADE WITH BOILING WATER.
EPPS'S
GRATEFUL—COMFORTING.
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MADE WITH BOILING MILK.

PROTECT YOUR GLASS AND TENDER PLANTS.
A cheap substitute for Archangel Mats,
"FRIGI DOMO" CANVAS.
To be had of all Nurserymen and Florists.

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THE AMERICAN GARDEN ...	16th Year.	United in ONE.
THE GARDENERS' MONTHLY and HORTICULTURIST	30th Year. 42nd Year.	
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The Best County Medium for Advertising Sales of Estates is
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The "WORCESTER HERALD" is the most effective organ for giving publicity to announcements of this class. It is the leading Agricultural Paper in the County, and Circulates most extensively among Agriculturists in and around Worcestershire.

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Land Agents, Estate Managers, and all having Farms to Let would do well to advertise in the "WORCESTER HERALD," the Leading County Paper. Specially adapted for bringing such notices before Tenant Farmers. Large circulation. Moderate charge.

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WANTED, a CLERK, in the Wholesale Seed Trade, who can Correspond in French and German. One who knows Shorthand preferred.—Apply by letter to W. X., Messrs. Dawson & Sons, 121, Cannon Street, E.C.

WANTED, a SHOPMAN, must be good Salesman with good knowledge of Seed and Bulb Trade. —Apply with references, stating age and wages required to YORKSHIREMAN, *Gardeners' Chronicle* Office, 41 Wellington Street, Strand, W.C.

WANTED, a HANDY MAN in a Nursery, who can do Rough Carpentering, Painting, Glazing, Hot-water work, and make himself generally useful; abstainer preferred; must be sharp, active, and understand his work.—Particulars, and wages expected to G. PHIPPEN, F.R.H.S., Reading.

GARDENING APPOINTMENTS.

Mr. G. BANTING, for the last two years Hardy Fruit Grower at Impney Hall Gardens, Droitwitch, Worcester, has been appointed Head Gardener to H. BUCKLEY, Esq., Upper Boon, Linthurst, near Bromsgrove.

Mr. ALBERT A. GRAY, late Gardener to the Count DE BALLIET, Combe Bank, Sevenoaks, has been engaged as Gardener and Bailiff to WILLIAM L. REDHEAD, Esq., Carville Hall, Brentford, Middlesex.

Mr. JOHN BAKER, late Foreman at Melchet Court, Romsey, Hants, has been engaged as Head Gardener to Colonel PORTER, Fairford Park, Fairford, Gloucestershire.

Mr. A. SMITH, late Gardener to W. WILLIAMS, Esq., has been engaged as Head Gardener to Sir TONMAN MOSSLEY, Bart., Rolleston Hall, Burton-on-Trent.

Mr. W. RUTHERFORD, having resigned the charge of Dromoland Gardens, has been appointed Head Gardener to THOMAS GERRARD, Esq., Gibbstown, Navan, Meath.

Mr. J. H. BURN, late Head Gardener to Sir CHARLES DE HOGHTON, Bart., Hoghton Towers, Preston, has been engaged as Head Gardener to JOHN LONGWORTH, Esq., Ridgmont, Horwich, Lancashire.

Mr. D. COX, late of Oak Lodge, Southgate, Middlesex, has been engaged as Gardener to J. LYNN, Esq., Polegate, Sussex.

Mr. W. SELBY, until lately Gardener at The Highlands, Ivybridge, has been engaged as Gardener to Admiral PARKER, Delamore, Ivybridge, South Devon.

Mr. JOHN GOLD, for the past six years Gardener and Bailiff to J. R. WOOD, Esq., Barvin's Park, Potter's Bar, has been engaged as Head Gardener to F. H. NORMAN, Esq., Moor Place, Hadham, Herts.

WANT PLACES.

Letters addressed "Poste Restante" to initials or to fictitious names are not forwarded, but are at once returned to the writers.

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N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, October 26, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2549.

No. 149.—Vol. VI. {Third Series.} SATURDAY, NOVEMBER 2, 1889. {Regt. as a Newspaper. WITH SUPPLEMENT. {PRICE 3d. Post-Free, 3½d.

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THE GARDENERS' CHRONICLE IN AMERICA.

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GREAT SALE OF FRUIT TREES.

Important to Nurserymen, Market Gardeners, and Fruit Growers.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. W. Horne to SELL by AUCTION, without reserve, on the Premises, Perry Hill, Cliffe, near Rochester and Gravesend, on MONDAY NEXT, November 4, at 12 o'Clock punctually, 30,000 FRUIT TREES of the best Market sorts, comprising :—

11,000 Maiden Apples	50,000 Sir Joseph Paxton Strawberry Roots
2,000 English Paradise Apples	1,500 Wild Cherries
1,000 Standard and Half-Standard Apples	500 Standard Bigarreau and other Cherries
1,000 Maiden Plums	500 Standard Farleigh Prolific Damsons
1,000 Standard and Half-Standard Victoria Plums	1,500 Standard and Half-Standard Pears
1,000 Standard Bush Plums	20,000 Two-year Connover's Colossal Asparagus
4,000 Gooseberries and Currants	
3,000 Maiden Pears	

May be viewed one week prior to the Sale. Catalogues had on the Premises; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Tottenham, Middlesex.

ANNUAL SALE of remarkably well-grown NURSERY STOCK, HERBACEOUS PLANTS, and BULBS, for the growth of which Mr. Ware has gained a great reputation.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. T. S. Ware, to SELL by AUCTION, on the Premises, The Hale Farm Nurseries, Tottenham, adjoining the Tottenham Hale Station, G. E. Railway, on TUESDAY NEXT, November 5, at 11 o'Clock precisely, in consequence of the unusually large number of lots, a large quantity of beautifully-grown NURSERY STOCK, comprising :—

5,000 Oval-leaved Privet, 2½ to 5 feet, grown singly	30,000 exceptionally strong Sea Kale
5,000 well-grown dwarf Roses	100,000 Forcing Plants and Bulbs
10,000 Hardy Climbers	5,000 Choice Lilies
3,000 Veronica Traversii	5,000 Standard Ornamental Trees
1,000 Ornamental Grasses	And other valuable Stock, all in the finest possible condition.
10,000 Border and Tree Carnations	
5,000 Ornamental Shrubs	

The famous new yellow Chrysanthemum "Mrs. Hawkins," &c.

The Stock may be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises, or will be forwarded free by post on application to the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

N.B.—The Auctioneers desire to call the special attention of Gentlemen and the Trade to this highly important Sale. It is impossible to enumerate within the limits of an ordinary advertisement the many items of stock, as it is seldom such a quantity is offered by Auction in one day. The whole will be found to be in excellent condition.

Tuesday Next.

10,000 splendid Bulbs of LILIUM AURATUM from Japan, 35,000 AFRICAN TUBEROSES, received direct for Sale, without Reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, November 5, at half-past 12 o'Clock, 10,000 splendid Bulbs of LILIUM AURATUM, just received from Japan; a large quantity of LILIUM LONGIFLORUM, L. AURATUM VIRGINALE, and RUBRO VITTATUM, TIGRINUM, and many others; 500 LILIUM CANDIDUM, 5000 Berlin Crowns LILY OF THE VALLEY, 20,000 NARCISSUS, 1000 White Roman and Italian HYACINTHS, and a variety of Hardy BULBS.

On view morning of Sale, and Catalogues had.

N.B.—The Auctioneers desire to state that they have already examined several cases of the Lilium auratum, the Bulbs being in first-class condition.

Bagshot, Surrey.

Highly important to the Trade and Gentlemen engaged in Planting.

EXTENSIVE SALE of SURPLUS NURSERY STOCK grown to the greatest perfection and exceedingly well-rooted.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. John Waterer & Sons, to SELL by AUCTION, on the Premises, the celebrated Bagshot Nurseries, Bagshot, Surrey, on TUESDAY NEXT, November 5, and three following days, at 12 o'Clock precisely each day, and without reserve, an unusually large quantity of attractive NURSERY STOCK, beautifully grown and well-rooted, comprising 5000 Conifers, 2 to 6 feet, in rich assortment; 6000 Evergreens, 2 to 6 feet; 5000 Rhododendrons, 2 to 4 feet, an exceptionally fine lot, freely set with bloom-buds, and embracing all the choicest varieties in cultivation; fine Limes, 10 to 12 feet; and other Standard Trees; 10,000 Spruce Firs, 2 to 3 feet, many fit for Christmas Trees; and other Stock.

May be viewed any day (Sundays excepted) prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers and Land Agents, 67 and 68, Cheapside, E.C.

N.B. Bagshot Station being situated on the Nurseries, facilities are presented for the conveyance of purchasers, and Messrs. J. Waterer & Sons, will undertake to despatch any goods bought at the Sale, simply charging for the time and labour occupied.

Tuesday Next.

Standard and Dwarf ROSES, of the best sorts; CONIFERS, AMERICAN PLANTS, ORNAMENTAL FRUIT TREES, GREENHOUSE PLANTS, CARNATIONS, Dutch BUBBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, November 5, at half-past 12 o'Clock, without reserve.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Wednesday Next.

100 AZALEA INDICA, 500 AZALEA MOLLIS, 1000 GLOXINIA BULBS (fine erect varieties); GREENHOUSE PLANTS in variety, 100 lots of DAFFODILS, 400 lots of first-class HYACINTHS, TULIPS, CROCUS, and other DUTCH FLOWER ROOTS, SPIRÆAS, LILIES, and miscellaneous BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above, by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 6, at half-past 11 o'Clock, without reserve.

On view morning of Sale, and Catalogues had.

Hammersmith, W.

SALE of well-grown NURSERY STOCK, by order of Mr. F. Herridge.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, The Nursery, 47, Fulham Palace Road, Hammersmith, W., close to the Hammersmith Broadway Railway Station, on WEDNESDAY NEXT, November 6, at 12 o'Clock precisely, 3000 Green HOLLIES, 5 feet to 12 feet; 6000 AUCUBAS, 3 feet to 7 feet; 6000 Golden and Green EUONYMUS, 1 foot to 5 feet; 2000 PRIVET, 5 feet to 12 feet; 200 Golden YEWS, 2 feet; and quantities of other NURSERY STOCK.

May be viewed three days prior to the Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Brockley, S.E.

Five minutes' walk from the Ladywell Station, S.E.R.

To Gentlemen, Landscape Gardeners, and others.

SALE of WELL-GROWN NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Messrs. B. Maller & Sons, to SELL by AUCTION, on the Premises, The Brockley Nursery, Ivy Lane, Brockley, S.E., on THURSDAY and FRIDAY NEXT, November 7 and 8, at 12 o'Clock each day, without reserve, 500 bushy AUCUBAS, 2 to 4 feet; 200 specimen Weeping ASH, 1000 London PLANES, fine trees for avenue planting; LIMES, BIRCH, POPLARS, and other STANDARD ORNAMENTAL TREES, a great variety of CONIFERS, DECIDUOUS SHRUBS in variety, 2000 FRUIT TREES, comprising Apples, Pears, Plums, and Cherries; thousands of CURRANTS, CLIMBING PLANTS, and other NURSERY STOCK, the whole in capital condition for removal.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises; at the Burnt Ash Lane Nurseries, Lee, S.E; the Seed Shop, 61, High Street, Lewisham; and of the Auctioneers and Valuers, 67 and 68, Cheapside, London, E.C.

Friday Next.

CATTLEYA MENDELII and MOSSIÆ.

For Sale by order of Mr. G. T. White, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 8, at half-past 12 o'clock, and without reserve, a further portion of the well-known Stock of CATTLEYA MENDELII and C. MOSSIÆ in sheath and mostly unflowered, together with CYPRIPEDIUMS and a quantity of Cool-house ORCHIDS, the whole for sale without reserve.

The Sale will also include about 200 lots of ESTABLISHED ORCHIDS from various owners.

On view morning of Sale, and Catalogues had.

Leytonstone, E.

IMPORTANT TWO DAYS' SALE of beautifully grown NURSERY STOCK and GREENHOUSE PLANTS, arranged in lots to suit the convenience of Large and Small Purchasers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the American Nurseries, Leytonstone, E., near the Leytonstone Railway Station, on MONDAY and TUESDAY, November 11 and 12, at 12 o'Clock precisely each day, without reserve, a portion of the valuable NURSERY STOCK, consisting of 3000 Conifers, Evergreen and Deciduous Shrubs of various sizes, carefully prepared for removal; 2000 Ornamental and Forest Trees, such as clean grown Limes, 6 to 10 feet; London Planes, Poplars, &c.; 2000 Rhododendrons, including named sorts, well set with buds; 3000 Fruit Trees; a splendid selection of 4000 Standard and Dwarf Roses, embracing the finest varieties of Greenhouse Plants adapted for Conservatory and House Decoration, Climbers in Pots, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and High Road, Leytonstone, E.

Lee, Kent, S.E.

In the High Court of Justice, Chancery Division.

Neville *v.* North.

Absolute CLEARANCE SALE of NURSERY STOCK, GREENHOUSE PLANTS, GLASS ERECTIONS, and EFFECTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Manor Lane Nursery, Lee, S.E., ten minutes' walk from the Railway Station, on WEDNESDAY and THURSDAY, November 13 and 14, at 12 o'Clock precisely each day, without reserve (by the direction of Mr. Justice Chitty, the Judge to whose Court the cause is attached), the whole of the well-grown NURSERY STOCK—a great variety of Conifers and Evergreens, Fruit Trees, 5000 Aucubas, 3500 Box, 4000 Golden and Green Euonymus, 1000 Dwarf Roses, 500 Privet, 4000 Ivies in pots, Pæonies, Herbaceous Plants, 1000 Ericas, 1000 Solanums, 1000 Auriculas, 500 Fuchsias and Geraniums, 4000 Ferns, in variety; the erections of 11 GREENHOUSES, several PITS, 2000 feet of 4-inch Hot-water PIPING, BOILERS, BRICK-

Continued on next column.

Continued from previous column.

WORK, Spring Market VAN, strong Spring VAN, Tumbril CART, Garden LIGHTS, Utensils in Trade, &c.

On view three days prior to the Sale. Catalogues had on the Premises; of Messrs. HUGHES, HOOKER AND CO., Solicitors, 26, Budge Row, E.C.; of Messrs. BLAKE AND HESELTINE, Solicitors, 4, Sergeant's Inn, W.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The Nursery TO BE LET. Particulars of the Auctioneers.

Eltham.

GREAT UNRESERVED CLEARANCE SALE of over 20 Acres of remarkably well-grown and thriving NURSERY STOCK, by order of Mrs. Todman, in consequence of the expiration of the Leases.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Eltham Nursery, Eltham, Kent, 1 mile from the Eltham Railway Station, on MONDAY, November 18, 1889, and following days, at 12 o'Clock punctually each day, without reserve, the whole of the unusually well-grown NURSERY STOCK, extending over 20 acres, now in excellent condition for removal, comprising :—

30,000 Conifers.

5,000 Box, of sorts, 2 to 3 feet	3000 Hollies, of sorts, 1 to 4 feet
10,000 Laurels, of sorts, 1 to 5 feet	3400 Pinus, of sorts, 1 to 4 feet
3,700 Rhododendrons, 1 to 3 feet	7000 Ivies, of sorts
2,500 Yews, of sorts, 2 to 5 feet	2000 Clematis
15,000 Privet, 1 to 4 feet	1200 Golden Euonymus
	2000 Ampelopsis Veitchii
	1000 Specimen Border Shrubs

4000 Standard Roses, of the best named varieties; 2000 Veronica Traversii, 2500 Berberis, 6000 Fruit Trees, including Apples Pears, Plums, and others; 12,000 Standard Ornamental Trees, including Limes, Poplars, Thorns, Chestnuts, Planes, and Mountain Ash.

Arrangements can be made with Mrs. Todman, for plants to be lifted and conveyed to the Eltham Railway Station, whence goods can be transmitted to all parts of the kingdom.

May be viewed any day (Sundays excepted), prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

Maresfield, near Uckfield, Sussex.

GREAT CLEARANCE SALE of the first portion of the GENERAL NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Louisa Lady Shelley, of Maresfield Park, to SELL by AUCTION, on the Premises, the Piltdown Nursery, Maresfield, 2½ miles from Uckfield Station, L.B. & S.C.R., on TUESDAY and WEDNESDAY, November 19 and 20, at 12 o'Clock each day, the first and principal portion of valuable NURSERY STOCK, consisting of 3000 choice Border Shrubs, including many handsome specimen Coniferæ and Evergreens, 6000 Austrian Pines, 80,000 Spanish Chestnuts, Common Laurels, Green and Variegated Hollies, 1000 named Rhododendrons, 1000 Araucaria imbricata, 3000 Standard and Dwarf Roses, including a large number of Teas, 1000 bushy Golden Euonymus, 1500 Standard and Pyramidal Apples, good clean-grown trees; Herbaceous and other Plants.

May be viewed one week prior to the Sale. Catalogues had on the Premises; of M. SANDFORD, Esq., the Estate Office, Maresfield Park, near Uckfield; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

N.B.—The well-known NURSERY is TO BE LET on very advantageous terms. Full particulars of the Auctioneers.

Penge, S.E.

The Penge Nursery, within a short distance of Kent House and Penge Stations, L. C. & D. Railway.

CLEARANCE SALE of the whole of the NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on MONDAY, November 25, and following days, the whole of the well-grown GENERAL NURSERY STOCK.

Further particulars will appear.

Under a Distraint for Rent.

The Holly Nursery, Hundleby, ¼ mile from Spilsby Station, Lincolnshire.

EXTENSIVE SALE of very valuable NURSERY TREES and SHRUBS.

MR. R. MACKINDER will SELL by AUCTION, on TUESDAY NEXT, November 5, 1889, at 12 o'Clock, the above NURSERY STOCK, consisting of Shrubs and Trees. Catalogues ready.

Town Hall, Spilsby, October 29, 1889.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Thursday next, November 7.

CATTLEYA LABIATA, true autumn flowering variety with two flowers, several fine Plants of VANDA LOWII, in fine condition, and other ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY NEXT, Nov. 7. Sale to commence at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday Next, November 7.

10,000 Grand Bulbs of LILIUM AURATUM, L. SPECIOSUM RUBRUM, L. LONGIFLORUM, &c., just received from Japan, in extra fine condition.

MR. J. C. STEVENS will include the above in his SALE by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 7. Sale to commence at half-past 12 o'Clock.

On view morning of Sale, and Catalogue had.

Thursday Next, November 7.
VALUABLE IMPORTED and ESTABLISHED ORCHIDS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 7, at half-past 12 o'Clock precisely, valuable IMPORTED and ESTABLISHED ORCHIDS, from Messrs. Charlesworth, Shuttleworth & Co., Park Road, Clapham, and Heaton, Bradford, Yorks, consisting of the following choice varieties:—Maxillaria Sanderiana, Odontoglossum polyxanthum, O. Hallii, O. cirrhosum, Oncidium macranthum, and O. lameligerum, Epidendrum syringothyrsus, all in fine condition; all various ESTABLISHED ORCHIDS.

On view morning of Sale, and Catalogues had.

Thursday, November 14.
SPECIAL SALE OF ORCHIDS IN FLOWER AND BUD.

MR. J. C. STEVENS begs to announce that his next Special SALE of ORCHIDS in Flower and Bud, will take place at his Great Rooms, 38, King Street, Covent Garden, on THURSDAY, Nov. 14, and he will be glad if Gentlemen desirous of entering plants for this Sale, will please send Lists not later than Thursday next.

Springfield, Dulwich (near Herne Hill Station).

MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on THURSDAY, November 18, at half-past 12 o'Clock precisely, without the least reserve, the Collection of ESTABLISHED ORCHIDS and STOVE and GREENHOUSE PLANTS, formed by the late J. Gregon Crace, Esq.; also a fine lot of ORCHIDS in FLOWER and BUD.

On view the Saturday prior, from 10 to 4, and morning of Sale, and Catalogues had.

Nursery Stock.—West Wickham, Kent.
Under Bill of Sale, and by order of Trustee.

AUCTION SALE of about 40,000 well-grown FOREST and FRUIT TREES, CONIFER, AUCUBAS, specimen WELLINGTONIA, border and pot SHRUBS, about 10,000 Standard and Dwarf ROSES, &c.

MR. W. LEVENS will SELL the above, on THURSDAY, October 31, 1889, and two following days, at 11 for 12 o'Clock each day.

Catalogues on the Premises, and of the Auctioneer, Railway Bridge, Beckenham; and also at 6, Kirkdale, Sydenham, S.E.

N.B. West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

VERTEGANS, NIEMAND, AND CO.,
CHAD VALLEY AND ROYAL NURSERIES,
EDGBASTON, BIRMINGHAM.

R. H. VERTEGANS, sole proprietor of the above Nurseries (wishing to retire on account of domestic calamity), OFFERS these Valuable BUSINESSES for SALE by PRIVATE TREATY, on easy terms, as a going concern, with immediate possession, including Excellent DWELLING HOUSES, LEASE, GOODWILL, &c. The stock of Palms, Shrubs, Flowering and Herbaceous Plants is the finest in the Midlands.

For cards to view and further particulars, apply to R. H. VERTEGANS, Chad Valley Nurseries.

N.B.—R. H. V. informs his numerous customers that, notwithstanding his intention to retire, he will continue to bestow the same personal attention to all commands with which he may be favoured until a suitable purchaser has been found.

To Nurserymen, Florists, and Fruit Growers.

TO BE DISPOSED OF, a really first-class OLD ESTABLISHED CONNECTION in Buckinghamshire, supplying the neighbouring gentry and the local wholesale traders as well as the London markets. The freehold includes Dwelling-house, Peach, Camellia, Tomato, Cucumber, and other necessary Forcing Houses, with Vineries and well-matured nurseries, and first-class Growing Stock of every description. A moderate price for the freehold would be entertained. Satisfactory reason for disposal.

Full particulars from OSCAR BERRY AND CARR, Monument Yard, E.C.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, by Private Treaty, a first-class NURSERY, well stocked; 7 Hothouses, about 2 Acres of Land, and lock-up Shop in Market-place.

For particulars, apply to GRAHAM AND MADELEY, Valuers, Burton-on-Trent.

London, S.W., near Putney.

FOR SALE.—An excellent opportunity for acquiring succession to an old-established NURSERY BUSINESS, conducted by present owner, who is Freeholder, for last 22 years. The Property, about 1 Acre, is all enclosed, with good frontage and position, and contains an excellent Dwelling-house, Stabling, Coach-house, 9 well-heated Greenhouses, besides Pits, Frames, Sheds, &c. The whole Property is substantial, and in first-rate condition and working order.

The Purchase Money, some of which might remain, would include the Goodwill, and all Stock, Utensils, Fittings, &c.

Owner would remain, if desired, to introduce connection.

Apply to TANSLEY WITT, 40, Chancery Lane, W.C.

TO BE SOLD, the LEASE of a large NURSERY, situated in the best part of St. John's Wood, with or without Florist's Business, in main road. Good Jobbing Connection.—W. C., 18, Finchley Road, N.W.

NURSERYMEN and FLORISTS: large fashionable town. Handsome and prominent Conservatory, Gardens, &c. Moderate rental. Price for good stock and four large, well-built and heated houses, £800. Excellent opportunity for practical man desirous of obtaining a high-class business.

Apply personally (or stamp), B. POMFRET, Business Agent, High Street, Tunbridge Wells.

TO LET, a Small, Compact Nursery. Seven Houses, well heated. Low Rent. Stock, £85, or offer; particulars by letter to
A. B., 161, High Road, Lee, London, S.E.

HAMPTON-ON-THAMES.—Nearly 6 acres of ORCHARD LAND, full of choice Fruit Trees, only five minutes from Station, and well adapted for Fruit Growers, Florists, &c. Immediate possession can be had, and a large portion may remain on Mortgage.

Apply to Messrs. KENT AND SONS, Solicitors; or Mr. J. EMBLETON, Suffolk House, Hampton.

To Market Gardeners,

TO LET, a few acres of MARKET GARDEN, well stocked with young Fruit Trees, &c., and in good condition, near Bournemouth, Hants, with good Dwelling House, Gardeners' House, Large Vinery, Tomato, Cucumber, and Mushroom House, and Stable if required.

Apply to Mr. MUNDELL, 38, Holdenhurst Road, Bournemouth, Hants.

Fifty Nurseries, Market Gardens, Florist and Seed
BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at
67 and 68, Cheapside, London, E.C.

Landscape Gardening.

OUR THOMAS H. MAWSON advises on all classes of Work under the above heading; also Rock Building, General Estate Improvements, Planting, &c.

See *Gardeners' Chronicle*, No. 146, p. 412.

Address, MAWSON BROTHERS, Nurserymen, Windermere.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

EVERGREEN HEDGES.—Fine bushes of LINGUSTRUM OVALIFOLIUM and THUIA LOBBII, from 3 feet to 6 feet. Plant now. Price LIST free.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

POETICUS NARCISSUS.—Having an enormous quantity (100,000), will sell at 4*s.* 6*d.* per 1000 at Spalding Station. Not rubbish, but good sound bulbs, larger size, 5*s.* 6*d.*—D'ALCORN, Spalding.

SEAKALE for FORCING, superior selected Crowns, 80*s.* per 1000; under 500, 9*s.* per 100. Orders to be accompanied by Cheque or Post-office Order.—ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, S.W.

Extra-sized Peach Trees for Houses.

W. ICETON has still a few dozen of the above to offer, fibrous-rooted, and well balanced, from 8 to 9 feet high, and 9 to 15 feet through—Royal George, Sea Eagle, Hale's Early.

Also an excellent variety of PALMS of all sizes.
Putney Park Lane, Roehampton, S.W.

12 REALLY GOOD AZALEAS for SALE, splendid Plants for Conservatory; well grown and healthy; will bloom freely in spring.

To be sold for want of room.

Apply to Mr. J. WHITEHEAD, Guildhall Street, Thetford, Norfolk.

"Now is the Time to Plant Trees."

ROBERT NEAL begs to call the attention of Gentlemen, Local Boards, Builders, and others who intend planting this season, to his large and varied stock of Shrubs, Standard, Ornamental, and FOREST TREES. FRUIT TREES, ROSES, CLIMBING PLANTS, &c., which, being well transplanted, are in fine condition for removal, and having been grown in the vicinity of London, are especially adapted for town and street plantings. Special quotations for large quantities, delivery free within a radius of six miles of the nursery. Inspection of the Stock solicited. CATALOGUES free on application. Also to offer extra fine forcing SEAKALE and RHUBARB.

The Nurseries, Trinity Road, Wandsworth Common.

Special Cheap Offer.

ISAAC MATTHEWS AND SONS have to offer 200,000 very fine plants of RHODODENDRON for forcing, Cunningham's White, Jacksonii, Caucasicum pictum, in sizes varying from 1 to 3 feet, at very low prices.

PONTICUM RHODODENDRON, from 3 to 6 inches, and intermediate sizes up to 4 feet, about 800,000; Seedling Hybrids, in sizes from 4 to 6 inches to 3 feet, about 400,000. All fine, bushy, well-rooted stuff.

HOLLIES, Common LAURELS, Portugal LAURELS, English YEWS, CUPRESSUS RETINOSPORA, AZALEAS, and other sorts of Surplus Nursery Stock too numerous to mention, at very reduced prices. 800,000 strong 4-yr. and 5-yr. THORN QUICK.

For prices and particulars apply to the Nurseries, Milton and Wetley Moor, Stoke-on-Trent.

CATALOGUES free on application.

FERNS—FERNS.—Trade Offer.—Great Annual Sale of Surplus Stock cheap; 100,000 to select from, in 20 most saleable sorts; 10*s.* and 12*s.* per 100. Adiantums, Pteris, &c. Adiantum cuneatum and Pteris Mayii, 12*s.* per 100.

SMITH, The London Fern Nurseries, Loughboro' Road, Brixton.

VIRGO'S NEW FORGET-ME-NOT, "BLUE PERFECTION."—The queen of spring bedding plants. Now is the time to plant to produce a sensational display next spring. Plants, 9*d.* each; 6*s.* per doz.—J. H. VIRGO, Florist, Walton-in-Gordano, near Clevedon.

FOR SALE, two ARAUCARIAS, height 5 feet. Well-grown healthy plants. Too large for owner's houses. An EXCHANGE might be arranged.

To be seen by appointment at Colonel WILKINSON'S, Southampton Lodge, Highgate, N.

LEEDS PAXTON SOCIETY'S CHRYSANTHEMUM SHOW, will be held in the Town Hall, Leeds, NOV. 12 and 13. Thirty-six Cut Blooms, £9, £6, £3; Schedules on application to THOS. BONSALL, Sec.
Elmet Hall Gardens, Leeds.

CHELTENHAM.—Nineteenth Annual SHOW of CHRYSANTHEMUMS and FRUIT will be held in the Winter Garden, NOVEMBER 13 and 14. Liberal Prizes. Schedules on application to G. TOVEY, Waltham Villa, St. Mark's.

THE BATH CHRYSANTHEMUM SHOW.
NOVEMBER 13 and 14, 1889.
Entries close November 8. For Prize Schedules apply to 14, Milsom Street, Bath. BENJ. PEARSON, Sec.

WATFORD CHRYSANTHEMUM SOCIETY.
President: The EARL OF CLARENDON.

The FOURTH ANNUAL EXHIBITION of CHRYSANTHEMUMS, and other AUTUMN FLOWERS and FRUITS, will be held in the Agricultural Hall, Watford, on TUESDAY and WEDNESDAY, November 19 and 20, 1889. Entries close on Thursday, Nov. 14. For Schedules and Entry Forms, apply to CHAS. R. HUMBERT, Hon. Sec., Watford, Herts.

BIRMINGHAM CENTENARY CHRYSANTHEMUM EXHIBITION, WEDNESDAY and THURSDAY, November 20 and 21. Special Invitation to the great Growers of England to Compete for the Largest Prizes ever offered. The Exhibition will be opened on WEDNESDAY, November 20, by Sir THOMAS MARTINEAU KNIGHT, when Songs on the Chrysanthemum, specially composed for the occasion, will be sung by over 200 voices.

A Public Luncheon will be held in the Town Hall, on WEDNESDAY, at 2.30 prompt. Tickets 3*s.* each. Entries close November 13.

Schedules and all information can be had, post-free, on application to the Secretary, J. HUGHES,
Northwood Villas, Metchley Lane, Harborne, Birmingham.

PROVINCIAL SHOW of the NATIONAL CHRYSANTHEMUM SOCIETY.
In conjunction with the Exhibition of the
HULL and EAST RIDING CHRYSANTHEMUM SOCIETY,
Artillery Barracks, Hull,
THURSDAY and FRIDAY, November 21 and 22.

Over £200 in PRIZES, also Eight Silver Cups, value £56, including Three Challenge Cups, value £30.

Entries close November 14. Schedules on application to
W. HOLMES, Frampton Park Nurseries, Hackney, } Hon.
EDWARD HARLAND, Manor Street, Hull, } Secs.
JAMES DIXON, 2, County Buildings, Hull, }

INTERNATIONAL EXHIBITION OF
ELECTRICAL ENGINEERING,
GENERAL INVENTIONS and INDUSTRIES,
EDINBURGH, 1890.

Patron—Her Majesty the QUEEN.
President—The Marquis of LOTHIAN, K.T., Secretary of State for Scotland.

Prospectuses and Forms of Application for Space may be had at the Offices, 3, Queen Victoria Street, London, E.C.; 40, Frederick Street, Edinburgh; and 6, Waterloo Street, Glasgow.

GEORGE E. WATSON, C.A., Secretary. | S. LEE BAPTY, F.R.G.S., General Manager.

*** SECTION IX.—"Rural Industries," Classes 42 and 43, including HORTICULTURE and ARBORICULTURE.

LONDON COUNTY COUNCIL.—TENDERS are invited for the SUPPLY of TREES, SHRUBS, and PLANTS for Dulwich Park. Persons tendering will be required to declare in their Tender that they pay such rates of wages and observe such hours of labour as are generally accepted as fair in their trade. Persons desirous to submit Tenders may obtain Form of Tender, and other particulars, on personal application at the Office of the Architect of the Council, at Spring Gardens, during office hours, until Monday, the 18th day of November. The Tenders, which must be on the form supplied from this Office, and be addressed to "The Clerk of the Council," and endorsed "Tender for Trees, Shrubs, &c., Dulwich Park," are to be delivered at the Office before 5 o'Clock on the last-mentioned day, and no Tender will be received after that hour. Any Tender which is not fully filled up in every particular will be rejected.

The Council does not bind itself to accept the lowest or any Tender. H. DE LA HOOKE, Clerk of the Council.
Spring Gardens, S.W., October 30, 1889.

Borough of Halifax.

THE PARKS COMMITTEE of the HALIFAX CORPORATION are prepared to receive TENDERS for the supply of 250 Horse Chestnut Trees and 250 Lime Trees, 12 to 14 feet in height, to be delivered at Savile Park.

Tenders endorsed "Tender for Trees," to be sent to the undersigned, on or before November 8, 1889.

By order. KEIGHLEY WALTON, Town Clerk.

PLANTING SEASON.—FRUIT TREES, COB NUTS, FOREST TREES, and SHRUBS. Several thousand for sale, all well rooted, strong and healthy.—Apply, TODDINGTON ORCHARD CO., Winchcomb, Gloucestershire.

FOR SALE, several very fine large PALMS, Lapageria alba and rubrum superbum, Allamanda, Bougainville, Croton, and other fine Exhibition Plants, all in good show condition; also Six fine pans of CŒLOGYNE CRISTATA. LIST on application by return.
PRITCHARD AND SONS, Florists, Shrewsbury.

TRADE NOTICE.—In consequence of my going into Business on my own account, I have this day (October 26) terminated my engagement with Messrs. HARRISON & SONS of Leicester (whom I have represented for over 7 years through the South and West of England).

N.B. Shall be pleased to receive any Special Offer from the Trade.

ALEX. BLATCHFORD, Seed Merchant, 28, Fleet St., Coventr

ANTHONY WATERER invites an inspection from intending Planters to the following, well-grown:—
ABIES DOUGLASII, Colorado variety, 4 to 6 feet.
CEDRUS ATLANTICA, 4 to 6 feet.
,, ,, GLAUCA, 3 to 7 feet.
,, LEBANI (Cedar of Lebanon), 4 to 8 feet.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
,, ,, LUTEA, 4 to 6 feet.
JUNIPERUS CHINENSIS AUREA, 3 to 8 feet.
,, VIRGINIANA GLAUCA, 5 to 7 feet.
PICEA CONCOLOR, 2, 3, 4, 5, and 6 feet.
,, GRANDIS, 4 to 8 feet.
,, LASIOCARPA, 3, 4, 5, 6, to 8 feet.
,, MAGNIFICA, 3 to 5 feet.
,, PUNGENS GLAUCA, 1½ to 3 feet.
PINUS AUSTRIACA, 3, 4, 5, 6, to 7 feet.
RETINOSPORA PISIFERA AUREA, 3 to 6 feet.
,, PLUMOSA AUREA, 6 to 8 feet.
THUIOPSIS BOREALIS, 4 to 6 feet.
,, DOLABRATA, 3 to 7 feet.
THUIA LOBBII, 4, 5, 6, and 7 feet.
,, OCCIDENTALIS, 4 to 5 feet.
,, ,, LUTEA, 3 to 6 feet.
YEWS, Common, 3, 4, and 5 feet.
,, Golden, of all sizes, up to 10 feet.
We have a large quantity of Pyramids, Globes, and Standards, in point of variety and size unequalled.
,, Golden Seedlings, 3, 4, 5, 6, and 7 feet.
,, Irish, 5 to 10 feet.
,, ,, Golden, 3 to 6 feet.
AUCUBA JAPONICA, 2½ to 4 feet.
BAMBUSA METAKE, fine Clumps, 4 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, up to 8 feet.
HOLLIES, Green, 4, 5, 6, 8, up to 10 feet.
,, ALTACLARENSE.
,, HODGINS.
,, LAURIFOLIA.
,, MYRTIFOLIA.
,, SCOTTICA.
} 3, 4, 5, up to 10 feet.
,, Yellow-berried, and other sorts.
,, Variegated, of sorts, 3, 4, 5, up to 10 feet.
,, Golden Queen, 4, 5, 6, 7, up to 10 feet.
,, Silver Queen, 4 to 10 feet.
,, Weeping Perrys, on straight stems, with heads of 10 to 15 years' growth.
,, New Golden Weeping, a large quantity of beautiful plants.
Knap Hill Nursery, Woking, Surrey.

BARR'S NEW DAFFODIL "MRS. GEORGE CAMMELL," The Great Spanish Beauty. Amongst Daffodils this is the most distinct in character, and the most refined in beauty; perfectly hardy. 21s. per dozen, 2s. each; extra large bulbs, 30s. per dozen, 3s. each.
Barr's General Bulb Catalogue free on application.
Barr's Daffodil and Plant Catalogue free on application.
Barr's Rare Species of Crocus and Meadow Saffron List on application.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

J. E. DIXON'S "PRESIDENT CARNOT" BRUSSELS SPROUTS.
J. E. D. will be able to supply this extraordinary fine strain at 1s. per packet, for season 1890. The following testimonial (one of many similar) has been received from—
Mr. GEORGE SUMMERS, *Gardener to the* Earl of Scarbrough:—
"DEAR SIR,—I have grown your President Carnot Brussels Sprouts by the side of several other well-known varieties, and have come to the conclusion that it is the hardiest and best variety grown."
London Wholesale Agents:—HURST AND SON, 152, Houndsditch, E.; COOPER, TABER AND CO. (Limited), 90, Southwark Street, Borough, S.E.
JOHN ETHERINGTON DIXON (second son of the late Edmund Philip Dixon, Seed Merchant, Hull), Seedsman, 21 and 23, Lord Street, Gainsborough.

LILIES and ORCHIDS.—An immense stock of recently imported Plants, compels a sale of the Established Plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains; see public journals for high prices recently obtained. The special offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and trade.
My first consignments of LILIUM AURATUM have arrived, prices 4d., 6d., 9d., 1s., and 1s. 6d. each; per 100, 30s., 35s., 45s., 55s., and 70s. Liberal allowance to the Trade.
Apply for CATALOGUE to
W. GORDON, The Nurseries, Amyand Park Road, Twickenham.

100,000 HARDY HEATHS.
A Collection of 100 HEATHS, in 10 varieties, price 16s.
,, ,, 20 ,, ,, 18s.
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Special price per thousand on application. When less than 50 plants are ordered, they will be charged at the rate of 3s. per dozen. CATALOGUES Free.
JAMES SMITH AND SONS, Darley Dale Nurseries, near Matlock.

Bulbs.
E. H. KRELAGE AND SON, The King's NURSERYMEN, SEEDSMEN, and FLORISTS, HAARLEM (Holland), have published their General CATALOGUES of Dutch and other Bulbs, which will be sent post-free on prepaid application to their address direct. These Catalogues are No. 410, Dutch Flower Roots; 430, Dutch Flower Roots (extract and supplement); No. 405, Miscellaneous Bulbous and Tuberous-rooted Plants; 435, Supplement to 405, price, alterations, and novelties.

Camellias, Azaleas, Rhododendrons, Palms, Orchids, &c. Plants grown specially for English use.
C. VUYLSTEKE, NURSERYMAN, Loochristy, Ghent, Belgium.
Wholesale CATALOGUE now ready, and may be had, free on application to
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TOWN CLOSE NURSERIES,
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OFFER A FINE ASSORTMENT OF CHOICE

ROSES	HYACINTHS
CLEMATISES	TULIPS
EVERGREEN SHRUBS	NARCISSI
FRUIT TREES	LILIES
STRAWBERRY PLANTS	CROCUSES
RHUBARB, SEAKALE, and other Plants, &c.	IRISES, GLADIOLI, and other Bulbs, &c.

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Post-free on application.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.
A Large and Select Stock is now offered for Sale.
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The Descriptive Catalogue of Roses post-free.
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The Nurseries, Sawbridgeworth, Herts.

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TO THE TRADE.
We shall be pleased to make Special Prices for
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Paris International Exhibition, 1889.
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HARDILY-GROWN
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150 of the finest good old varieties.
36 Chinese varieties, introduced direct from China.
50 New and very rare sorts.
8 Japanese varieties, introduced direct from Japan.
3 Japanese vars., sent out for the first time this present season.
Disposable in plants, 1, 2, and 3 years, strong plants, 4 to 6 yrs.
Specimen plants for Show, from 6 to 15 years old.
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250 varieties of the finest good old sorts.
27 new and rare varieties.
22 very new and very rare sorts.
36 varieties of officinalis and paradonales sorts.
Best time to send Pæonies is September or October, but may be planted until March.
Special collection for Amateurs. Special descriptive Catalogue and prices, printed in English, and sent on demand.
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Finest named HYBRIDS, 18 inches, 18s. per doz.; do. do., 21 inches, 24s. per doz.
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IRISH IVIES, from ground, 3 to 4 feet, 25s. and 30s. per 100.
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Packing free for cash with order, or delivered within 10 miles.
Special Culture of Trees, Shrubs, and Climbers, suitable for Town Planting. Special quotations for Parks, Squares, &c.
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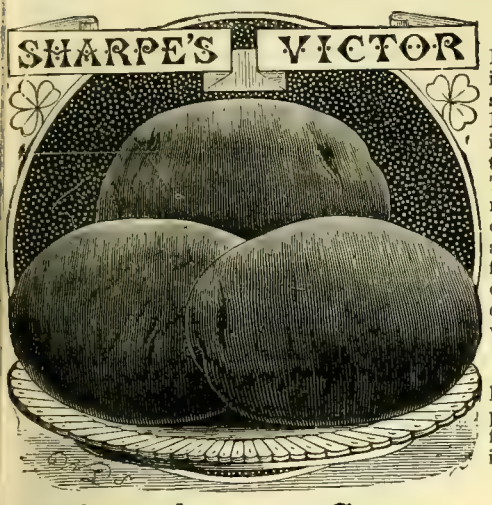
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Single plants supplied if required at the dozen price.

Coniferæ.
ABIES DOUGLASII, 5 to 6 ft., 18s.; 6 to 7 ft., 24s. per dozen.
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AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15s.; 5 to 6 feet, 18s; 6 to 7 feet, 24s. per dozen.
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PINUS AUSTRIACA, 3 to 4 feet, 20s.; 4 to 5 feet, 28s. per doz.
,, LARICIO, 4 to 5 feet, 28s.; 5 to 6 feet, 36s. per dozen.
,, SYLVESTRIS (Scotch Fir.), 4 to 5 feet, 20s.; 5 to 6 feet, 25s. per dozen. From nursery rows, 2 to 3 feet, 35s.; 3 to 3½ feet, 50s. per 1000.
,, INSIGNIS, 5 to 7 feet, 30s. per dozen.
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Large Evergreens.
LAURELS, Common, colchicum, caucasicum, and rotundifolium, 3 to 4 feet, 12s.; 4 to 5 feet, 18s.; 5 to 6 feet, 24s. per dozen.
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GORSE, double, fine, in pots, 8s. per dozen, 50s. per 100.
DECIDUOUS FLOWERING SHRUBS, consisting of Althæa frutex, Deutzias, Forsythias, Guelder Rose, Rhus, Ribes, Sambucus, Spiræas, Syringas, &c., at 4s. per dozen, 22s. 6d. per 100.
WEIGELAS, a fine collection, 6s. per dozen, 40s. per 100.
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Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top it is especially suitable for frame cultivation. Its precocity is such that it can be had fit for the table in eight weeks or less from the time of planting, and there is no difficulty in securing new Potatos for the Table every day in the year. Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest cropper of any variety adapted for Frame work, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and the quality of the flesh are superior to nearly every other variety at present in use.

Several seasons' trials have fully confirmed all that has been said in favour of the Victor Potato. It is proved to be the earliest, most prolific, and best flavoured of all the early Potatos; and for Pot Culture is unrivalled.

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"We have much pleasure in informing you that the three packages of Chrysanthemums reached us in excellent condition."

The Mayor of Wolverhampton, *Town Hall, Wolverhampton, November* 20, 1888.

"The Chrysanthemum Cuttings supplied last year have given very great satisfaction. An early execution of enclosed order will oblige."

Mr. G. Lewis, *Comprigney, Truro, November* 15, 1888.

"I am pleased to tell you I have done well indeed at Truro Chrysanthemum Show held last week. I took five first prizes in specimen plants with cuttings I had from you last season, second and third for cut bloom."

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"I received the Chrysanthemums, and am duty bound to say the packing was perfect. My friend Mr. Johnstone is sending you an order by this post. I have beaten all comers for the last three years, and am very anxious to do so again with your plants at our next show. Of course, it will seem strange to you to have a Chrysanthemum Show on April 18."

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STRAWBERRIES, WATERLOO, the new late Strawberry, very strong, well-rooted Plants in pots, 14*s.* per 100.—PARROTT BROS., Normandy, Guildford.

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PEARS, Hardy, and all sorts, for **Fruit Trees,** in all forms usually grown.

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Offer of good quality, and will esteem favour of Orders:—

APPLES.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Standards. **CHERRIES.**—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards. **PEARS.**—Dwarf Maidens, Dwarf Trained, Pyramids, Standards.

PLUMS.—Dwarf Maidens, Dwarf Trained, 2-yr. Untrimmed, Pyramids, Standards. **DAMSONS FARLEIGH PROLIFIC.**—Dwarf Maidens, Pyramids, Standards. **PEACHES and NECTARINES.**—Standards, Standard Trained.

Quantity Large.—Quality Good.—Prices Moderate.

Inspection Invited.

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CATALOGUES Gratis.

LANGPORT, SOMERSET.

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GREAT HARDY NURSERY,

CHESHUNT, N.,

Invite Planters to Inspect and Select from their Stocks of

PAUL & SON'S CHESHUNT ROSES.

STANDARDS—demand large, early orders necessary.
DWARFS—virtually all on the accepted stock, the Briar.
POT ROSES—the finest lot they ever held, therefore the finest in the world.

ROSE SPECIES and SINGLE ROSES—a specialty of the Firm.

PAUL & SON'S FINISHED FRUIT TREES.

STANDARDS, more especially APPLES, the very finest in the Trade, from £12 per 100 downwards.
PYRAMIDS and all FORMED TREES, vigorous, and yet of best shapes.
All SMALL FRUITS to ALPINE STRAWBERRIES carefully tended.
Large Planters should see the Stock.

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The variety of them is wonderful; by careful selection the smallest garden may be made a varied picture.
From 18*s.* per dozen.

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of every description are moved and do well, notably Hollies, of which there are 8 acres at the Epping Forest Nursery, from 2 to 12 feet, 1*s.* to 5 guineas each.

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The free-setting RHODODENDRONS and AZALEA MOLLIS specialty at the High Beech Nurseries.

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The most varied collection in England. Special Selections of ROCK GARDEN SHRUBS, and for Villa Gardens.
ARAUCARIAS in thousands, green and beautiful.

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For Borders, Rockwork, Cut Flower producing.
An acre of ROCK PLANTS at the Broxbourne Nurseries.

ESTABLISHED 1807. Eighty-two years' continuous attention and application has made these Hardy Nurseries one of the most complete in Europe. Planters should see for themselves.
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THE OLD NURSERIES, **CHESHUNT.**
One Mile from Cheshunt Station, G.E.R.

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No stakes required.
PAUL ENGLEHEART, crimson Clove.
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1*s.* 3*d.* each, 12*s.* per dozen.
Strong layers of these fine varieties, now ready.
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AZALEA INDICA.—4000 selected, budded, trade plants, 8*d.*, 1*s.*, 1*s.* 6*d.*, and 2*s.* Now ready.
6000 AZALEA MOLLIS, dwarf budded plants, 30*s.* and 40*s.* per 100.
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Special Offer to the Trade.

GOOSEBERRIES, Whitesmith, Crown Bob, Warrington Red, and many other leading sorts, at 12*s.* 6*d.* per 100, £5 per 1000; sample dozen, 2*s.* 6*d.* Also DWARF H. P. ROSES, from our well-known collection, at 21*s.* per 100, £10 per 1000; sample dozen, 3*s.*
GLOIRE DE DIJON, Cheshunt Hybrid, five to six feet shoots, 40*s.* per 100, 6*s.* per dozen, for cash with order.
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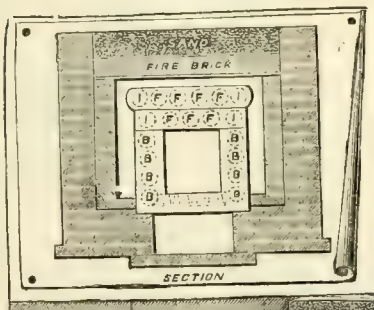
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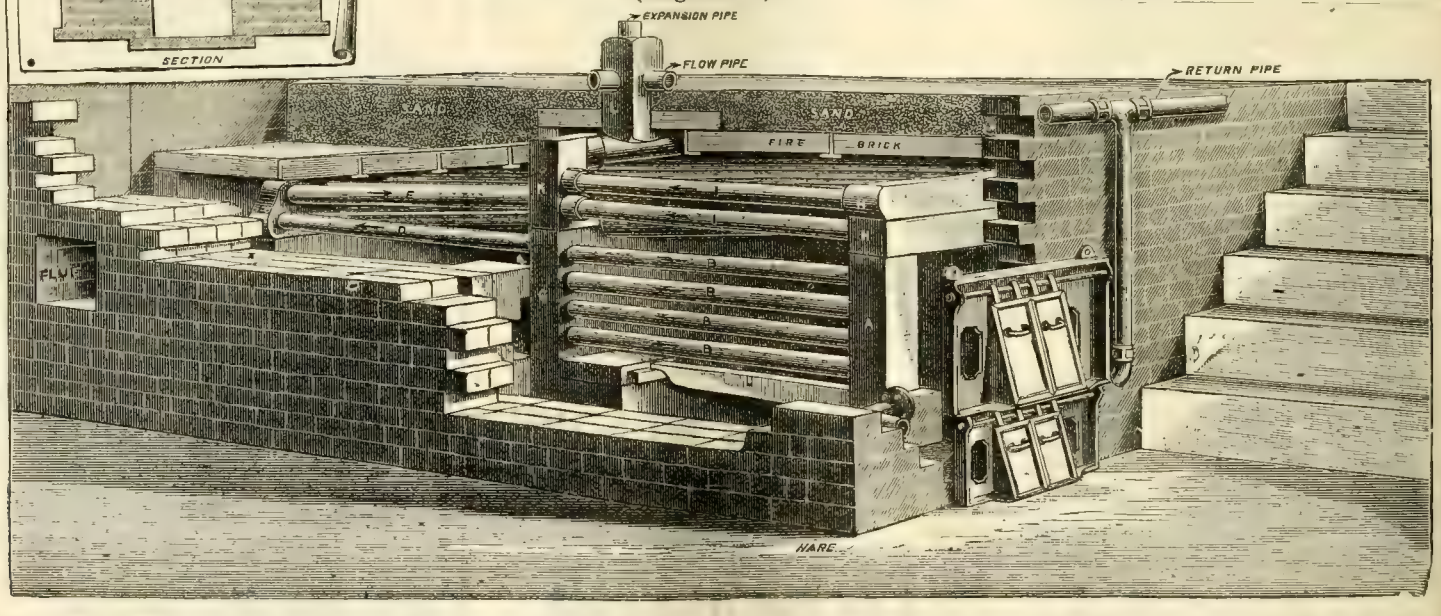
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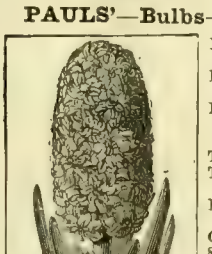
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THE

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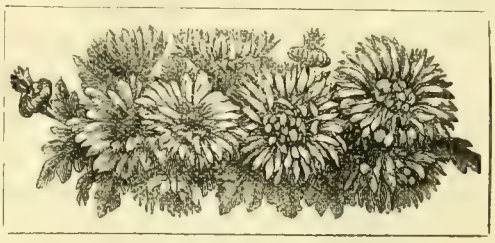
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 2, 1889.

GARDENING AT THE PARIS EXHIBITION.

THE great show at Paris, which has attracted the attention of the whole civilised world, and drawn heavy contingents of foreigners to the French shores, has included amongst its visitors numbers of horticulturists, nurserymen, gardeners of all degrees, and others interested in our own country in the all-important and now very much awakened business of fruit, vegetable and flower cultivation. The lessons to be learnt are almost as varied as the learners, and may be calculated to have a great influence on the future.

Of horticulture at this international display, notes have already appeared in these columns, and it is not now intended either to criticise or supplement them, but rather to dwell on the large and honourable place assigned to horticulture in this, the greatest gathering that has yet been held of the arts, sciences, and industries of the nations. No zealous horticulturist can enter by any of the many gateways of this monster exhibition—or, rather, series of exhibitions—without experiencing a feeling of pride at the many places of honour accorded to his profession—the mother of many of the sciences and the oldest of all the arts. Nor is this all or most of what the horticulturist may well be proud, for not only does horticulture itself make a brave display, but it runs through and links together the various separate expositions, and, as it were, moulds them into one great whole of wondrous variety and beauty. Sculpture and painting, machinery and manufactures, industries and arts are supported at all points, and fringed in all directions by horticultural objects or productions. Horticultural utility and beauty seem to be running a race for the mastery of the wide area over which the exposition extends. And yet, rightly understood, there is really no rivalry between these two branches of our art. In fact, the division itself is arbitrary, and rests on no solid bases of fact or of reason. There was more logic—mayhap taste—in the old-fashioned

farmer who preferred the Cauliflower to all other flowers, than has generally been allowed. Now that it has become so white and large, it is an object of beauty, resting on its cushion of green leaves.

And surely there is beauty in our densely curled Parsleys, Kales, Endives, and in the rich deep colour of our Beets; and as to fruits, the bloom and colour of our Grapes, Peaches, and Plums, the form and colouring of our Apples and Pears, the brilliance and delicacy of our Cherries—run even our Roses hard in beauty; and win the prize by many lengths or heights over not a few flowers.

Be all this as it may, no branch of horticulture is overlooked in this great exposition of the arts and industries of the nations. Sculpture is flanked with horticultural accessories of all sorts, and vegetables and fruits of all sizes and many varieties, as well as with flower shows in tents and in the open air. The painter's art is supported with stately Palms, verdant grass plots, standard Magnolias, masses of Rhododendrons, and brilliant flower beds; and but few exhibits of any nation are held to be complete unless its horticultural taste and productions are also represented. Thus the exposition becomes, to a very considerable extent, a school of horticulture for the civilised world.

As was to be expected, France takes the lead; but Spain, Portugal, Norway, Italy, Austria, Belgium, Switzerland, and Sweden have entered the lists, and not a few of these furnish tolerably complete gardens, as well as *facsimiles* of the villas, mansions, and palaces of their respective countries. It is this cosmopolitan variety, and the breath, and the distinctiveness of the exhibition, which gives the display its special value as an encyclopædic object-lesson, as well as its special value to horticulturists. It is no new thing to have the horticultural and other products of many nations gathered together in one or several great buildings constructed to receive them. The novelty in this exhibition is, that the buildings themselves, and their floricultural embellishment, more than ever before, represent the architecture and the landscape gardening of the different countries. Could these buildings and grounds be but preserved, and the latter extended, the site of the present exhibition might well become the permanent school of horticulture for Europe—or even for all the more temperate climes of the world. By the erection of a few large hothouses, even the limitation imposed by climate might be removed.

At present most visitors, and those devoted to horticulture merely, have so much to see and so little time in which to see it, that much of the horticultural part is apt to be missed. It would take a month to do justice to its many-sided suggestiveness, or to fully master its myriad object-lessons. These, as already stated, are to be found on all sides of the grounds. Perhaps there never before was gathered together such a varied exhibit of the different methods of raising and training fruit trees; Apples, Pears, Plums, Peaches, Figs, Grape Vines, Cherries, of all shapes and sizes abound in various directions. Obviously the French and the other continental fruit growers have faith in cordons and other small methods of training, although examples of standard and dwarf trees and bushes may be seen.

Their training is wonderfully methodical and exact, each style of it being exhibited almost without imperfection. The fruit trees generally, as well as the Roses and other trees and shrubs so largely employed in furnishing various portions of the grounds, in forming the landscapes of different styles, are also remarkably healthy and free from disease and insects. It showed great skill in the planters that such picturesque and pleasing results have been obtained through the use of such young and formal material. Most of the exhibitors succeeded more or less perfectly in combining a good show of trade stuff with a rich and satisfactory addition to the general adornment and furnishing of the grounds. Of most landscapes it is truly said that they develop into the beautiful. Of those forming no small portion of the base lines of this great exhibition, it may be said that they were moulded into beauty with masses of material which might have been regarded as almost too young and raw for the purpose. That so much was done, and so well done, under such circumstances, speaks a great deal for the artistic feeling and capability of French nurserymen and florists—on those who controlled the designing and furnishing of the plots they so patriotically filled in the grounds of the exhibition.

As to special features, and the merits of the fruit, flower, and vegetable shows, a great deal might be written. But criticisms and comparisons, while being as easy as they are odious, are seldom either instructive or satisfactory. In the flower show, the groups of a specific character were of larger size than these generally found in our displays; Carnations, Begonias, Roses, Palms, Ferns, Dracænas, and Yuccas were shown in masses rather than in numbers. This gratified and even rested the eyes of visitors, the observer not being hurried away from one object to another without finding the time to be fully satisfied with either.

The same principle seems to hold good in regard to the fruit exhibition, which consisted chiefly of Apples, Pears, and Grapes. One Society showed nearly a thousand dishes of the first two fruits, and one exhibitor had about a hundred dishes of Grapes in single dishes. Rows of heaped-up baskets of fine Apples and Pears, in two dozen lots, also gave a touch of enhanced richness and profusion to the display of fruit.

Unless in the matter of colour and size in the Pears and some of the Apples, and the number of varieties of Grapes shown, there was nothing special to note in the great show of fruit at the Exhibition. Vines in pots, with fruit on them, were not shown by themselves, but used as a wall of verdure, to back up the collection of Grapes in front of them. Employed thus, the pot Vines imparted a touch of beauty to the other fruits, and constituted charming breaks to the apparently interminable lines of Apples and Pears, in single dishes or upheaped basketfulls.

The vegetables were shown on low earthen banks, which faced two ways from the centre, and brought them all well within the range of vision, the centre being furnished with Tomatos in pots, flanked with enormous Gourds, Capsicums, Egg-plants, Cauliflowers, Cabbages, Endive, Chicory Witloef, Carrots, Celery, Celeriac, Salsafy, Scorzonera, and Beet, the whole being fringed with Potatos.

The greatest novelties were the planted out Cauliflowers, Greens, Cabbages, salading, several sections of Mushrooms-beds in full bearing, and about a dozen samples of French Mushroom spawn among the exhibits. As a consequence of this mode of showing vegetables and salading, the samples appeared fresh and flourishing, and fit for use, as they will probably be to the end.

Fresh from great shows of vegetables in our own country, we may add, as the result of comparison, that the home-grower has nothing to fear, excepting, perhaps, in Pears and Mushrooms. As to the latter, without doubt, we have much to learn from our French neighbours in the art of full and regular production. We have seen as fine Mushroom-beds here as in France, but where we fail is in continuity and certainty of supply; while as to consumption, those insipid pancakes so often eaten as Mushrooms in England seem wholly unknown across the Channel. Lastly it may be added that the exhibition will be finally closed on the 6th inst.

New or Noteworthy Plants.

NEPENTHES BURKEII.*

At one of the recent meetings of the Royal Horticultural Society, Messrs. Veitch exhibited a very distinct-looking, wingless Nepenthes, under the above name, and one which we have not been able to match in the herbarium at Kew, or in other available sources of information. Although the material is at present not so complete as would be desirable, we adopt Messrs. Veitch's name, and with them consider the plant to be new. It was introduced from Borneo by the collector whose name it bears, and is remarkable for its cylindric pitchers narrowed in the middle, and in colour green, spotted with red. The pitcher, which measures about 8 inches in length, but which may probably become much larger, is wholly destitute of wings [*quære*, always?], and is bordered at the top by a deep red rim, dividing at the margin into irregular sharp-pointed lobes, and marked by numerous fine parallel ribs. The lid is ovate-obtuse, with a short simple spur. The interior of the pitcher—at least, at the upper part—is violet, overlain with a glaucous bloom. It is a species to be looked after by the connoisseur. The absence of the wing is the more remarkable, as the pitchers appear fully developed.

Orchid Notes and Gleanings.

CATTLEYA HARDYANA.

I have now before me a bloom of this showy Cattleya, sent from the original plant in the possession of G. Hardy, Esq., Pickering Lodge, Timperley. When this plant first flowered, now some five or six years ago, it was considered to be the finest Cattleya ever introduced, and the fortunate owner was then considered to have a probably unique gem. During the last season or two it has, however, appeared in several collections, and in one or two instances some variation from the original form has shown itself. The bloom I now have measures 8 inches across the sepals and petals, and is of a deep rosy-purple. The sepals are undulated and recurved, and stand rather forward from the other portions of the flower; the lip, however, is the most showy portion, and, as has been stated, reminds one of C. gigas and C. Dowiana; this measures nearly 3 inches across the lower part, and is a rich magenta-purple, which colour runs up in bright lines into the throat. On either side of this veining are patches of an orange-yellow, which is again margined with the deep colour of the lower portion.

As this splendid form has appeared among the imported C. gigas section, it is just possible it may even now be present in other collections besides those who have fortunately flowered it; it is, therefore, desirable that those who have unflowered imported plants of C. gigas, Sanderiana, &c., should take every care in their culture and treatment, for this may even yet appear in most unexpected localities. *Vanda.*

Aganisia cyanea.

This is the old Warrea cyanea, Lindl. (*Bot. Reg.*, 1844, *Misc.*, p. 2; *Id.*, 1845, t. 28), a plant seldom

* *Nepenthes Burkeii*, Mast. ex, Hort. Veitch.—Caule angulato glabro; foliis approximatis 10 pollicaribus, latitudine 1½ poll. glabris, oblongis obtusis, basi angustatis amplexicaulibus; ascidiis 7—8 poll. long., 1½ poll. lat. cylindratis basi ventricosis, medio angustatis viridibus, rubro maculatis, omnino exalatis [au semper?], peristomio angusto rubro arcte costato, costis tenuibus, margine irregulariter lobato, lobis deltoideo-acutis, operculo viridi, oblongo obtuso calcarato. *Hort. Veitch. M. T. M.*



Fig. 69.—Nepenthes burkeii: pitchers dull green spotted with red-purple. (see p. 492.)

seen in gardens, but one whose deep blue lip and white segments are very attractive. Unfortunately belongs to a group which has proved very perplexing to our best growers, for the species often take French leave, and are seldom seen in a state of luxuriance. A specimen just received from Sir Trevor Lawrence for determination, either belongs to the same or to a very closely allied species, and I do not think the question can be settled from the material at hand. The differences are very slight, and may be stated as follows:—The segments are not white, but light blue, especially towards the apex, and the little apiculus of the lip is not nearly so pronounced. In other respects, however, I do not note any important differences, and as the keels and shape of the lip are almost identical, I think both must belong to the same species. This matter, however, must be left until further material comes to hand. The plant must not be confused with Aganisia cyanea, Rchb. f. (in *Nov. Act. Acad. Nat. Cur.* xxxv., pt. 2, p. 13, t. 4), which is Acacallis cyanea, Lindl., I agree with both Lindley and Bentham in considering Acacallis a perfectly distinct genus.

A figure of this may be found in *Lindenia*, ii., p. 31, t. 110, where, however, the segments are less blue than in specimens I have seen. There is some confusion about these blue Aganisias, for if you turn to the *Orchid Album*, vol. viii., t. 374, you will find an excellent representation of the plant under the name Aganisia cœrulea, Rchb. f. Now, Aganisia cœrulea, Rchb. f., is a plant which flowered in the Hamburgh Botanic Garden, and which was described in these columns, August 19, 1876, p. 226, and on reading the description it becomes evident that a very different plant was intended. This latter I have never seen, and if any one possesses a plant it would be highly appreciated if they would kindly forward flowers of it to Kew. *R. A. Rolfe.*

Cattleya Dowiana aurea with Rosy Segments.

Perhaps the most remarkable variation of the above handsome Orchid I have seen, is one just forwarded to Kew by E. G. Wrigley, Esq., of Howick House, near Preston, Lancashire. The sepals and petals, instead of being light yellow in colour, are both so strongly marked with rosy-pink as to give the whole flower a quite different appearance. The petals are beautifully veined with yellow in precisely the same manner as the lip, though far less brilliant in colour. The sepals are of nearly the same shade, but the markings are different in character, being partly suffused and partly mottled or tesselated over the surface in a tolerably regular manner. The lip and column are quite normal in character. What may be the cause of such a remarkable deviation from the normal condition is difficult to say, though my own opinion is, that it is an approach to a pelorioid condition manifesting itself in the arrangement of the colours, but not in the shape of the segments. There is this difficulty, that the colour also extends to the sepals, but as the markings of the petals are precisely similar in character to those of the lip, I do not see any better explanation of the phenomena. A Cattleya Dowiana with three lips would be a gorgeous thing, and Mr. Wrigley will assuredly keep his eye on this remarkable plant to see what its future behaviour will be. It is a decided novelty. *R. A. Rolfe.*

[A very similar, but not quite so beautiful a form, lately appeared in the collection of A. Heine, Esq., of Birchfield, Fallowfield, Manchester, among some plants of C. Dowiana var. chrysotoxa, which that gentleman obtained from Messrs. Sander & Co. C. Hardyana also appeared in the same batch. Mr. Heine's variety of C. Dowiana aurea, of which Mr. Weathers sends a flower and description for our inspection, has cream-coloured sepals mottled with rose, petals rosy-purple, with a cream-coloured blotch in the centre, while the lip is like that of C. Dowiana aurea. Ed.]

Dendrobium bracteosum, *Rchb. f.*

A very pretty little Dendrobium was described in *Lindenia* (vol. ii., p. 55, t. 74), under this name from New Guinea, and of which Sir Trevor Lawrence now kindly sends a good specimen to Kew. Its bright rosy segments with orange lip are very pretty, the flowers are congested in a remarkable little head, and the rosy bracts are very remarkable, and quite unlike those of any other Dendrobium I can call to mind.

*

Unfortunately, I also described the plant at a later date as Dendrobium chrysolabrum (see June 22 last, p. 770), but of course the earlier name must be retained.

I may add, that I spent a considerable time in hunting up the New Guinea Dendrobiums, but did not find anything like it, but I overlooked the particular reference above cited, and consequently described it under the new name. The fact is, new Orchids have been described in such a multitude of books and pamphlets, that it is a very difficult matter to hunt them all up, and until all are got together in one place the same thing will always be likely to recur. However, I have a work in hand which I hope to gradually remedy this unfortunate state of things, and enable us to lay hands quickly on all the species which have been hitherto described *R. A. Rolfe, Herbarium, Kew.*

WINTER SALADS.

For the supply of salads during the winter the gardeners' sheet-anchor is Endive, and yet the wonder is that it should be so much depended on, seeing that it is more tender than Lettuce, which will not only endure much more frost than the first-named, but Lettuces are preferable, as being crisper and sweeter than Endive. Some salad eaters, however, like the bitter taste when it is not intense. Whether the Endive has much or little of it, depends on the way it is treated, as the bitterness may in a great measure be got rid of or modified by putting the plants into gentle heat during the process of blanching. The most suitable place for carrying this out is in a Mushroom-house, but those who have not the convenience of such a structure may easily imitate the conditions and temperature by placing the Endive with its roots in moist soil, and packing the plants close together in a tub or box, when if covered closely over and stood in gentle heat the heads will be ready for use in a fortnight or less. To keep up a succession, all one has to do is to put in a fresh lot at intervals, according to the demand; as also with Lettuces, which are much improved in delicacy and tenderness by the same or similar treatment.

Endive, however, to be of use, and available when wanted, must be taken from the open and put under cover, for as remarked on above, it is quickly injured by frost, and when touched it soon decays and goes off. The curled is even more tender than the plain, the first-named of which is often blanched by laying boards on the plants along the rows, or pieces of tile or slate over the hearts, which should be done when the plants are dry, and it is necessary for them to be in this condition when they are tied and taken up to go under cover. For those intended to be kept long, a cold frame is the most suitable place, and in that they may be laid-in in rows pretty close, and have their roots well buried in the soil. The soil should be in a moist state, and no water given, and to prevent damping, it will be necessary to give plenty of air. To keep frost out during winter, mats or other covering must be used, and blanching may be effected by leaving the covering on a portion and keeping the plants from the light. Any that are likely to be required for an immediate, or not very distant, supply, may be placed in sheds that are either close or open, as in the latter case the plants can be protected by throwing dry, clean straw over them, and in these ways we have a lot, which help our supply well on into the winter, and when the stock is used up, we have that in frames to fall back upon.

Lettuces always do best in frames, and the most suitable for the season of the year immediately before us is the Bath Cos, which should now be nearly full grown, and ought to be carefully lifted, with good balls, that they may be transferred to the frames without feeling much check. Some of the Cabbage Lettuce are always very good for winter work, and most of them are exceedingly hardy, one of the best being All the Year Round, which hearts-in solid, and is tender and good.

Chicory, or Whitloef, is a great help in affording a supply of winter salading, as all one has to do is to put a few at a time into a tub, box, or large garden pot, and fill in around them with moist soil by bringing it just up to the crowns, when, if placed in moist heat, and kept close and dark, the heads will soon be fit for cutting, and will look tempting and good in the salad bowl. It is well, however, not to have too many mixtures, but a slice or two of Beet is always an improvement, not only in appearance, but in eating with either Lettuce or Endive. Both these are often spoiled in the preparing and cutting up, and are frequently to be seen, when treated by unskilful hands, in a soft, bruised, wretched condition, quite unfit for any one's table. If salads of any description must be washed at all, it should be very carefully done, and the drying carried out in the same way, instead of the cut-up Lettuce or Endive being tossed or rubbed with cloths till it is battered and made limp at the start. Another thing that tells against the freshness and niceness of a salad is in putting the sauce on before the salad is required for use, for when that is done it soaks in and soddens the parts, and deprives the salad of that crispness and freshness which *connoisseurs* delight in. *J. S.*—[Will any of our correspondents give a list of new winter Lettuces—Cabbage and Cos—of which there are now many native and foreign varieties, and oblige us with notes of their experience of them in these islands? Ed.].

THE GARDEN IN NORTH-WEST YORKSHIRE.

In the first week of October, 1888, an unprecedentedly severe frost and fall of snow destroyed all tender summer plants, and brought the leaves off even the Ash and Sycamore whilst still green. This year our first frost, although far less in intensity, blackened the Dahlias on September 21, but it was not until the furious south-west gale of October 7 that their flowering was ended, at the same time as that of the pretty Helianthus cucumerifolius and the German Asters. We have since had a few slight frosts, but Dahlia Zimapani (Bidens atrosanguinea) is still in flower untouched—from seed originally brought by me from Pernambuco.

The storm of October 1, 1888, deprived us of the glory of autumnal foliage, which has this year been surpassing, and which proves that there are no trees in our gardens to compare for gorgeousness of colour with our native Oak, Beech, and Mountain Ash; the last, glowing with reddish-copper, the two former through every shade of gold and brown, have been much enhanced by contrast with the varied blues and dark greens of the different Conifers. In planting Oaks, it is impossible to foresee the variety of autumnal colour which characterise trees of the same parentage and apparent conditions of growth; in summer they may show no difference in their shades of green, but the variations of brown and gold in autumn are notable. Last year Eucryphia pinnatifolia flowered well in October; this year it has no bloom, although its growth was uninjured by frosts.

We have now six varieties of Clematis on the walls of the house, all in bloom, together with Lonicera sempervirens, and several Roses, such as the perennial Gloire de Dijon, General Jacqueminot, with others; and the Tropæolum speciosum climbing amongst them has strings of its lovely turquoise-blue berrries.

Symphyandra Hoffmanni began to bloom in August, and, unaffected by frost or gales, still has many of its ivory-white flowers, whilst all its relatives of the Campanula tribe are mere dry twigs. A pretty pink and white Oxalis, which I had from Jersey, is still in flower, and I have this day cut a bunch of the sweet-scented Lavandula dentata, whose fragrant spikes are surmounted by deep violet-coloured bracts.

Prunus Pissardi is more brilliantly-coloured than during the summer, and, with the golden foliage of Ptelea trifoliata, the red berries of Cotoneaster Simonsi, the vivid green of Bambusa metake, and the magnificent leaves of Gunnera scabra, we have backgrounds that show up effectively the following plants still in bloom: — Antirrhinums, triornithophorum, Asarina, and majus; Asters, many forms; Aubrietia Leichtlinii, Anemones, japonica, and Honorine Jobert; Centaurea cyanus; Clematis, various; Chrysanthemum segetum and coronarium; Cheiranthus Cheiri, Calendula officinalis, Delphinium species, Dahlia Zimpani, Dianthus deltoides, Helichrysum, Hydrangea paniculata, Jacobœa, Lobelia cardinalis, Linaria, Lunaria, Laurustinus, Mathiola cornuta, Montbretia, Malva moschata alba, Mignonette, Phlox Drummondi, Primula vulgaris, Pansies of various kinds, Pyrethrum uliginosum, Papaver cambricum, Roses various, Scabiosas, Symphyandra, Spiræa filipendula plena, Tritoma (Macowani, the most vivid and floriferous), Valeriana, Viola. *R. Milne-Redhead, Holden Clough, Bolton-by-Bowland, Clitheroe, Oct.* 26.

A HISTORY OF ENGLISH GARDENING.

(Continued from p. 293.)

The commonest orchard fruits of the fifteenth century, however, were Apples and Pears. The former fruit was generally sold by the quarter, which varied in price from 8*d.* to 4*s.* Choice varieties, such as Costards and Pippins, were sold by the hundred.* Crabs were grown, but not extensively; they were chiefly employed in the manufacture of cider and verjuice. Of Pears, several kinds were cultivated, but the Warden and Volemi varieties appear to have been the most esteemed. The orchards of this period were carefully laid out, and for a time appear to have almost usurped the place of gardens. The "mount," which had been one of the commonest features of the fourteenth century gardens, was now transferred to the orchard, and elaborately laid out. It was sometimes formed of wood or of stone, "curiously wrought within and without," or of earth covered with fruit and other trees. Mounts, we are told by an old writer, were thrown up in "divers corners" of the orchard, and were ascended by "stairs of precious workmanship." When constructed of wood, they were often elaborately painted in gaudy colours. If the orchard happened to be situated in a park, and herds of deer browsed even up to its walls, the mount became useful as a point from whence, as the old herbalist Lawson points out, "you myghte shoot a bucke." Probably the finest specimen of this kind of ornament was the celebrated "Mount," at Hampton Court. It was laid out with Quickset and other trees, and was surmounted by a small pavilion made of trellis-work.

Fruits and vegetables were also extensively cultivated by the clergy in their monastery gardens, in the fifteenth century, and several MSS. still extant show that they were by no means behind their lay brethren in raising choice varieties. They also paid considerable attention to the cultivation of flowers, and special gardens (called in the old MSS. *gardina sacristæ*†) were devoted to growing them for purposes of church decoration. There was one, for instance, adjoining the Lady Chapel, at Winchester, and the spot for a long time after the destruction of the Sacristy, went by the name of Paradise. And in his will, Henry VI. left particular directions concerning a garden for a church of Eton College "which is left for to sett in certain trees and flowers, behovable and convenient for the service of the same church.‡" A garden for the cultivation of sweet herbs and flowering plants for church decoration also existed at Wokey, in Somersetshire, and among the accounts of the Reeve of that place for 1486 are given the wages of gardeners for digging and cleaning the "chapel garden," and also the wages of labourers for digging and thinning "Crocus" for "the table of the Lord."§ The flowers cultivated in these "sacred gardens" were chiefly used for the decoration of the altar and of the altar candles. Around the latter wreaths of flowers were bound, and in the parochial accounts of S. Margaret's, Westminster, and other

* 100 Costards were sold in 1485 for 4*d.*; 100 Pippins for 5*d.* See Roger's *Agric. Prices.*

† See Wharton, *Anglia sacra*, p. 209.

‡ See Nichols', *Wills of the Kings and Queens of England.*

§ The gardeners were paid 2*d.* the day.

churches, are numerous entries which refer to this old mode of decoration.* Flowers were also used by the clergy for making their *corona sacerdotalis*—the sacred crown worn by the canons and clergy of cathedrals and churches. At high festivals and on other solemn occasions the priests walked from the monastery to the parish church in procession, crowned with Roses, Honeysuckle, and other flowers. Thus we read in a fifteenth century manuscript of Roger de Walden going to S. Paul's in solemn procession to be enthroned in his episcopal chair, with a crown of red Roses on his head.† Polydore Vergil (early sixteenth century) also refers to the same custom. "At the present time," he writes, "with the English as elsewhere, the priests on stated and solemn occasions appear at public services of the church with garlands on their heads, and especially the priests of S. Paul's at London, who, at the feast of S. Paul, in the month of June, are crowned for the celebration of all the sacred offices proper to the day."‡ Stowe also records a procession from S. Paul's, when "the Dean and Chapter, apparelled in copes and vestments, with garlands of Roses on their heads, issued out at the west door." It is, however, in fifteenth and early sixteenth century churchwardens' accounts that we have the clearest testimony of the prevalence of this old custom. In the accounts of S. Mary Hill for 1483-9, given in Nichols' *Extracts*, are the following entries:—

"Item, a doz. and a half rose garlands on S. Barnebe's day, viij*d*.
"Item, for two doz. di. and box garlands for priests and clerks, j*s*. x*d*.
"Item, Garlands on Corpus Christi day, x*d*.
"Item, for Rose garlands and Woodrose garlands on S. Barnebe's day, xj*d*."

Again, the Churchwardens' accounts of S. Mary Outwich for 1524-5 furnish the following interesting entries:—

"1524.—Item for Rose garlands on Corpus Christi day, vj*d*.
" Item for Birch at Midsommer, ij*d*.
" Item for Rose garlands on S. Martin's day, xv*d*.
" Item for Holly and Ivy at Christmas, ij*d*."
"1525.—Paid for flowers and Yew, ij*d*.
" Paid for Broome agaynst Easter, j*d*.
" Paid for Rose garlands on Corpus Christi day, vj*d*.
" Paid for Birch and Broome at Midsommer, iij*d*."§

How long the custom of wearing the *corona sacerdotalis* prevailed in England is not known, but it probably was discontinued at the time of the Reformation. *P. E. N.*

(To be continued.)

MEDICINAL PLANTS.

From our contemporary, the *Chemist and Druggist*, we gather the following facts referring to well-known drugs:—

Camphor, it seems, has been in greater demand on the Continent this summer than was ever known before, not only for the usual medicinal uses, but especially for the manufacture of the new smokeless gunpowder, which is now being made on a large scale for use in the German and other armies. This use of camphor as an ingredient in gunpowder is explained by the *Chemist and Druggist* as probably being based on the fact "that the 12 to 13 per cent. (by weight) of oxygen which is contained in camphor would combine with a considerable proportion of the carbon in it to form carbonic oxide, thus largely diminishing the excess of carbon, which in ordinary gunpowder forms smoke."

In connection with the cultivation of the Camphor Laurel, it is said to be progressing very successfully in the Java Botanical Gardens, and it is believed that the cultivation of the plant will be resorted to on a rather large scale throughout Java.

Cubebs (*Piper cubeba*).—The cultivation of this important plant is also said to have been taken up with great energy in Java, and the director of the Buitenzorg Botanic Garden states that there is a very large demand for seed from many quarters.

Cascara Sagrada.—Under this commercial name, the bark of Rhamnus Purshiana has attracted a considerable amount of attention for some years past. Between two and three months ago the new crop of bark began to be gathered on the Pacific Coast of the United States, and since then the price, which had reached almost a famine figure during the latter end of May, has declined to nearly one-sixth of its quotation at that period. Towards the close of May, 3*s*. to 3*s*. 3*d*. per pound was asked for genuine Sagrada bark in London and New York, and now any amount of good bark may be had at about 8*d*. per pound.

It is about twelve years since Cascara Sagrada became a recognised article of trade, and in 1879 it was first brought to the notice of the medical profession at the British Medical Association at Cork. At first it was looked upon as an American quack nostrum, but it made its way on its own merits, until at the present time it is estimated that the annual consumption of the bark reaches 350,000 lb., and it is said to be constantly gaining favour with the medical profession. The demand for the bark promises to become so great, that there is a fear lest the supply may fail. Professor C. S. Sargent, in his *Woods of the United States*, describes the Rhamnus Purshiana, which is known as Bearberry, Bearwood, or Shittim-wood, as being found in "Puget Sound, east along the mountain ranges of Northern Washington to the Bitter-root Mountains, Idako, and the shores of Flathead Lake, Montana; southward, through Western Washington, Oregon, and Northern California; west, to the Sierra Nevada Mountains." It is stated that the demand for the bark has caused the trees in the State of California to become very scarce already, so that supplies have to be procured from the less accessible districts in Oregon and Washington. The present demand must necessitate the peeling of about 25,000 to 30,000 trees every season, and the inconsiderate manner in which this work is accomplished by the American bark gatherers, renders it likely that a large proportion of the trees do not survive the operation. The principal part of the area whence the Cascara Sagrada is obtained is in those districts of the United States which are still in a more or less unsettled condition, and it is, therefore, perhaps impossible to prevent the reckless destruction and partial extermination of the trees.

(To be continued.)

MANRESA HOUSE, ROEHAMPTON.

This is the principal home of the Jesuits in the suburbs of London; and is, indeed, a collegiate establishment of some 150 students. The estate, covering some sixty acres, is prettily situated, and has a reposeful aspect, which seems to be peculiarly appropriate to an establishment of the kind, and there are certain points where good views may be obtained of the surrounding country, as, for instance, from one of the lawns, the White Lodge, Richmond Park, the residence of the Duke and Duchess of Teck; the beautiful nursery of Messrs. Veitch at Coombe Wood; and the famous "Star and Garter" Hotel on Richmond Hill.

The Manresa Vine.

Commencing now with a few details as to Manresa House, the Vine here claims our first attention. Amongst the famous Black Hamburgh Vines in this country, that at Manresa deserves to hold a foremost place, 3825 square feet of glass being requisite to cover it (2200 suffice for that at Hampton Court); whilst as to its training it has no superior even amongst other celebrated vines. The Manresa Vine was raised by the present gardener, Mr. W. Davis, twenty-seven years ago, merely for the purpose of obtaining leaves for garnishing, its destiny therefore was originally humble, but like men, some vines become great.

After having served its purpose in the matter of supplying leaves for seven years, a portion of the wall against which it grew was removed, and a vinery, 70 feet in length, and 11 feet wide, was erected over it. The house was finished towards the end of 1870, and during the following season the Vine fruited well. One of its rods was allowed to remain outside, protected by the coping of the wall; another was disbudded and wrapped in hay-bands for a distance of 21 feet, and was carried across the walk to a neighbouring house where no artificial heat was employed; both these rods bore well, and so during the same season fruit was gathered—from this one plant out-of-doors, in the cold house, and in the new vinery itself.

At the end of two years, the Vine had grown so much that the house had to be extended to its present length, viz., 224 feet, and the rods outside were brought back. As a rod never throws a shoot when once it has been disbudded, that which had been introduced into the cold house was bare for 21 feet, as previously noted. A shoot was, therefore, trained back towards the stem, in order to cover the gap, which, when the leaves are out, is now no longer noticeable. The house having been thus enlarged, the parent stem is not in the middle of it, but throws its shoots twice as far in one direction as it does in the other. It sends off seven of these shoots or rods on each side; they are 2 feet apart, and trained horizontally on wires, kept about 1 foot from the glass.

The rods are all disbudded on the under-side, and the bunches of Grapes are tied to the wire next above that to which their respective rods are attached, so that there is perfect regularity in appearance, and each bunch gets its due share of light and air. Mr. Maurice Noel has well written of this Vine:—"Looking down the length of the greenhouse, it is hardly possible to believe that the far extending rods all spring from the same stem. With what power must the sap be forced along! What a mighty heart must be beating, one would think, somewhere down among the roots! If in the early spring-time, when the fresh, sweet leaves, delicate and transparent, begin to show themselves, the great Manresa Vine is so pleasant a sight, how glorious must it appear when covered with foliage, and enpurpled with the swelling clusters which crown the fulness of its glory!"

It was in its glory when the writer of this imperfect sketch was (by the courtesy of the rector) allowed to inspect it. At that time, 621 of its swelling clusters were there, and 2000 bunches had been removed at the first thinning.

The Manresa Peach.

There are other departments, too, in the pomological way in which Manresa excels. For several years the fruit from a particular tree of Royal George Peach was the first consignment of this fruit which came into Covent Garden Market, and on one occasion Mr. Davis sold the first dozen fruits to a fruiterer in his neighbourhood, who not happening to find a customer for them resold them to one of the principal salesmen in Covent Garden for the sum of £5. A few days afterwards another dozen was sent into the market, but this time they only fetched £3, the salesman adding, however, that he had sold the first dozen for £9. I have seen the returns of the produce from this tree for eleven years, during which period 473½ dozen fruits were gathered, realising the sum of £529 11*s*. 6*d*.; certainly an example of profitable fruit culture. Other Peaches in good variety are also well grown and fruited. Melons are grown in quantity, about 700 being cut per year; the favourite varieties being Moreton Hall, and Hero of Lockinge.

Turning our attention to fruits in the out-door department, what may be called the Davisian method of growing wall fruits may be referred to. The idea is to increase the crops from walls by fixing common iron standards on the top of the walls, fencing wire being stretched along from end to end; an inexpensive arrangement which will last for years. A Plum wall heightened in this way 5 feet has been a paying crop; the fruit from the trellis probably exceeding that from 8 feet of wall below. Mr. Davis is evidently of an inventive turn of mind, for we noticed a good system he has adopted of glazing some of his houses,

* *Diary of Henry Machyn*, Camden Soc., pp. 63, 400. See also *Chron. Monas. S. Albani* (Roll's series), vol. i., p. 286, &c.
† Wharton, *Hist. de Epis. et Dec. Lond.*
‡ *De rerum Inventoribus*, Lib. ii. 17.
§ Nichols' *Extracts from Churchwardens' Accounts*, &c., 1797 ed.

A Morello Cherry produced 6 bushels of fruit this season. Pears, too, on walls were bearing good crops, and it was noted that standard Apples were doing remarkably well. About sixty varieties are grown, and the most noticeable were Cellini, Alfriston, Yorkshire Greening, Beauty of Kent, and Wellington. The practice here is not to stop the leading shoots, but to thin out the minor shoots well, and by this means the trees are made to bear fruit right back to the base of the shoots. The soil is loam, inclining to clay, but there was no sign of canker in the Apple trees, which is often the case when the soil consists largely of gravel.

A good collection of herbaceous plants is grown, and the borders presented a gay appearance. Vegetables are in large request, as may be imagined for the size of the establishment. A fine even breadth of Brussel's Sprouts—Sutton's prize—was just beginning to button. With regard to trees—Oaks and Elms were making fine specimens. *B.*

ROSA LÆVIGATA.

The Chiswick Rose Congress held in the summer will have done something to show the public that hybrid perpetuals and Teas, lovely as they are, have no monopoly of the family charms. Nothing, indeed, can be more lovely than some of the single Roses, such as the Macartney, Rosa moschata, or Brunonis, Paul's single white, and others lately mentioned by one of our rosarian correspondents; whilst we are all looking forward to the flowering of the noble Rosa gigantea, which made its *début*, though only in a dried state, at the Rose Conference. We were glad to see that under Mr. Nicholson's care at Kew this Rose has already attained a height of some 3 feet, so that next summer we may fairly expect to have our curiosity gratified. While awaiting the presentation of this new Burmese Rose, we may feel complacent on the possession of the "Cherokee Rose," sometimes known as R. sinica; a Japanese-Chinese species, which in some mysterious manner has gained a footing at the Cape of Good Hope, Teneriffe, Madeira, in the Southern United States, and in some of the West India Islands—pretty much as John Chinaman himself is apt to do under like circumstances. The leaves of this trailing Rose are tri-foliolate, evergreen, and of a rich tint, that has gained for the Rose the name of Camelliæfolia. The large single white flowers are also like those of a single Camellia, which furnishes the reason for its recent introduction from Japan under the name of Rosa Camellia. Against a wall this Rose makes a splendid screen, as is shown in the illustration (fig. 70), for which we are indebted to M. Barbey, of Valleyres, Switzerland.

Rosa Fortuneana× of Lindley is stated to have originated as a cross between this species and Rosa Banksiæ. As generally seen, the "hip" of this Rose is covered with stiff, straight bristles, but in Japan a form is said to exist without any such investment, and another with purple flowers.

As this Rose has been such a traveller, and has taken out letters of naturalisation in so many countries, it is not to be wondered at that it has had many names. According to M. Crépin, that given by Michaux has the right of priority, and is, in consequence, the one here adopted.

NURSERY NOTES.

THE FLORAL NURSERY, MAIDENHEAD.

A visit to this nursery at any time is sure to prove in some way instructive, and with this view, I called on Mr. Owen a few weeks since, and especially to see his display of tuberous Begonias and early-flowering Chrysanthemums, for both of which he is famous.

The tuberous Begonia has here received special attention for some years past, during which time the change effected in the flowers has been extraordinary, and Mr. Owen practically demonstrates the same, for in one house he still retained a few plants of the old B. Sedeni type.

Of double and single varieties, several houses were filled, and together, made a very fine show. For effect the singles are unsurpassed, and make the grandest display in the mass; the doubles having a somewhat drooping habit, from the weight of their flowers, and where looked down upon, they are not so effective as the former. They were, however, seen to advantage on shelves suspended on either side of the pathway in one of the span-roofed houses. The plants were growing principally in 48's, and the stems were literally laden with flowers. They had been allowed to grow and hang over the pots, and as I saw them, nothing could, it seemed, be more effective for similar positions, or for filling baskets, &c. The excellence of the strain of both double and single varieties is such, that there is now little demand for named varieties, the best being annually selected for seeding purposes. Some of the double flowers attain gigantic proportions, single blooms in some instances being almost as large as a cricket-ball. A greater variety of colouring is found among the single-flowered, the habit of the plants also being dwarf, sturdy, and very floriferous. I noted also many exquisite colours not common in ordinary strains, such as white bordered with deep rose, chrome-yellow tinted with pink, blush white shaded pink, white distinctly striped with rose, sulphur, brilliant scarlet, and others.

A new selection is also being made known as the Picotee-edged class, the flowers of which are edged as in the Picotee, white, edged with pink, rose, scarlet, &c.

Outdoors some 20,000 to 30,000 plants were grown in beds, the majority of them this year's seedlings, and when seen in the mass they made a grand show, equal to that obtained from any bedding Pelargoniums, and although 4° of frost had been registered, they appear quite uninjured.

Early-flowering Chrysanthemums. — This useful section is deservingly attracting more attention than formerly, and there is no doubt that in a few years they will be still further improved. Planted about in herbaceous borders, they help to brighten and fill up vacancies when other plants are passed their best. For filling beds they are admirably adapted, especially where a white or yellow colour is required, and for cut flowers—always useful during September and October. The following were very good at the time of my visit:—Flora, deep golden yellow—one of the best, coming into flower in July, and lasting until cut down by frost; height, 2 feet. Mrs. Cullingford, very free, white; height, 2½ feet. Mdlle. Leoni Lassali, creamy-white, Japanese; height, 3 feet. Nanum, early white, 2 feet; Précocité, yellow, 2 feet; Blushing Bride, rosy blush, 2½ feet; Alice Butcher, bright orange, 2 feet; St. Crouts, pink, 2½ feet; Illustration, blush white, 2 feet; Anastasia, soft violet-purple, 2 feet; nanum Tolosanum, delicate rose, 2 feet; Toreador, bronze-red, 2 feet; G. Wermig, yellow; and Madame C. Desgrange, white, 3 feet. The later or November flowering Chrysanthemums looked extremely well, among them Mr. Owen has 200 seedlings, the majority of which he hopes to flower this season.

Herbaceous Plants.—A choice selection of these are grown, more especially those likely to furnish cut flowers in quantity. Of those still flowering the following were very good, Helianthus lætiflorus, H. multiflorus plenus, Chrysanthemum maximum, Helenium pumilum, and H. autumnale, height 2 feet—very useful; Rudbeckia speciosa, and R. purpurea, the latter a taller-growing variety than speciosa, of a dark purplish colour.

Among Michaelmas Daisies or perennial Asters, A. amellus bessarabicus was the best; height, 2½ feet. The deep violet-blue flowers are now very effective. *C. H.*

TWEED VINEYARD, CLOVENFORDS.

This famous Grape-growing establishment loses none of its interest to Grape growers as years go by. Many similar market establishments have sprung into existence since it was built and planted about twenty years ago, but none have become so celebrated. Although a large place, its extent has had nothing to do with the fame it has made for itself. Many rival establishments exceed it in extent, but none in the uniform superiority of the fruit it sends annually to market. This year the crops are equal to those of any previous year in weight and quality. The Vines are as vigorous and fruitful in their twentieth year as they were in their fourth or fifth. All this points to the wisdom of doing things well from the beginning. It cannot be said that the situation of the vineyard is exceptionally favourable; it is cold and bleak, and the soil is of very ordinary quality. The drainage alone is perhaps the only excellent condition the place naturally possesses, and that was doubtless taken advantage of and improved by artificial means at the first stages of the work.

The variety of Grape to which the largest amount of space is devoted is Gros Colmar. It fills six or seven houses alone. At the time of my visit—the fourth week of August—there were no bunches of this variety fully coloured, but all were in the colouring stage. Three of the largest span-roofed houses, 200 feet by 25 feet, were as much alike in regard to the weight of crop, and the size and number of the bunches, as could well be imagined. They each contained an average of 2100 bunches, which averaged about 2 lb. each, perfect in form, and with the berries unusually large. In this block of houses, another of the same size was filled with Lady Downes', well advanced in colouring; the number of bunches which averaged about 1½ lb. was 2626. The most admirable feature in these, and in every other house of Grapes on the premises, is the extreme regularity with which the bunches are distributed on the Vines, and their almost uniform size, there being no perceptible difference between those at the bottom and those at the top of the rods. Viewed from the end, either of these houses presented the appearance of an arch densely festooned with the noble clusters. The crop in these four houses is estimated at the total weight of about 14,000 lb. Running along the western ends of these houses is

The Corridor House, which is occupied with various kinds of Grapes, and is the only mixed house on the place. Black Hamburgh, Duchess of Buccleuch, Duke of Buccleuch, and others are grown here to illustrate their qualities to visitors, and to show peculiarities in treatment which any of them may require. The Duke of Buccleuch, which has been so much condemned by some, is here to be seen in perfection in every respect. Messrs. Thomson do not recommend it as the perfection of a market Grape, its thinness of skin being objectionable, both for keeping and carrying; yet it is, according to their experience, one of the most saleable of Grapes. Their contention, however, is, and always has been, that when its treatment is rightly understood it is for private establishments one of the very best of early white Grapes. The magnificent bunches, built up of berries, as large, and similarly coloured, as ripe Green Gage Plums, with which the vines in this house were laden, leave nothing to be desired. Messrs. Thomson consider that opinions adverse to this variety are due to errors in pruning. Experience has taught them that short pruning in the case of the Duke is an error. They always leave several eyes to each spur, and renew the Vines by bringing up fresh rods annually. Under this treatment there is never any lack of bunches. The defects of spot or cracking, about which there has been so much said against this variety, they have no trouble with, as they find attention to keeping the Vines drier at the roots, slightly notching the laterals beneath the bunches when they are about ripe, and keeping the atmosphere dry and airy perfect preventives of the evil. It is certainly a Grape that is worth attention as regards these simple details, to have it in the splendid condition in which it is always seen here.

Of Muscat of Alexandria there are two long lean to houses, which are started in January, in order to have crop fit for market in July. The crop was nearly all cut at the time of my visit, but what remained of it showed splendid quality and finish; th

bunches and berries being large and beautifully coloured. In a large spanned-roofed house in another part of the grounds, formerly planted with Lady Downes', Gros Colmar and Gros Maroc are being grafted on the first-named. The last-named is only being introduced experimentally, with the view of testing its value as a market Grape. Messrs. Thomson's experience of it does not enable them to give a definite expression of opinion on its merits for their purposes yet.

Such uniformly vigorous health in Vines bearing annually unfailing crops of very taxing weight, as seen in everything grown in it, both indoors and out—for the manure is also used in the field for Turnips and other vegetable crops—are more eloquent and convincing than words.

In a small house, a tenant's fixture, were a number of Tomatos in pots. The soil used for them was road scrapings, and such turfy material as could be obtained about the road-sides in the neighbourhood. All in the shape of manure they had received was the Clovenfords' artificial, and though it is no very rare thing to see good crops of this fruit, I have seldom if ever seen anything better than that houses. The leaves were simply enormous, measuring 20 inches by 16 inches, with stems more like Rhubarb than those of Begonias. Orchids, also, are treated to the manure two or three times a year by dipping their roots in a tub of liquid made of it, and their thrifty appearance and dark green foliage indicate that they like it well.

The Orchids.—The collection of these plants consists of carefully selected species and varieties of the most popular genera, but space will not admit of particularising in detail. All are clean, healthy stock, in fine marketable condition. Very notable were a fine



Fig. 70.—Rosa laevigata, the Cherokee Rose: flowers white. (see p. 496.)

suggests not only great skill in the general management, but also the intelligent application of nutrition of the right sort, and in proper quantity. Naturally the visitor expects to see manured compost-heaps somewhere on the place in quantity proportionate to the requirements of such an establishment. Of farmyard manure there is not an ounce, either stored or consumed, on the premises in twelve months. The only manure used is that manufactured by the proprietors, and now so well known as their "Vine and Plant Manure." They do not claim that it is the best possible fertiliser, they only say they know no better, that they would gladly use a better if they knew of it, and would improve their own if they knew how to do so. Results in their own place, contained in this little house. But apart altogether from the well tested merits of their own manure, Messrs. Thomson are of opinion that Tomato growers would do well to discontinue the use of farmyard manure altogether for this crop. They hold that manure of that kind, if it is not the cause or source of disease, at least fosters it, or renders the plants peculiarly susceptible to its attack. Up till five or six years ago, they were always more or less troubled with disease, and then they used farm manure in their compost; but since then they have used only their artificial manure, and have had no disease. Other evidences of the qualities of the manure were seen in some Begonias of the Rex section, growing by the edges of the paths in Orchid-lot of Phalænopsis Schilleriana, P. grandiflora, and others under cool treatment, the night temperature being kept at from 60° to 65°. They were imported plants of this year, and, judging from the old leaves, had not been very promising beginnings, but they had made leaves of 6 to 8 inches in length since the plants were put in their baskets in May last. Messrs. Thomson believe they are right in treating these comparatively cool, and the cleanness and great substance of the foliage, along with the number and healthy condition of the roots that every plant was sending forth, justified their conclusion.

A fine, full collection of Cypripediums was notable for luxuriance and healthy condition, and many pods of seed, carefully marked with the par-

ticulars of the crossing they had been submitted to, showed that here also the hybridising of this pliant genus is being attended to. Some seedlings of three or four years ago, which are large enough, may be expected to flower next season, and being distinct in foliage, may turn out to be new and perhaps valuable.

The New Hose.—My attention was directed to the Sphincter Armoured Hose, which has been in use here long enough to test its merits. It is obviously an excellent invention. The tube is perfectly protected from friction with the ground, or floor, by the spiral of steel wire that encircles it; the wire also prevents the hose from buckling or kinking. An opinion which I had held, before seeing the hose on this occasion for the first time, that the wire would be apt to unwind if cut, is unfounded. Clearly it may be cut into inch lengths and not unwind in the least degree. *W. S.*

The Bulb Garden.

THE HIPPEASTRUMS.

The resting period for these has now arrived, and it is necessary to see that they do rest. In September all the leaves were removed from ours, and now the crowns have dried up, forming a lurking-place favoured by insects. A long-shaped insect of the powdered bug family infests the bulbs very much. It is allied to, but is evidently of a different species, to the mealy-bug of our hothouses. Thrips have not been troublesome this year, but we rarely fail to suffer from them in July; and very difficult they are to get rid of. Red-spider is more easily got rid of than thrips, and it is also present in summer. Even when we fancy our bulbs are clean, we set to work—we began to-day, October 25—to remove all the loose material round the neck, taking care not to injure the sound portion. The workman has with him a tin pepper-box filled with tobacco-powder, and as each bulb is cleaned he dusts the crown all round with the powder. No insect pests can stand it.

The re-potting will begin in the first week in January, and as a precaution this dusting of the crowns with tobacco will then be done again. Many growers complain by letter that they fail to flower a large proportion of their bulbs. If half-grown bulbs fail to flower well, let alone full-grown ones, there is some fault in the method of culture. Any practical cultivator knows that good bloom depends upon clean healthy growth, and the proper ripening of the bulbs. The rudimentary leaves and flowers are now tightly packed-up in the bulbs, and yet they are not ready to issue forth; they require a period of two months or more to remain in an apparent dormant state; but a process of slow development is going on in the bulb, and when the time comes for the leaves and flower-scapes to issue forth, they develop with rapidity, leaving the outer coatings of the bulbs hanging loosely, with nothing inside apparently for them to cover. The contents have developed into flowers and leaves.

When the flowers fade, the process of building up the bulbs begins again; and it depends entirely upon the way the plants are treated then, whether they will flower well or ill the following season. A not uncommon way with gardeners is to place the flowering plants in the greenhouse or conservatory while they are in flower, and there they usually remain afterwards—at a considerable distance from the glass, perhaps, and crowded, may be, with other plants. The leaves remain green, and the bulbs plump, but they are very unlikely to flower well the next year. Another plan is to place them in a vinery under the shade of Vines; there they form good-looking leaves, but they do not produce free-flowering bulbs. There are other improper methods of treating them, and some cultivators—though, I hope, not many—think nothing of their plants when they pass out of bloom, and only wake up to their responsibilities when the time comes to re-pot them. I need not say that none of the above methods will command success.

In all establishments where these plants are well grown, the pots containing the newly potted bulbs are plunged to the rim in a tan-bed; the heat from the tan, and the moderately warm temperature of the house, soon cause the leaves and flower-scapes to appear. As they advance in growth, the temperature is increased until at flowering time it may be 60° at night; 55° will do, but I fancy the flowers develop better at the higher degree of warmth. When in flower they may be placed in a warm greenhouse, or conservatory, or anywhere to display their flowers. When the flowering period arrives, let the plants be re-arranged. They should all be removed from the hotbed, and be plunged again over the rims of the pots, and not too closely together. Keep up a moderate hothouse temperature—say 60°—and keep the plants in a good growing condition; clean and free from insect pests, and they will not only plump up their bulbs to a large size, but almost the whole of them will flower. The plants nearly all pass out of bloom by the end of April, when they are treated as indicated above, and they continue growing and developing until August, when the ripening-off process begins; water is then withheld altogether in September, and the leaves soon show signs of maturity.

It ought to be stated here that some species and varieties of Hippeastrum are much more hardy than others. H. vittatum, for instance, is the parent of many good garden forms, and may be grown in a greenhouse temperature. When this species was first figured in the *Botanical Magazine*, it was stated that the stems grew to a height of 3 feet or more, producing from two to five flowers. It was also remarked that, "it usually flowered in April or May, but might be forwarded by artificial heat." A remark that would imply the usual course was to grow it without artificial heat. It is figured t. 129.

The very fine variety H. vittatum Harrisoniæ seems to have been collected near Lima by a Mr. Crook, and flowered in 1824 with Mr. Richard Harrison, of Liverpool. Mr. Baker, in his Monograph of Hippeastrum, supposes that this is a hybrid between vittatum and solandriflorum. It is remarkably well figured in the *Botanical Register*, t. 988. Probably this, as well as vittatum, would succeed in a cooler temperature, but they certainly do better with a little heat. The garden varieties at present in cultivation have been intercrossed to such an extent with species and varieties, that their first parentage cannot be traced with any degree of certainty. The forms most favoured by horticulturists are those producing flowers with broad, stiff petals, and scarcely any tube. They have mostly been raised, in a series of progressive stages, from the distinct and beautiful species H. pardinum, and H. Leopoldii. *J. Douglas.*

Plants and Their Culture.

The Cold Conservatory.—Great attention should be given to this structure, so as to keep it in as bright a condition as the means at command will allow. Dampness must be avoided, and decayed leaves and rubbish cleared away daily. After this date a gay conservatory is more appreciated than when flowers are abundant out-of-doors. Sameness in arrangement may be avoided by often changing the plants, and by doing this the permanent plants are benefited, as they grow of a better shape than when allowed to remain in one position for months together. Climbing and creeping plants give a naturalness to a conservatory if they are well grown and managed, and will now require to be kept in closer quarters, so as to allow the plants beneath them as much light as possible. This thinning-out should be carefully undertaken, and in accordance with the habits of the plants. Hard cutting back and close tying in should be avoided, unless the plants are infested with insects, when a thorough cleansing becomes a necessity; and in the case of mealy-bug having got a strong hold on a plant, it is the best plan to get rid of the plant if it cannot be properly cleansed; and all large climbers should be thoroughly cleaned when their foliage gets dirty. The flower-buds of Camellias will now be swelling fast, and the plants may be assisted with Clay's manure given once a week, and an occasional watering with soot-water. Large Bouvardias will now be found of great value for decoration; our large plants, which were planted out during the summer, are now full of bloom. These plants flower profusely if assisted with weak liquid-manure, and afforded full sunlight. The later plants should get assistance, to help them to form good trusses of bloom. The useful Begonias will now bloom freely, if placed at the warmest parts of the house and watered carefully.

Miscellaneous Plants.—A good batch of Scilla sibirica for the front rows of stages is an effective plant when massed. The earliest Epiphyllum truncatum are now blooming freely; another good plant is Chrysanthemum pubescens and C. Etoile d'Or. Marguerite plants struck early in the summer and grown well, will now be in 32's and full of bloom; these plants are useful in a variety of ways.

Chrysanthemums will now be available for employment in the cool conservatory, and should, if possible, be brought on in groups, keeping the later plants in other houses where greater attention can be given them to perfect their blooms. Mildew must be watched for, and means taken to prevent its spreading.

Chinese Primulas and other perennials will require careful watering to keep them in good health; Salvia splendens will be benefited by having plenty of liquid manure if the pots are full of roots; Schizostylis coccinea is a most useful plant at this season, and needs similar treatment to Salvia, when it will form strong spikes of bloom.

Foliage Plants.—There will be abundance of these plants for intermixing with the flowers, viz., Yuccas, Dracænas, and Cordylines, Aspidistra lurida, and its variegated variety, are serviceable decorative plants, and should always be grown in quantity where a large number of plants for room decoration is required. Coprosma Baueriana variegata, if grown in 5 or 6-inch pots, is effective during the winter; it is increased by layers, and is of easy culture. Aralias, Agnostus, Lomatias, Rhopalas, and Phormiums will be found to be excellent for mixing with other plants. *Geo. Wythes, Syon House, Brentford.*

The Orchid Houses.

Preparation for Winter.—The houses, staging, and plants having now been made sweet and clean, the heating apparatus examined as to the state of boiler, firebars, &c., the plants should be re-arranged for the winter in the positions and quarters they have been found to succeed best in. All blinds should be removed from the sunny sides of the houses, and any kind of temporary shading which may have been employed in the summer washed off the glass, as from now until late in the spring full light is required by the plants. As to the temperatures suitable to winter some species of Orchids, there are doubts entertained by growers, and I may as well state my own opinion on some that I can call to remembrance. Masdevallia chimæra, and all that section, and M. Tovarensis do not thrive in the cold-house in winter, when that house is kept low, and they are better if removed for the winter to a house which is a little warmer, such as that which holds the plants of Miltonia vexillaria, Odontoglossum Roezlii, and O. Phalænopsis.

Some species of Oncidium are often injured by being kept too cool in the winter; these are O. ampliatum majus, O. Papilio, O. Krameri, O. lanceanum, O. luridum, O. carthaginense, and others of their class. On the other hand, other sections are injured by timidly removing them from the cold-house, where they thrive best, if otherwise properly treated; these are Oncidium macranthum, O. undulatum, O. Warscewiczii (bifrons), O. monachicum, O. xanthodon, O. serratum, and others of that section; O. crispum, O. prætextum, O. concolor, and others of the same section; O. tigrinum, O. unguiculatum, O. splendidum, O. Phalænopsis, O. cucullatum, O. incurvum, O. ornithorhynchum, O. phymatochilum, O. stelligerum, &c.

Some growers advise no more warmth than that of the cold house being afforded to Odontoglossum Cervantesii and O. Rossii varieties, but it is quite a mistake, as I proved by putting for experiment examples of all the species in an unheated house, where they were killed by frost. Fortunately, the least desired is the first to go—O. Lindleyanum, O. cirrhosum went next. The last to show injury were O. Rossii and O. Cervantesii, and these were not killed, although frozen with 14° of frost inside the house.

Other strictly cool-house Orchids which are frequently injured by removal to warmer quarters in winter are all the Pleiones, Sophronitis, and all the forms of Lælia pumila and L. monophylla. Any of these may be grown in a cool intermediate house, but they are far safer in the cold house if they have never been rendered delicate by warm treatment. Keep Barkerias cool and in as sunny a spot as possible. The temperatures for November are:—Warmest house, 65° to 70° by day; 60° at night. Intermediate house, 60° to 65° by day; 55° at night. Cool house, 55° to 60° by day; 50° at night. *James O'Brien.*

Phalænopsis Culture.—I saw a note in a recent issue of the *Gardeners' Chronicle*, from Mr. Thomas Coomber, on the different species of Phalænopsis, and how to grow them. Mr. Coomber says that, in a description of P. violacea which he had seen, the plant was credited with the production of leaves as large as those of P. Schilleriana, which latter, he says, makes leaves about a foot long; the description which he saw must certainly be fabulous, as I have seen very healthy plants indeed of P. violacea, and the measurements of the leaf only recorded 6 inches in length and 3 inches in width, and this is, in my opinion, very good. P. violacea requires the very same treatment as the other species of Phalænopsis, such as grandiflora, amabile, Schilleriana, Stuartiana, &c., the treatment recommended being as follows:—

If your plants are not satisfactory, take them out of their baskets, and clean all the roots thoroughly with some clean water and a small brush; also clean the leaves, and remove any particles of dirt from the crowns of the plants; do not by any means allow water to remain in the crowns, as these plants are very apt to be injured by your so doing. This done, get some sound teak baskets or cylinders—the latter in my opinion are preferable—be sure that the baskets are quite clean, and fill the basket or cylinder nearly to the top with clean potsherds and charcoal, leaving spaces to receive the descending roots of the plant; the plant should then be put into the basket as firmly as possible without causing any injury; this done, fill well with living sphagnum moss, and trim it neatly with a pair of scissors so as to give neatness to the whole. After this, if there is a chance of the plant doing well, improvement will quickly be visible, good, healthy flat-headed roots will shoot out, and cling to the woodwork of the cylinder. One must be very careful, when watering the plants, not to injure these roots, for on these depends, to a great extent, the future welfare of the plant; so much for the potting part of the business. It is not enough to pot the plants well, and think that they necessarily must thrive; but constant care is required to bring the plants to perfection; for instance, that all-important function of watering must be carefully attended to. Watering Phalænopsis requires judgment, and water ought only to be afforded when the plants require it. That Phalænopsis like rather more moisture than other Orchids, is a fact with which all interested in their culture should be acquainted, coming as they do from the sunny climes of the Malayan Archipelago, the Philippines, Sumatra, &c., they revel in a warm humid atmosphere; therefore, the house in which the plants are grown should be kept at a temperature of about 80° Fahr. during the day, and about 10° lower during the night. When the plants are making new roots, a sharp look-out must be kept for cockroaches and such-like enemies, which have a partiality for the delicate roots of the plant. A very good trap may be made with slices of bread covered with phosphorus paste, and distributed about the house and between the baskets. This should be done on closing the house for the day, as cockroaches do not usually make their appearance before evening, and in the morning the pieces of bread and dead cockroaches may be collected.

Rain-drip is very injurious to Phalænopsis, and tends to cause spot on the leaves; it is, therefore, a very good plan, when going through the plants daily, to take a sponge and wipe off whatever water may be found resting on the leaves. The sphagnum moss on the plant will want attention occasionally, as, being in a warm temperature, it naturally grows long, and if it is not clipped-in periodically, it will eventually stifle the plant. Mr. Coomber's plant of P. violacea is by no means a poor specimen, and it is the habit of this plant not to produce more than three or four flowers on a spike. By treating his plants in the manner above described, I have no doubt he will soon get them into a creditable condition of health. *P. W.*

The Flower Garden.

Winter Flowers.—Flower gardening, in the strict sense of that term, may now be said to be ended for the season, yet there are numbers of Roses, Michaelmas Daisies, Snapdragons, Chrysanthemums, Pentstemons, Stocks, Wallflowers, and hardy Heaths, which will continue to bloom if the weather keep mild to the end of the year; and though we are wont to call such flowers common, they are, at any rate, the only flowers that will endure the rigours of the season. Planted as they are here in the borders, which are mainly filled with perennials, the majority of which are no longer of any beauty, they impart an air of cheerfulness to the place; moreover, as the flowers named above, with one or two exceptions, can be obtained for a small outlay, all who care for flowers in the autumn should grow such in quantity. Granted that their presence in the borders may, to some extent, interfere with future rearrangements of the perennials, all of these do not require transplanting annually; besides, it will be quite early enough to transplant many of these after the flowers have passed away.

Roses and Bulbs.—Much as I dislike the practice of robbing the Roses of their right to the soil of the border in which they are planted, necessity obliges me to double crop the rose-beds, these being the only available places in which we can have the display of Hyacinths and Tulips; but to make amends in some measure for such calls on the soil, it is made as rich as the materials at our command will allow; and each alternate year the Roses are lifted and the ground is well manured, some fresh loam added, and deeply trenched. The planting of the Roses is then done expeditiously, and when the soil is made firm, and the plants tied to supports if this is found to be necessary, the planting of the bulbs is done, none of them being planted nearer to the stems of the Roses than about 8 inches; a neat mulching of cocoa-fibre refuse completes the work.

General Work.—Complete the lifting of all bulbs and tubers used as bedding plants, which are not hardy. Dahlias in many parts are still in blossom, and one feels loath to cut them down; yet, to prevent injury by frost, this should now be done. Tuberous Begonias, Lilium auratum, and all choice Gladiolus should be lifted. The last two we have repeatedly wintered in the ground, and with a fair amount of success, but our soil is dry and well drained, and it is only in such soils that it is safe to adopt this practice, and even then, a protective covering of ashes should be placed over them. Bedding plants of every description ought now to be in their winter quarters. The prevention of damp, and the consequent loss of leaves and shoots by decay, will for the next few weeks be the one great endeavour of the gardener. To this end, in mild dry weather, give the fullest amount of air, and in long continued rainy weather, a slight warmth in the pipes with a little ventilation.

Calceolarias, Violas, Leucophytum, Gnaphalium, offsets of Echeverias, Klenias, &c., that are in cold frames, and not yet rooted, should be covered at night. A few degrees of frost will not harm any of these after they are well rooted, but they may be destroyed by frost, if not rooted. *W. Wildsmith, Heckfield Place, Hants.*

Fruits Under Glass.

Peach House Treatment.—The early-house should be started in this month, commencing at a temperature of 45° to 50°, damping the trees in the morning, also in the afternoon, if the day is bright enough to dry them before nightfall. The outside border should be covered with a layer of dry leaves, and some litter over that, so as to protect it in some degree from the effects of rain and frost. Examine it before doing so to see that it is moist enough. Prune the second house of Peaches as soon as the leaves are fallen; wash the glass, top-dress the border, tie the trees to the trellis, and make ready for an immediate start when the proper time for doing so arrives. Any root-pruning or transplanting to be done, should be taken in hand in the other houses.

Strawberry Plants in Pots.—These, as directed last month, should be placed where they can be protected from the weather, and if there is not convenience for doing this, they may be plunged to the rim in coal-ashes as a protection against frost.

Melons.—At this time of the year a great deal will depend upon bright days to give flavour to the fruit, and a genial temperature must be maintained of not more than 70° to 75° at night, and 10° to 15° higher by day, taking advantage of favourable weather always, to give air by day. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

The time has now arrived for the planting of fruit trees generally, with probably the one exception of Apples, which may still be left a little longer. Peaches, Nectarines, Cherries, &c., assuming that the borders have been prepared, should be planted. When planting wall-trees keep the stems 6 inches away from the wall, so that there may be ample space for increase in size of stem; make the soil very firm by trampling it when sufficiently dry to be workable. This firming of the soil cannot be too much or too often recommended, and especially when the soil is light and rich, as it does, to a considerable extent, prevent a too vigorous supply, and consequently unfruitful wood. In heavy soils deficient in lime, old mortar should be mixed with the soil for the purpose of supplying what is wanting, and to keep it from souring. Cover the roots from 3 to 6 and 9 inches deep, and always fill in amongst them with fine soil as the work proceeds.

Root Pruning and Root Lifting should now be finished without any delay. Cordons and bush trees, after being planted a few seasons, are very apt to make unfruitful wood, and should be lifted entirely and replanted nearer to the surface, adding a little fresh soil to the staple.

Any of the trees showing the effects of heavy cropping should be top-dressed before they get too much exhausted. Wall trees which may have been planted on partially exhausted borders a few years ago may now have some of the soil removed from above the roots, replacing it with new loamy soil. This operation should be repeated annually, as the roots extend further into the border allotted to them.

Peaches.—The following varieties of fruits may be confidently recommended to planters:—Hale's Early, Gros Mignonne, Alexandra, Noblesse, Waterloo Early, Royal George; in some parts of the country, Noblesse, Dymond, Stirling Castle, Dagmar, Bellegarde.

Nectarines.—Lord Napier, Humboldt, Pine-apple, Elruge, Pitmaston Orange, and Stanwick.

Cherries.—Rivers' Early, May Duke, Tartarian, Kentish Bigarreau, Bigarreau Napoleon, Elton, Morello for north and east walls, and as bushes in the open.

Apricots.—Moorpark, Luizette, Blenheim, Hemskirk, and Gros Péche. The above cannot be regarded as a complete list, but it consists of those which succeed well in Kent, and never fail to give satisfaction. *H. Markham, Mereworth Castle, Kent.*

The Kitchen Garden.

Tomatos.—Any fruits which are of a red colour may be put into a vinery to ripen thoroughly. Plants intended to fruit during the winter are best with their roots confined in 7 or 8-inch pots, and these may be stood on turves and the roots allowed to run through the bottom. When the pots are well filled with roots, frequent watering with weak manure will be found of benefit; confine the growth to one shoot, and assist the fertilization of the flowers by using the brush during sunny days. Cuttings may be put in, if not already done; when rooted they should be potted off and grown in an intermediate temperature, where they can get all the light and air possible to secure a sturdy growth. Should these become too large, the points may be cut off and struck in bottom-heat.

Tarragon, Spear Mint, and Sorrel.—A sufficient quantity of the two former may be lifted, planted in boxes, and placed in an intermediate temperature. Sorrel should be put into pots, the balls being unusually large and unwieldy.

Chervil.—This herb is often asked for by the cook, and although the plant is comparatively hardy, it is prudent to place some temporary covering over it in order to be able to secure a supply in hard weather. *W. M. Baillie.*

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY, Nov. 5 — Royal Horticultural Society: Chrysanthemum Centenary Celebration and Conference at Chiswick (and following day).

SHOWS.

TUESDAY, Nov. 5 — Brighton and Hove (two days). Finchley (two days).

WEDNESDAY, Nov. 6 — Portsmouth (three days). Kent County, at Blackheath (two days). Market Harborough (two days). Ealing.

THURSDAY, Nov. 7 — Ipswich (two days). Isle of Sheppey (two days). East Grinstead.

FRIDAY, Nov. 8—Crystal Palace (two days).

SATURDAY, Nov. 9—Kettering.

SALES.

MONDAY, Nov. 4 — Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Fruit Trees at Perry Hill, Cliffe, Rochester, by Protheroe & Morris.

TUESDAY, Nov. 5 — Nursery Stock at the American Nurseries, Bagshot, by Protheroe & Morris (four days). Nursery Stock, at The Hale Farm Nurseries, Tottenham, by Protheroe & Morris. Lilies, at Protheroe & Morris' Rooms. Rose Trees, Bulbs, &c., at the City Auction Rooms, by Protheroe & Morris.

WEDNESDAY, Nov. 6 — Dutch Bulbs, at Stevens' Rooms. Bulbs, Greenhouse Plants, &c., at Protheroe & Morris Rooms. Nursery Stock, at 47, Fulham Palace Road, Hammersmith, by Protheroe & Morris.

THURSDAY, Nov. 7 — Established and Imported Orchids, 10,000 Lilium auratum, &c., from Japan, at Stevens' Rooms. Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Brockley Nursery, Ivy Lane, Brockley, by Protheroe & Morris (two days).

FRIDAY, Nov. 8 — Established and Imported Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Nov. 9—Dutch Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—44°.5.

Chrysanthemums.

ALL around us are the signs of busy preparation for the coming Chrysanthemum season. Jubilees and Centenary celebrations are in fashion, and no one seems to be very particular as to extreme accuracy of date. It has accordingly been ordained that this year is to be the centenary year of the introduction of this popular flower. Be it so. The archæologist and botanist will, we believe, dispute the date; but no matter, we will have our Centenary celebration in 1889, and such is the furore, that we have no doubt we shall have a very successful celebration, and be quite ready for the hundred and first anniversary next year. Our contemporary, the *Gardeners' Magazine*, opens the ball with a special double number, full of interesting information as to the history of the plant as a florists' flower, and which contains a perfect gallery of portraits of worshippers and high priests of the shrine of the Chrysanthemum. We congratulate our contemporary on his enterprise, and on the very successful manner in which he has opened the session. Next week, on Tuesday and Wednesday, an exhibition and conference will be held at Chiswick. History, science, art (ceramic and pictorial), literature, taste, culture, experience—these are what we may confidently look for at Chiswick next week, in connection with the Chrysanthemum. From Kew a selection of dried specimens will be sent, and Mr. W. B. HEMSLEY will supply the botanical notes concerning these. These should prove of unusual interest. Let us hope the weather will be kind, and that the public will flock in to support the brave old Society that is working so hard to promote the highest interest of horticulture and of its votaries. Chiswick is now-a-days within half an hour of Charing Cross and other metropolitan stations, while it is itself the centre of a vast Chrysanthemum-loving population; Richmond, Ealing, Kingston, Hammersmith, and other towns and suburbs, are close at hand, within a walk, or only a few minutes' distance by rail. Let us hope the managers have done their best to make their celebration widely known in these districts, as well as in the metropolis. As the Society took so active a part in the introduction of the Chrysanthemum, and the earlier volumes of its *Transactions* contain so much that is the basis and starting-point of what we know on the subject, it is most fitting that the Centenary should be celebrated at Chiswick, if it be only to remind a somewhat careless public what great obligations they are under in this matter of Chrysanthemums, as in many other things, to the old Society. Let them show their appreciation and their gratitude by flocking to its support now that it is conducted at once on a more popular and a more horticultural basis than ever.

In the following week, the National Chrysanthemum show will be held at the Aquarium, at Westminster, and, from the great zeal and energy manifested in the management of that flourishing Society, there can be no doubt that a splendid exhibition will be made. Edinburgh and York devote three days to the cult, Manchester, Liverpool, Birmingham, Hull, and Dundee two, while our hearty good friends, the Belgians, keep up the solemn *fonction* for eight days! At these exhibitions, emulation and rivalry among growers, an eager competition for prizes, and a keen eye to business matters generally, will be the predominant features, as they will also, in their degree, be at the thousand-and-one minor shows which will shortly be held all over the kingdom, as well as on the Continent—to the great advantage, let us hope, of all concerned. Progress is sure to be made, and where there is progress there is health and contentment.

We hope to do our share in the good work by publishing some original notes on the history and development of the flower, based on the researches of Mr. HEMSLEY into the Chinese flora, and specially of the wild forms discovered in the mountains of Central China by Dr. HENRY.

As to reports of the shows that are likely to pour in upon us, they will be legion, while our space cannot be materially augmented; we shall, therefore, endeavour to study the interests of our readers by reporting as fully as possible the principal shows, and by according to the minor ones as much space as circumstances will admit. We shall try to avoid, as much as possible in these reports, the constant reiteration of the names of varieties, for if these be dealt with in the reports of the larger exhibitions, there will be no necessity to dilate upon them again and again in the records of the smaller ones.

CHRYSANTHEMUM SHOWS.—The following is a list of the show fixtures during November, as far as we have been informed:—On *Tuesday*, 5: the (two days) Centenary Celebration and Conference opens at the Royal Horticultural Society's Gardens, Chiswick; the Brighton and Hove, and Finchley Societies also open two-day shows.—*Wednesday*, 6: Portsmouth (three days); Kent County (at Blackheath), and Market Harborough (two days each); and Ealing.—*Thursday*, 7: Ipswich and Isle of Sheppey (two days each), and East Grinstead.—*Friday*, 8: two days exhibition at the Crystal Palace opens.—*Saturday*, 9: Kettering.—*Monday*, 11: Surrey (at Peckham, two days), and St. Neots.—*Tuesday*, 12: National Chrysanthemum (at the Aquarium, Westminster); Kingston, Wells, Ascot, Hampstead, Lewes, Truro, Leeds, Brixton, West Kent (two days each); Exmouth, Devizes and Pembroke.—*Wednesday*, 13: Cornwall (three days); Winchester, Bath, Croydon, Dartford, Faversham, Northampton, Southend, Bournemouth, Great Yarmouth, and Cheltenham (two days each); Torquay, Chelmsford, and Dorset.—*Thursday*, 14: Barnsley, Cranbrook and Weald of Kent, Hinckley, Tottenham, Putney (two days each); Reading, Royal Horticultural of Ireland (at Dublin), Chiswick, Birkenhead, Weybridge, Dawlish, Stroud, and Walton.—*Friday*, 15: Bolton, Bradford, Eccles, Leicester, Derby, Tooting (two days each); Devon and Exeter, Hitchin, Cheshunt and Hessle.—*Saturday*, 16: Bacup.—*Tuesday*, 19: Manchester, Watford, Liverpool, Eastbourne, Green Street and District, Winchester, The Hartlepools, Cardiff, and Twickenham (two days each); Oxford.—*Wednesday*, 20: York (three days); Birmingham, Rugby, Bedford, Bristol, Southgate, and Wimbledon (two days each).—*Thursday*, 21: Scottish Horticultural Association, at Edinburgh (three days); National Chrysanthemum and Hull, in conjunction (two days).—*Friday*, 22: Chorley and Stockport (two days each)—*Saturday*, 23: Batley.—*Sunday* 24: Ghent (eight days).—*Wednesday*, 27: Barton-on-Humber.—*Thursday*, 28: Pontefract (two days).—*Friday*, 29: Dundee (two days).

THE CHRYSANTHEMUM CENTENARY.—A Paris correspondent states that the centenary of the introduction of the Chrysanthemum into Europe will be celebrated by many of the French horticultural societies, and some fine exhibitions of this favourite flower will be held at Orleans, Toulouse, Lille, Bordeaux, and other cities.

OODEYPORE.—We publish as a Supplement to this week's number a reproduction of a view in the gardens of the Maharana of Oodeypore, India, which was forwarded by Mr. T. H. STOREY, the Superintendent, who says:—"I send you a photograph of the Victoria Regia in flower, with a little native boy sitting on a leaf. Necessary precautions were taken, by placing a thin piece of board over the leaf, to prevent the legs of the chair going through. Most of the leaves measured 7 feet 6 inches in diameter. I introduced the plant from Madras, where I have seen the leaves 8 feet in diameter. There are a few handsome specimens in the background of the photo, including standard Roses, Pinus longifolia, Ficus religiosa, Cypress, Mimusops Elengi, Papyrus, and Callistemon lanceolatus; but owing to the glare of the sun at the time the photo was taken, they do not look as they ought to do." A statue of the Empress-Queen is shortly to be erected in the Gardens at the cost of the Maharana.

LINNEAN SOCIETY.—An evening meeting will be held on Thursday, November 7, 1889, at 8 P.M., when the following paper will be read:—"On a Collection of Dried Plants, chiefly from the Southern Shan States, Upper Burmah," by Colonel H. COLLETT, F.L.S., and W. BOTTING HEMSLEY, F.R.S., A.L.S.

THE GARDENERS' ORPHAN FUND.—The usual meeting of the committee took place on the 25th ult., at the Caledonian Hotel, Mr. G. DEAL in the chair, with a good attendance of members. The minutes of the last meeting having been read, the Hon. Sec. announced there was a balance at the bank of £424 17*s.* 10*d.* Some special receipts were announced as follows:—Opening the Gardens at Heckfield, per Mr. W. Wildsmith, £6 10*s.*; opening the Gardens at Ketton Hall (unfortunately a wet day), per Mr. W. H. Divers, £2 12*s*; proceeds of a concert at Swal-



VIEW IN THE GARDEN OF H.H. THE MAHARANA OF OODEYPORE.

lowfield, per Mr. C. W. Allen, £4; part of the collection at Keele Hall Church, *re* Harvest Festival, £1; donations: Messrs. J. Broome, Llandudno, £5; Oakshott & Millard, Reading, £2 2*s.*; T. B. Potter, M.P., £1; and money-boxes as follows: Mr. G. Milford, Egerton Lodge, Melton Mowbray, £3; Wakefield Paxton Society, £2 10*s.*; Mr. J. Miles, Southampton, 21*s.*; Mr. R. Greenfield, Warwick, collected at flower show, £2 1*s.* 3*d.*; Mr. C. Sutton, Chevening Park, Sevenoaks, 12*s.*; Royal Horticultural Society, Chiswick, box at Vegetable Conference, 5*s.* 3*d.*; Mr. W. A. Green, Wolverhampton, 3*s.* 7*d.* The quarterly allowances to children upon the Fund, £61 15*s.*, was ordered to be paid. It was announced that the sum of £3025 19*s.* 10*d.* was now invested. It was resolved that the sum of £300 be placed on deposit at the Bank. The meeting closed with a vote of thanks to the chairman.

Railway Rates.—The inquiry before Lord Balfour of Burleigh, on behalf of the Board of Trade, is now fairly started, and no one can predict with any amount of certainty either the time it will occupy, or the cost it will entail on the part of the railway companies and the objectors. All the leading members of the parliamentary bar, besides some of the leading members of the Common Law bar, are retained, and all the forensic skill and subtle argument that can be brought to bear on this important question will be strained to the utmost. Few people can have any idea of the magnitude of the interests at stake. At the preliminary meeting, which was held to consider the mode of procedure, an objector stated that he represented a trade which sent annually over the railway system of Great Britain and Ireland 70,000,000 of tons. An advance of even a 1*d.* per ton per mile to those whom this objector represented, would alone represent an immense amount; but when it is remembered that he is but one of over 2000 objectors, and that the number of railways in the United Kingdom is over 400, some small idea can be gathered of the aggregate interests involved in the enquiry. We are, however, only concerned in the matter so far as the Horticultural trades are concerned; but there are many questions of principle which are common to all trades, not the least important of which are the proposed "station and terminal charges." We understand that arrangements have been made by the Nursery and Seed Trade Association, Limited, whereby the horticultural trades will have the benefit of the services of Mr. Balfour Brown, Q.C., when these questions are argued; with a view to shorten the enquiry as far as possible, the Board of Trade selected the schedule of charges of the London and North Western Railway Company as illustrative of all the others, but Mr. Balfour Brown pointed out that of all the various railway companies, the private Acts of Parliament obtained by this company, were the most unfavourable to traders; and another schedule of charges, viz., that of the Great Western Railway Company was consequently also selected. The remaining railway companies of the United Kingdom, with very few exceptions, have formed themselves into an association which is represented by Sir Henry James, Q.C., Mr. Pember, Q.C., Mr. Bidder, Q.C., and other eminent counsel, and liberty is reserved to refer to any one of the schedules of the various railway companies during the enquiry if the necessity should arise. The Association of Railway Companies presents a formidable appearance, they possess unlimited wealth with which to fight the objectors, and we are pretty safe in saying that no expense will be spared by that Association in endeavouring to maintain the schedules lodged by them. We have every confidence in the tribunal appointed to decide the various questions that will arise from time to time, and we are glad to see that Lord Balfour of Burleigh stated at the first meeting that no technicalities should be allowed to stand in the way of complete justice being done to all parties concerned. We shall carefully watch the progress of the enquiry from time to time as occasion requires, refer to the subject, and bring before our readers any question of interest to the horticultural trades. Meanwhile, we would urge our readers not to allow their interests to suffer in not providing the necessary sinews of war for the purpose of sustaining the objections lodged on their behalf.

Another Centenary.—In this age of centenary celebrations it will interest botanists, at any rate, to recall the fact that Jussieu's *Genera Plantarum* was first published in 1789. Perhaps our friends at the Linnean Society may think fit to "improve the occasion."

The Wheat Crop of 1889.—Sir John Lawes favours us with a long statement, from which we extract the following particulars:—Up to a short time before harvest all the conditions of season were favourable for the growth of a large crop, but at the time when dry weather and high temperature are especially necessary for the filling of the grain, the temperature was low, and neither the soil nor the atmosphere was dry; indeed, the conditions were most disastrous. It is evident from this description of the season, that the forecasts as to the probable yield of the Wheat crop, which were published in the papers shortly before it was ripe, must be considerably discounted. In the following table is given the produce of wheat in 1889, on selected plots in the experimental field at Rothamsted, which has now grown the crop for forty-six years in succession. The plots are the same, as to description and quantities of manure applied, as have been adopted in the estimates of the yield of the country from 1852 up to the present time.

Harvest.	Unmanured. Plot 3.	Farmyard Manure. Plot 2.	Artificial Manures. Plot 7.	Plot 8.	Plot 9 (or 16).	Mean.	Mean of Plots 3, 2, and 7, 8, 9 (or 16).
Bushels of Dressed Grain per Acre.							
Present year, 1889	12¼	40½	30½	35½	29	31¾	28⅛*
Average 10 years, 1879-88	11¾	33½	32	35¼	36¼	34⅝	26⅝†
Average 27 years, 1852-78	13½	31⅛	33¼	36¾	36¼	35⅝	27¼‡
Average 37 years, 1852-88	13	34	32⅞	36½	36¼	35⅝	27½§
Weight per Bushel of Dressed Grain in Pounds.							
Present year, 1889	59⅝	59¼	60¼	59¼	59⅝	59¾	59⅝
Average 10 years, 1879-88	58¾	60¼	60½	60⅝	60	60⅜	60
Average 27 years, 1852-78	57⅞	60¼	59½	59⅝	58⅝	59⅜	59
Average 37 years, 1852-88	58⅛	60¼	59¾	59⅝	59	59½	59¼
Total Straw, Chaff, &c., per Acre, Cwt.							
Present year, 1889	8	38¾	29¾	36½	36¾	34	26⅝
Average 10 years, 1879-88	8½	29¼	31⅝	39¾	41	37½	25¼
Average 27 years, 1852-78	11¼	32⅝	33¼	40⅝	41¾	38⅝	27⅛
Average 37 years, 1852-88	10⅝	31¾	33⅜	40¼	41½	38¼	27

* Equal to 27½ bushels, at 61 lb. per bushel.
† Equal to 26⅝ bushels, at 61 lb. per bushel.
‡ Equal to 26¾ bushels, at 61 lb. per bushel.
§ Equal to 26¼ bushels, at 61 lb. per bushel.

In writing upon the Wheat crop of last year, whilst adopting the actual result arrived at by the calculation of the produce of the selected plots, it was stated that the estimate more probably over-rated than under-rated the crop of the country. Exception was very generally taken to the estimate as being too high, but there is every reason to believe that our estimate of the home-crop of 1888 was very near the truth. This year we have much the same difficulty that there was last, that is, in each case the ripening and harvest weather greatly interfered with the realisation of the previous promise of the crop. Adopting, then, the figure which the calculation of the actual results indicates, our estimate of the yield of the country is 27½ bushels at the standard weight of 61 lb. per bushel. The area under the crop in the United Kingdom is returned at 2,540,720 acres, which is 122,716 acres less than in 1888. Taking the area of the 1889 crop, and a yield of 27½ bushels per acre, the gross produce will be about 8¾ million quarters (8,733,725); and deducting 2 bushels per acre for seed on the same area, the home-produce available for consumption will amount to a little over 8 million quarters (8,098,545). Taking the population for the current harvest-year at rather over 38 millions (38,140,830), the amount required for consumption, at 5·65 bushels per head, will be nearly 27 million quarters (26,936,961); and deducting from this the quantity available from the home-crop, there remains nearly 19 million quarters (18,838,416) to be provided by stocks and imports. Thus, although there is a rather higher estimated yield per acre this year than last, yet with a reduced area under the crop, the home-produce yields rather less for consumption this year; and with, in addition, an increased population, it results that the requirements from other sources will, according to the figures, be rather higher than in the preceding harvest-year. The estimate is certainly near enough for the guidance of those interested in knowing approximately what the requirements from foreign sources are likely to be. *J. B. Lawes, Rothamsted, Oct.* 23.

The English Fruit and Rose Company (Cranstons').—Messrs. Cranstons' famous nursery, at Hereford, is to be conducted as a limited liability concern, under the above title. The capital is £30,000, divided into shares of the value of £1 each, and 110 5 per cent. debentures of £100 each. The management will be in the hands of Mr. Cranston, and of Mr. W. J. Grant. The bankers are Lloyds, 72, Lombard Street, and the secretary, Mr. W. Beckett, Bartholomew House, Bank, London. Rose-growing and the culture of fruit trees will constitute the main features of the business.

Mr. Divers.—Our correspondent, Mr. Divers, of Ketton Hall Gardens, is about to proceed to Florida for a few weeks, to inspect an estate there. During his absence, Mr. John Tunnington will take charge of the gardens at Ketton.

Cape Town Botanic Garden.—The Director, Prof. MacOwan, has published a list of the bulbous and other plants cultivated for sale in the garden under his charge. The list is a very interesting one, and may be had from the Director of the Botanic Gardens, Cape Town.

Ealing and District Gardeners' Society.—The concert in aid of the Gardeners' Orphan Fund, announced to take place at the Victoria Hall, Ealing, on the 30th ult., was unavoidably postponed until November 20, owing to the local authorities not having secured a licence for music.

Catalogues.—Some few of our nurserymen add some useful information about the culture, soil, and manure suitable for various plants to the usual enumeration of names and prices. One of these is that just issued by Messrs. Ewing & Co., Havant, which is a novelty in its way.

Cuddapah Almonds.—Under the name of Cuddapah Almonds, the kernels of Buchanania latifolia are commonly used in India as we use Almonds. In an extract from a letter from Surgeon-General Bidie, published in the September number of the *Proceedings of the Agri-Horticultural Society of Madras*, it is stated that "When Sir M. E. Grant Duff visited Cuddapah, they were brought to his notice, and he, recognising their great merits as an after-dinner dainty, introduced them at Government House. In this way their use became more general at European tables. They have a delicate nutty

flavour, and the only defect that I know in them is, that they do not keep very well, being apt to get mouldy." This difficulty would seem to be one easily overcome by careful drying, as is done with Almonds, and, it properly dried, they might even become an article of export.

Ware and District Horticultural Mutual Improvement Society.—A society bearing the above title has been successfully started in Ware, which will be conducted under rules similar to those of the Chiswick Society, papers on various gardening topics being read at the meetings, which well be held fortnightly. Stanley Gray, Esq., is President, and James B. Riding, Honorary Secretary.

Scented Chrysanthemums.—I was much interested (writes "A Lover of Flowers," to the *Pall Mall Gazette* of Saturday last) in the article on Chrysanthemums which appeared in your paper a few days ago. But why does Mr. Holmes say that the flowers have no fragrance, and that the scent is from the foliage? Any one applying his nose to the first Chryssie blossom he meets, and also to its leaves, which are scentless, will find that the flower has a most pure, clean, aromatic scent—a smell with a good moral, as it were. Not a demoralising sweetness like that of a Gardenia or a Tuberose, nor an admonitory sharp medical odour, like Mint and Rue, and all the cowled and monastic order of Labiates, but a fresh, reviving, delicious perfume like no other flower. Possibly the best and very proudest of the Chrysanthemums are scentless, like some of the new Roses and Carnations, but I have a great variety, and they are all fragrant, though some much more so than others. I think the white are generally the sweetest. Mr. Holmes' remark strikes me as if it was said of a friend of mine, "He is a good fellow, but he is an idiot, and has no brains."

Vegetables from France.—We cull the following suggestive sentence from an article on the management of the Grand Hotel, London, published in the *Pall Mall Gazette* for October 26:—"I suppose many of your delicacies come from the foreign markets?" "Of course, we spare neither trouble nor expense to get the best of everything. For instance, the small and delicate Mushrooms are all bought in the Paris market. I suppose you know they are all grown in underground Paris. Large supplies of certain vegetables, again, are consigned daily from the same market; *Flageolets*, Asparagus, Tomatos—all the year round—Artichokes, and salad stuffs, like Lettuce and Endive. The French vegetables are the most delicate grown anywhere."

National Carnation and Auricula Societies (Southern Sections).—The name of Baron Schroder should be included among the patrons of these Societies. In making his financial statement, the Treasurer omitted to give the correct balance in favour of the Carnation Society: this should have been £4 17*s.* 11*d.*, and not £4 7*s.* 5*d.*

Ghent Chambre Syndicale.—At a meeting held on Monday, Oct. 14, the following awards were made:—

First-class Certificates.—To Carludovica elegans, from Mr. L. Desmet-Duvivier; to Adiantum versailliense and Nephrolepis rufescens tripinnatifida, from Mr. A. van Geert; to Spiræa astilboïdes floribunda, from Messrs. F. Desbois & Co.

John Ball.—Botany has sustained a severe loss in the death of this gentleman, in his seventy-second year, on the 21st ult. Mr. Ball will be best remembered by the general public as one of the founders of the Alpine Club, and for his publications relating to the Alps. Mr. Ball, however, did not confine himself to the athletic side of the matter, but was a keen student of the geology and flora of the Alps. In company with Sir Joseph Hooker and Mr. George Maw, he made a tour in Morocco and the Atlas Mountains, and the botanical results of the journey are summed up in a paper in the *Linnean Journal*, while the general story of the trip is contained in a most interesting volume. Lately, Mr. Ball made an extended tour round South America, and his remarks on the Patagonian flora were, we believe, sent to the Linnean Society shortly before his death, so that they have not yet been formally read. Since his excursion to South America, Mr. Ball has visited Teneriffe, so that his activity may be said to have been remarkable. In early life he sat in Parliament for an Irish borough, and filled some official appointment in the Ministry, but science and travel had greater attractions for him than politics.

A Wonderful Chrysanthemum.—In the *Tasmanian News* of July 16, we read: "That horticulturist, Mr. J. Bidencope, showed us to-day a Chrysanthemum bloom which outstrips anything hitherto reared in Hobart flower gardens. It measures 11⅛ inches in diameter, and was grown in the open air. It is of the kind known as 'Mrs. Frank Thompson,' and was grown from roots imported by Mr. Bidencope from the gardens of Messrs. H. Cannell & Sons, the well-known florists in England."

The Clyde Fatality.—In aid of the widows and families of the deceased, the following subscriptions have already been paid or promised:—

Second List, not yet published.

	£	s.	d.
Sir Trevor Lawrence, Bart., M.P., &c.	15	15	0
Chas. W. Lea, Esq.	5	0	0
Fredk. Wigan, Esq.	5	5	0
Mr. J. C. Stevens	5	5	0
Mr. Peacock	1	1	0
Mr. Cypher	1	1	0
"Sussex Friend"	1	1	0
Mr. H. G. Smyth	1	1	0
Mr. Thos. Manning	1	1	0
E. Harvey, Esq.	1	1	0
Mr. Tracey	0	10	6
Horace Egerton Green, Esq.	0	10	0
Mr. G. W. Cummins	0	5	0
Mr. C. Mason	0	5	0
Mr. Bilmy	0	5	0
G. W. C.	0	1	0
Mr. Kettle	0	2	6
Mr. Kingston	0	2	6
Florence	0	1	0
Bridgman Gapp, Esq.	2	2	0
W. J. Nutting, Esq.	2	2	0
Handel Cannon, Esq.	2	2	0
Misses L. and C. Dale	0	5	0
W. H. Mudford, Esq. (the *Standard*)	5	5	0
Mr. Tomalis	0	2	6
C. Young, Esq.	2	2	0
T. J. Smith, Esq.	5	0	0
Rev. R. Kinlesdie	2	2	0
A. J. Baker, Esq.	2	2	0
Mrs. Welborne Ellis	1	0	0
G. C. D.	0	10	6

The following list of subscriptions has been received by Mr. Horsman through Mr. William Thomson, Junr., Clovenfords:—

	£	s.	d.
Lady Tennant, The Glen	5	0	0
Mrs. Nelson, Salisbury Green	5	0	0
J. Coats, Junr., Esq., Paisley	5	0	0
R. Pullar, Esq., Perth	3	0	0
J. Wilson, Esq., Bantaskin	3	0	0
W. Thomson & Sons, Clovenfords	2		0
D. Tod, Esq., Eastwood Park	2	2	0
J. Gordon, Esq., Aikenhead	1	0	0
A. Curle, Esq., Priorwood	1	1	0
J. Watson, Esq., Earnock	1	0	0
Mr. Laing, Salisbury Green Gardens	1	0	0
Mr. Johnston, Renfrew	0	10	6
Mr. McLean, Finnart Gardens	0	7	6
G. Monro, Esq., Covent Garden	1	1	0
Mr. Geo. Ravenswood	0	5	0
Mr. Sharp, Freelands, Perth	0	5	0
Mr. McDonald, Tayside, Perth	0	5	0
Mr. Stratton, Balmedie	0	5	0
Mr. Grossart, Oswald Road	0	10	0
G. Douglas, Esq., Dalkeith	1	0	0
Collected by Dr. Paterson, Bridge of Allan	3	11	0

Cape of Good Hope.—The following regulations are published regarding the importation into the port of Cape Town of trees or plants (other than Grape Vines) and of tubers, roots, and bulbs from any place beyond the boundaries of the colony, viz.:—1. The importation into this colony from places beyond the boundaries thereof, of all Grape Vines or cuttings, or portions of Grape Vines, is absolutely prohibited. 2. The importation into the port of Cape Town of trees or plants (other than Grape Vines), and of tubers, roots, and bulbs from any place beyond the boundaries of this colony, will only be allowed under the following conditions:—

(*a*) No such trees or plants, tubers, roots, or bulbs with earth adhering thereto, or in pots or cases containing earth, with the exception of grafts packed in clay, and seed Potatos, shall be introduced into the port of Cape Town.

(*b*) A declaration from the consignor made before a magistrate or other local authority having the power of administering oaths, stating (1) that the articles proposed to be imported were taken from a field, garden, greenhouse, hot-house, or other place containing or, sic [no], vine plant or any portion thereof, either growing or stored; (2) the distance of the nearest vineyard, and whether such vineyard has at any time suffered, or is suffering from the Phylloxera vastatrix, must be produced by the consignee before such articles shall be allowed to be landed.

(*c*) All packages, cases, pots or coverings whatsoever containing trees, plants, tubers, roots, or bulbs shall be examined before landing, by an officer to be appointed for that purpose, and it shall be the duty of the consignee to open all such packages, cases, pots or coverings for the purpose of the examination aforesaid, and to afford every facility to the examining officer during his examination.

(*d*) On the examining officer being satisfied as to the absence of the Phylloxera vastatrix from the articles proposed to be imported, and as to the sufficiency of the declaration in section (*b*) above-mentioned, he shall give a certificate to that effect to the consignee, and without such certificate no such articles shall be landed.

(*e*) Should it appear to the examining officer that there are reasons for suspecting that such articles may harbour the Phylloxera vastatrix, he may, if he thinks fit, order the said articles to be disinfected in such manner as the Government may from time to time require.

(*f*) All packages, cases, pots, or coverings containing articles which shall be found to be infected with the Phylloxera vastatrix, together with the articles therein, shall be immediately destroyed.

(*g*) The Government does not hold itself liable for any loss or damage that may occur from the destruction of articles or the packages containing them, or from any process that may be considered necessary to discover the existence or otherwise of the Phylloxera vastatrix.

These regulations are subject to a penalty not exceeding £500 for any contravention of the same.

Notices of Books.

Diseases of Plants. By H. Marshall Ward, M.A., F.R.S., F.L.S. Romance of Science Series. Published by the Society for Promoting Christian Knowledge. London, 1889.

The student of botany fifty years ago devoted his energies almost exclusively to the collection of specimens; to him the formation of a "Hortus siccus" was the great object to be attained; while "life history" was as unfamiliar a term as "biology." During the latter half of the present century a complete change has come over the botanical world. The younger botanists now turn their attention more and more to the study of the phenomena of life, which their predecessors so much neglected. Perhaps the advent of the Potato disease in 1845 had as much as anything to do with the popularisation, so to speak, of the study of plant diseases. The past generation of botanists troubled themselves very little as to how a plant lived, still less how it died. In this country we are yet far behind our continental brethren in the study both of biology and vegetable pathology. This has arisen from a variety of causes, such as the want of proper laboratories for botanical work, the lack of students willing and able to take up such investigations, but to a very large extent it has been owing to an absence of books treating of these subjects in our own language.

Foremost amongst the workers in this field of study stands the author of the book before us, and we heartily congratulate him upon the excellent little manual of *Plant Diseases* he has just published. Mr. Marshall Ward has produced a very readable and a very instructive book, treating of several of the more common and typical plant diseases, in such a manner that anyone who wishes to do so can understand all the main points connected with their production, their development, and the best available means of combating them.

Although one might think otherwise from its title, only those diseases of plants caused by fungi are

treated of. The twelve chapters of which it consists are all of them worthy of careful perusal. They include the damping-off of seedlings caused by Pythium De Baryanum, Finger and Toe (Plasmodiophora brassicæ, the Potato disease, smut, bladder-plums, the Lily disease, ergot, the Hop disease, and the rust of Wheat. Each of these subjects is treated of thoroughly and clearly from a biological standpoint. In the chapter on the Potato disease, a subject which has for so many years been the battle-ground of investigators, and which is consequently a very thorny subject, the author has succeeded in keeping clear of partisanship, and has given a lucid and exact account of the disease. In spite of all the work that has been done, there are yet many points connected with the life-history of Phythophora infestans that would repay investigation; for instance, the duration of the vitality of the conidia under various degrees of dryness. The duration, too, of the vitality of the mycelium, both in the stems and in the tubers, is more taken for granted than demonstrated. We think the author has dismissed somewhat too summarily the possibility of checking the ravages of the disease upon the foliage by external remedies, such, for example, as the copper-salts, of which French mycologists speak so highly.

The title of Chapter XI., "The Rust of Wheat," is not happily chosen, as in this country the rust stage of the ordinary Wheat mildew, of which the chapter treats, is not by any means so prominent a phase as botanists would have us believe.

The Lily disease is, of course, treated by a masterhand, and for the rest of the book we can find nothing but praise.

BERLIN.

On October 25, Professor Garcke, the author of the *Flora von Deutschland*, celebrated his seventieth birthday, and on the occasion he was created honorary member of the "Verein Zur Beforderung des Gartenbaues in den Preussischen Staaten."

The plan of the water-fall for the Victoria park is now finished. Five metres below the platform of the Kreuzberg a basin is to be made which will furnish the water for the great fall of 75 metres. This consists of two parts; the upper and larger one is a true imitation of the Lackenfall; the lower one, of the Hainfall, in the Riesengebirge. At the bottom of the fall there will be a basin, from which the water running to the left will form a small lake, 10 metres beneath. This fall will be so situate that it can be seen from a great distance. It faces down Grossbeerenstrasse, and all along the fall are to be promenades, which meet under the fall at the foot of the Kreuzberg. The western part of the park will be opened to the public the next summer, and the remaining portion in the autumn.

Gardeners in the different nurseries are suggesting the organisation of a strike next year; and, indeed, their domestic conditions are bad. Work begins in summer at 4 or 5 o'clock, and ends at 8. During the winter months the gardener has to work from 6 to 8. Generally, he gets a house and 40 to 50 marks [shillings] monthly! But there are nurseries—and this is especially amongst the larger ones—where the gardener receives only 30 marks a month, without a house. We know one of the largest Berlin nurseries where the gardeners' rooms are over a stable. Here the men sleep, ten to twelve in one room, and, as there is no accommodation for so many beds, some of the younger men have to sleep two in a bed.

Fruit Markets.

A new mode of marketing fruit is commanding the attention of consumers in Germany, which has for its object the bringing together of the consumer and the producer. It is carried out in the following manner: Fairly selected samples of different fruits of from six to eight examples each, are brought to market, and put on plates together with a ticket, on which is written the name of the fruit, that of the seller, the quality and the quantity of the fruit, which is saleable, the price per kilog., and per 100 kilog., the time of delivery, and the smallest quantity which can be sold. The buyer, after selecting the required quantity of fruit, places an order ticket on the plate, giving his name and address and the quantity required. The fruit so ordered is delivered to the buyer through the market agencies, so that these should have the power to compel adherence to the bargain. The seller delivers to the market committee, and these to the buyer. If the seller does not send fruit equal to sample, he is for the future forbidden the market. The market fees amount in all to 12 per cent This method of selling began in Oldesloe, and is now becoming very common in the country. Figures are always eloquent, and we find that in 1884, eight sellers sold 620 kilogs. fruit for the sum of 141 marks; 1885, seventeen sellers sold 2700 kilogs. for the sum of 482 m.; 1886, at two markets, seventy-two sellers disposed of 6234 kilogs. for 1091 m.; 1887, at two markets, ninety-three sellers sold 10,381 kilogs.; 1888, two markets, ninety-eight sellers sold 7532 kilogs.; 1889, three markets, over one hundred sellers sold 44,000 kilogs.

The advantages of the system for the fruit-grower are already seen. He must also send fruit to the customer that is sound. He is obliged to send to market his best fruit, and the bulk must be according to the sample, so that he must likewise strive to grow only fine fruit; and the better prices obtained for the fruit induces more extended and better cultivation. *Our Berlin Correspondent.*

CONTINENTAL NOVELTIES.

AQUILEGIA FLABELLATA NANA ALBA.

A very interesting floriferous dwarf form of Aquilegia, with a quite compact yet elegant habit. The flowers are of a large size, pure white, and are carried in great profusion well above the foliage, which has more substance than in any other of the genus. The plant is an early bloomer, and is recommended for forcing for cut blooms.

Scabiosa major, fl.-pl., Snowball (Schneeball).

The flowers are of a glistening white, and quite full to the centre, forming a globular shape. The plant flowers earlier, in greater profusion, and for a longer period, than other species of Scabious. The habit is strong and bush-like, and the foliage of a lively green, remaining fresh till the winter. By pot-culture in a greenhouse the plant will continue to flower throughout the winter.

Tropæolum nanum (Tom Thumb Aurora).

A novelty of 1888, and particularly valuable for beds and borders, owing to its long-continued flowering properties and effective colour. The plant continues to flower abundantly till killed by frost. *V. Doppleb's List of Novelties, Erfurt.*

KEW NOTES.

The following is a list of the Orchids in flower at Kew on October 27, 1889:—Angræcum bilobum var. Kirkii, A. odoratissimum; Bletia verecunda, Bulbophyllum Careyanum, B. imbricatum; Calanthe pleiochroma, C. Veitchii, C. veratrifolia; Cattleya Bowringiana, Cirrhopetalum Wallichii, Cochlioda sanguinea, Cœlogyne fimbriata, C. fuliginosa, C. (Pleione) lagenaria, C. (P.) maculata, C. ocellata, C. rigida, C. (Pleione) Wallichii; Cymbidium giganteum, C. pendulum; Cyperorchis elegans, Cypripedium cardinale, C. conchiferum, C. Harrisianum, C. insigne, C. Io, C. javanicum, C. (Selenip.) longifolium, C. porphyreum, C. purpuratum, C. (Selenip.) Roezlii, C. (S.) Schlimii, C. (S.) Sedeni, C. Spicerianum; Cyrtopodium rufum, Epipendrum auritum, E. equitans, E. ramosum, E. sceptrum, E. variegatum var. coriaceum; Grobya galeata, Isochilus linearis, Lælia Dormaniana, L. Perrini; Liparis cuneilabris, L. longipes var. spathulata; Masdevallia cucullata, M. gibberosa, M. maculata, M. ochthodes, M. platyrhachis; Maxillaria crassifolia, M. meleagris, M. puncto-striata, M. variabilis var. lutea, M. v. var. media; Odontoglossum constrictum, O. crispum, O. grande; Oncidium crispum, O. excavatum, O. Lanceanum, O. tigrinum, Phaius bicolor, P. callosus, Phalænopsis Lowii; Pleurothallis Barberiana, P. cardiocrepis, P. pulchella, P. velaticaulis; Saccolabium gemmatum, Sigmatostalix radicans, Sophronitis cernua, S. grandiflora var. rosea; Stelis discolor, Stenoglottis fimbriata, Spathoglottis Vieillardii, Trichocentrum fuscum, Trichopilia fragrans var. nobilis, Trichosma suavis, Vanda cærulea, Zygopetalum brachypetalum, Z. (Promenæa) Rollisoni.

CHRYSANTHEMUMS ABOUT TOWN.

These flowers are now to be found in the florists shops and shows at so early a date, compared with what was the case a few years ago, that the fixing of a date for the incoming of the flower becomes a matter of difficulty. Japanese varieties have been seen for quite a month past, and some of the earliest varieties of this section are going over. Incurveds are somewhat late, owing, it is alleged, to the heat of late summer having promoted great maturity in the wood, which may, indeed, have a substratum of truth in it, for we find that the American growers in the Northern States grow their plants under glass the whole of the summer, and thus have them completely under control, and they find it to be necessary to employ shading to minimise the ardency of the sun's rays. Our growers should take a hint, in case the late summer of 1889 should be exceptionably warm.

The Parks.

Victoria Park.—Perhaps the largest and best of all the displays to which admission is free is to be seen here and at Finsbury Park. Mr. Gibson has an advantage over his colleagues at Finsbury and Southwark, in having had a large house erected for these plants. It is a rather lofty, span-roofed structure of wood and iron, 100 feet long by 25 feet wide. It may be said that generally the plants had a robust, healthy look about them, and were well furnished with foliage, although we should suppose that this would not remain on them for any length of time; the crowding, want of light, and the foggy sulphurous air of that part of the town at this time of the year, will prove too much for them. The finest varieties are to be found in well-bloomed condition. Amongst newer ones noticed were Lady T. Lawrence, a white Japanese; Madame La Marquise de Mun, Madame de Sevin, Mrs. J. Laing, Coquette de Castile, Jeanne Marty, Mons. Tarin, &c.; 2000 plants in 200 varieties were accommodated in the house.

Finsbury Park.—This year's display of blooms is characterised by fine substance, vigour, and clear bright colours, which are very pleasing to look upon. The house, which is 100 feet in length, has a bank of plants in the centre, with a walk on each side, as was the case last year. There are about 16,000 plants at present in full bloom. This year there are not so many novelties as we have seen on former occasions, but the best of the older favourites may be seen well represented. There are richly-coloured clumps of Jardin des Plantes, Empress of India, Golden Empress, Queen of England, Barbara, Lord Alcester, G. Glenny, and Mr. Bunn are among the best represented of the incurved blooms. Of Japanese varieties, Madame J. Laing shows some large blooms; E. Molyneux fully maintains all that has been said in its favour, the deep rich colouring being highly attractive; Avalanche, Madame de Sevin, Belle Paule, W. Holmes, Criterion, Comte de Germiny, and Ed. Audigier, with the pretty stiff pompon Mdlle. Elise Dordan; and of reflexed, the old Chevalier Domage, King of the Crimsons, and Cullingfordi are all well shown. Among the more recent introductions, J. Elliott, a Japanese bloom of deep port-wine colour, with silvery-crimson

reverse, is a very fine thing, and will probably become a favourite; it was hardly in full character at the park, as this is its first year, and we are unable to say more of it just now. One flower had quilled and another flat petals. Garnea, a reflexed Japanese, golden colour, with brown flushes, is also distinct; others are E. Oakley, fluted Japanese, bright bronzy-yellow, but not of great merit. Royal Aquarium, reflexed Japanese, white, with a pink flush; a good solid flower, with long petals. Puritan, another reflexed Japanese, having broad petals, pale pink, with a lighter centre, incurved tips; pleasing colour. Alice Bird, a reflexed Japanese, with long petals, and large, good, clear yellow flowers, is a worthy variety, which must find favour. Samuel Morley, reflexed Japanese, one of last year's novelties, shows a strange, dull mixture of lake and madder-brown, with a golden reverse; the flower is distinct in its colouring, but not large. Incurved novelties are of rare occurrence, and it is pleasing to observe that Violet Tomlin, dull rose, with white tips to the petals, good form, and H. Shoesmith, a bronze sport from Mr. Bunn, are both showing well. There were, too, plants of Clytie, in naturally-grown specimens, only 2½ feet in height, masses of bloom, and they make good decorative plants, and are also useful for edging groups. This year's display is creditable to all concerned, and Mr. Maudlin is to be congratulated on his success.

Southwark Park.—This is the second year that a display of Chrysanthemums has been held in this Park, and when the surroundings are taken into consideration, and allowance made for the smoke-laden atmosphere, it must be allowed that Mr. Bush had made a highly creditable show. The house is a span roof of about 100×25 feet, and contains some 1500 plants of popular and well-known varieties, including some of the older and slightly neglected. The best represented section, both in number and quality, is the Japanese; some plants of Madame de Sevin, Val d'Andorre, W. Holmes, Elaine, Joseph Mahood, Ed. Molyneux, and the old Jane Salter. Of Incurved, the bright yellow Gloria Mundi, Refulgence, and Barbara, with Mr. Bunn, G. Glenny, &c., were well represented. Of the Japanese Anemone, Sœur Dorothée Souillé, there were some fine-sized blooms. There were numerous other varieties of all sections, but the foregoing were the most conspicuous.

The Inner Temple.—The display of these flowers, to which the Benchers of the Inner Temple kindly allow the public free access, is now drawing many visitors. Mr. Newton's best blooms are Japanese, and embrace good examples of Mrs. J. Wright, and of Elaine, Triomphante, Madame de Sevin, W. Holmes, Comte de Germiny, Val d'Andorre, J. Salter, &c., there are also representative blooms. The incurved section is not so satisfactorily shown, but still there are some examples of creditable cultivation in such well known sorts as Lord Alcester, Golden and White Beverley, Refulgence, and Fingal.

Nurseries.

Messrs. J. Veitch and Son's.—At this nursery Chrysanthemums form a nice display in a large span-house. They are not crowded together; the plants are well bloomed, and the house is very gay, and will so continue for some weeks longer. Specimens of the following were in good form:—Madame de Sevin, lovely magenta; Madame Fabre, reflexed form, of rosy-lilac tint; Stanstead Surprise, crimson; Avalanche, still one of the best whites; Marthe Pigny, also white—a strong petal; Brise du Martin, bright flesh; Thorpe Junior, Anemone centre, and bright yellow in colour; Mabel Douglas, a small flower, crimson, with florets much reflexed; Sunflower, a gorgeous yellow, well described by its name; Madame Lacroix, large white; Madame Louise Leroy, white, very pure from its opacity of florets; La Marguerite, Anemone-flowered, of rich lilac colour: a small flower; President Hyde, lemon-yellow, very bright and remarkable; Angèle Amiel, with fluted florets, white, the lower part of the florets of a lilac tinge; Sarah Owen, orange-cinnamon, or as fanciers call the colour, "old gold:" the reverse of the florets yellow; Coquette de Castile, straight florets, which are rolled, not twisted, and look like quills: it is of a blush hue. The above belong to the Japanese section without exception. Few incurved flowers were noticed, these being rather late in opening this year, and amongst this section were few, if any, novelties.

Mr. Thomas Ware's Nursery.—A very good lot of plants may be found at Mr. Ware's, Hale Farm Nursery, Tottenham. These are arranged in a long span-house, and are seen by the observer from two opposite sides. Almost every good variety is to be found in the collection, including the novelty, Mrs. Alpheus Hardy, a white incurved Japanese, received from America, but sent there from Japan. The broad florets are furnished with hair-like protuberances on the reverse side, but which, owing to the upward curve of the florets, show, as it were, on the upper side. It is dissimilar to anything hitherto observed in Chrysanthemums, but whether the hairs are desirable adjuncts to the flower is another matter. The plant is a strong grower, with large, leathery, slightly crumpled foliage. Many of the Chrysanthemum blooms observed were quite equal to the demands of the exhibition table. It was noticeable how many plants of Mary Anderson were grown, and how beautifully their flowers relieved the heaviness of the larger flowers, and gave brightness to the collection. It is a single Daisy-like flower, 2½ inches in diameter, white, with a yellow disc. An abundant bloomer, and fine for cutting.

Useful Inventions.

THE "UNCLE SAM" RADIATOR.

This recently-introduced invention promises to be one of much service to amateurs with small greenhouses who desire to give their plants the benefit of a little heat in winter. The construction of the "Uncle Sam" Radiator and Propagator is sufficiently well shown in the illustration (fig. 71), and a reference to the section shows how the heat from an oil-lamp, entering at the bottom, is conducted through passages to a central chamber, all of which are surrounded by water, and the heated air, therefore, has a large surface to act upon. The air then passes on over the top of the water, and comes out at the opening on the top of the apparatus, through which the steam from the water also escapes into the atmosphere of the house, thus affording a moist warm surrounding for the plants. On the top of the radiator, which is flat, trays for the propagation of plants may be placed, as is seen in the illustration. We have seen one of these radiators in use, and it seemed to fulfil its purpose efficiently. Mr. S. Deards, Victoria Works, Harlow, Essex, is the inventor and patentee.

The Alpine Garden.

PRIMULA OBCONICA.

The persistence with which this species flowers is something remarkable. On the occasion of the National Auricula Society's Show at South Kensington, on April last, I exhibited a plant of P. obconica, bearing three or four trusses of bloom, the flowers having commenced to expand early in March. When I brought the plant from the show, I stood it in an earthenware pan, on a shelf in the most open and sunniest part of a coolhouse facing the south, and I kept about three-quarters of an inch of water in the pan, and frequently, during fine weather, poured water over the leaves. The plant increased in size, threw up many flower-stems, and has continued to flower ever since, and is now a picture of floral beauty. I think that this species is more of a moisture-loving plant than is generally supposed. I have seen poor examples of it, and often thought they were in low condition owing to lack of water. The variety I have is of a very delicate mauve colour, with a slight purple ring round the eye. *R. D.*

Cultural Memoranda.

PHYLLANTHUS NIVOSUS VARIEGATUS.

This very effective decorative subject is of a slender, erect-growing habit, with Acacia-like leaves, which are variegated. Young plants of it grown in 48's, and intermixed with Crotons, Dracænas, Pandanus Veitchii, Maidenhair Fern, small Palms, &c., add greatly to the effects produced by these handsome foliage plants. Cuttings of the young shoots strike readily in small pots filled with light soil, and surfaced with silver sand, placed in heat and kept close for ten days or a fortnight. They should then be potted off singly into thumbs, using three-parts light loam, and one of leaf-mould, with a little sand. Place the plants on a shelf near to the glass in the stove. The roots of old plants, where young top-growths are not plentiful, may be cut into 3-inch pieces, and be treated as cuttings. *H. W. W.*

Acalypha tricolor.

This stove shrub is of free growth, and its leaves assume fine tints of reddish-green, coppery-red, and bright red when grown in a position of full sunlight. The tops of the young shoots may be inserted singly in properly crocked 3-inch pots filled with peaty soil, surfaced with sand, watered, plunged to the rim in a hotbed, and covered with a bell-glass, or a *cloche* or handlight. When rooted they should then be placed near the glass, to insure a sturdy growth and well-coloured leaves. Stop the shoots once or twice, and repot as may be required. Plants growing in 48's and 32's are of serviceable sizes for room and dinner-table decoration, and larger sizes are good to fill vases. The Acalypha has a good constitution, and on that account may be recommended to the notice of any one who has a warm house and a weakness for plants that are easily managed. *H. W. Ward.*

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

PEACH LEAVES.—You have been good enough to notice and give me the name of the fungus affecting the Peach and Nectarine leaves I sent you, but I should like to know more about it and its probable origin, and whether it has any connection, or is the same as that on Roses or Plums, the latter of which have become quite defoliated from its attacks this season. We have had it in our Peach-house for years, but this year it has been worse than ever, and as I have tried all I can to get rid of it, and have failed, I shall be glad to hear if any of your correspondents have been troubled with it, or know of a remedy. I have burned sulphur in the house during winter, while the trees were dormant, thinking that the fumes would destroy any germs lurking, and have had the trees all dressed over with nicotine-soap, sulphur and clay mixed, the house painted, borders limed, and all to no purpose, as every year, about August, the spot shows again, and spreads at a rapid rate over the foliage. The effect is that the leaves soon begin to fall, but the mischief does not end there, as in spring the buds drop, and those that open fail to set in the free way they should, and many of those that appear to set do not swell or get through the stoning. Is there anything the trees can be syringed with that is likely to stop or kill the fungus without injuring the leaves or fruit? [Try a solution of sulphate of copper, it may palliate if it cannot cure. Ed.]—or will the removal of the lights for a summer do any good? I have thought of trying this exposure, as

trees on walls in the open escape, and do exceedingly well. *J. Sheppard.*

BARHAM COURT FRUIT.—It is a pleasure at any time of the year to visit these famous fruit gardens, and especially at this season, when the fruit-room is filled with its autumn and winter stores. I have for several years made it a practice to visit Mr. Woodward about this time, but never before have I found the fruit so fine as this year. The Apples, the remembrance of which will be fresh in the minds of those who saw them at the recent fruit show at the Crystal Palace, are of such great merit, that one might easily come to the conclusion that they were grown, not in the open air, but under glass, although in no instance was this done. Some of the trees which carried these fine specimen fruits have been regrafted only a few years past by Mr. Woodward. It may be of interest to your readers to jot down the weight of a few dishes which were shown on the above-named occasion :—Beurré Diel, six fruits, 7 lb. 4 oz.—the heaviest fruit, 1 lb. 7 oz.; the dish of Pitmaston Duchesse weighed 9 lb. 2 oz. Of Apples, the dish of Belle Dubois, 8 lb. 1 oz.—the heaviest fruit, 1 lb. 5 oz.; dish of Warner's King, 7 lb. 10 oz.—the heaviest fruit, 1 lb. 5 oz.; a dish of Washington, 5 lb. 14 oz. *Visitor.*

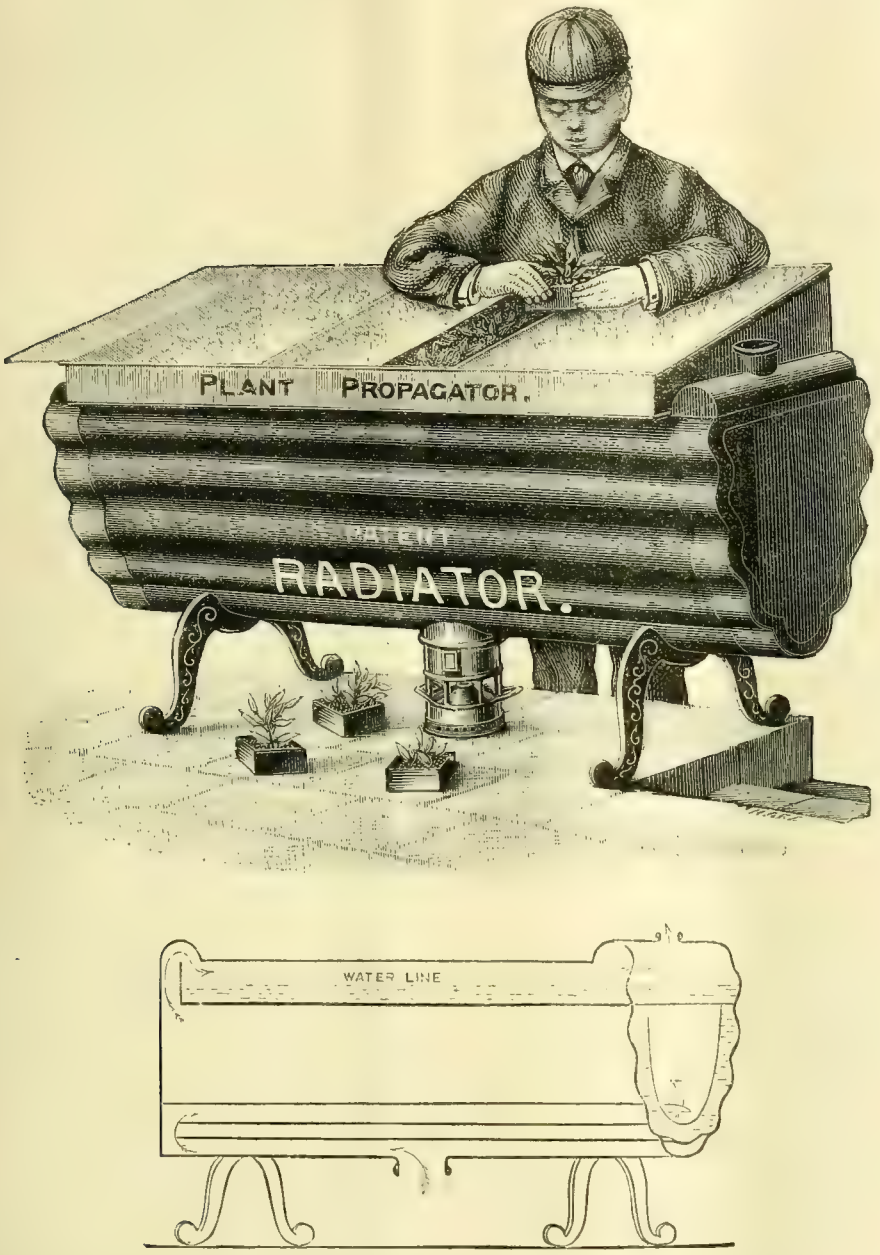


Fig. 71.—THE "UNCLE SAM" RADIATOR AND PROPAGATOR. (SEE P. 504.)

PRESERVING APPLES.—I can assure your correspondent, "A. D.," that he may safely pit these fruits as he would Potatos. My father used to pit Apples in Lincolnshire over thirty years ago, and I have helped to put them into the pits in the autumn, and take them out again in the spring. They were then as fresh and as heavy as if they had just been taken from the trees. The method followed was to level a piece of ground, place on it some clean Wheat straw, and make up a ridge of fresh-gathered Apples, not too high or too wide. This was covered with Wheat straw to keep the soil from the fruit, and 8 inches of soil was put over the straw, patting it firmly, the whole being thatched with straw to keep out moisture and maintain the soil at an even temperature. I have never pitted Pears, but I am sure it would answer for them too. Where only a few Pears have to be stored, put them in a clean flower-pot and turn the pot on the earth. *W. H., Epsom.*

POLYGONUM VACCINIFOLIUM.—I do not often see Polygonum vaccinifolium in gardens; we have in the cottage garden a mound bed about 6 yards long, and 3 yards wide, now covered with the pretty pink flowers; its late blooming is valuable, and it stands rough weather well. I have to-day picked about the last flowers of Lilium speciosum; the open flowers are somewhat battered by wind and rain, but the buds come out well in water, and in one of Powell's tall green glass vases have a very good effect on the dinner table. *George F. Wilson.*

TURF WALKS IN KITCHEN GARDENS.—I can fully endorse all that "A. D." (p. 448) says in favour of turf-walks for kitchen gardens, as we have them here up the middle, across and around, but not of the width of those at Hackwood; and besides their pleasant appearance, as compared with gravel, they are of far less trouble to keep, as all the labour they involve is the mowing by machine once a week, and an occasional trimming of the edges, which maintain them in good trim all the season. Everyone who has had anything to do with gravel-paths knows what a trouble they are to keep free from weeds, and the time taken up in eradicating the latter; besides which there is much more rolling and sweeping required with gravel than with grass, and if not attended to in these respects the surface is soon out of order. By the sides of the centre walk here we have borders for flowers, and these are backed by iron arches and standards for Roses, Honeysuckles, and Clematis, which shut out the vegetable quarters, and always look well. Not only is grass or turf of far better appearance and less trouble in kitchen gardens, but it is much more adapted for shrubbery or outer boundary walks than gravel, which in such places is generally untidy, and even if well kept, looks hot in the summer, and is not half so pleasant to use. *J. S.*

—— I quite like the idea of grass walks in the kitchen garden, and would discard gravel for the principal ones, although it has manifest advantages over turf, and one of these is dryness at all times, if the drainage has been attended to, and there are grated catch pits at intervals. Ladies with a natural *penchant* for wearing the thinnest of shoes indoors and out, may walk at almost all times on good gravel, not so on grass; moreover, Mr. Bunyard, in an article in your columns sometime ago, called attention to the danger there is to fruit trees in grass-covered orchards from the covert afforded by the same to certain caterpillars infesting trees. At Hackwood there are, I suppose, no edgings of Box—also a saving in the cost of maintenance, which taken in conjunction with the lesser labour taken to mow the turf, as compared with hand-weeding, hoeing, salting, &c., amounts to a considerable sum saved in the year. When John Green, the kitchen man, who goes into the vegetable quarters in search of the finest heads of Cauliflowers or Cabbages, or a dish of Peas, after rain, the 6 lb. of rich mud hanging on each of his shoes when he comes out—and seldom scraped off, although the scraper is oftentimes under his very nose—are deposited as a manurial dressing on the turf-path, and are not out of place; but on the gravel path this same amount of mud would be an eyesore and a fruitful source of weediness in the near future. Do not the slugs, which are a trouble to the gardener who has Box for an edging plant, hide by day by the thousand in the turf, only to come out in the twilight, like robbers that they are, and play havoc with many things? Some one with experience of turf kindly reply. *A Man in Doubt.*

WANT OF SUCCESS WITH ODONTOGLOSSUMS.—It has always been known to be difficult for a doctor to prescribe for a patient he has not seen, and a like difficulty is experienced by those who are asked to say what is wrong with the treatment of plants they have not seen in their houses. I have known syringing, or watering overhead, keep plants in bad condition in a manner altogether unaccountable to those who had the charge of them. Your correspondent "L. C." (p. 476), does not describe the kind of staging he places his plants on. The best—for small houses especially—is to have a close, flat staging for holding shell gravel or other material capable of retaining moisture; this staging should not be placed close to the walls, but an opening of 1 inch wide should be left at the back to allow the air to pass. An open wood-work staging should be placed a few inches above that one, and on it the plants should be placed. A very cheap and sufficiently good open staging can be made by any one by nailing battens to cross-pieces, so as to form as it were a number of trellises, each 9 or 10 inches in width; these can be painted, or, better still, whitewashed, and by being placed on bricks, staging to fit any where, and of adjustable height, can be had. I have known houses in which cool Orchids refused to grow well on ordinary flat staging, become noted for their good culture when placed on the lattice stages,

and which are all the more convenient when made as I suggest, as at cleaning time they can be taken out in pieces and washed clean. *James O'Brien.*

PLURALITY IN DOUBLE PERENNIAL SUNFLOWERS.—Your correspondent, "J.," in *Gardeners' Chronicle*, p. 445, is evidently astray if he thinks of confusing the plant sent from Ireland as Soleil d'Or with the grandiplenus sport that appears in many gardens from the Anemone-flowered one so common in English nurseries, and vended as Helianthus multiflorus plenus. This Irish form has flowered at Kew, Chiswick, Tottenham, Chester, Langport, Swanley, York. A note in condemnation or approval, through the pages of the horticultural press from such sources should at once be given, so that we may fully establish or nullify the idea as to whether nurserymen will be warranted for the future in cataloguing a "plural" to the term. For my part, I am fully satisfied from private experiment that there are not alone two, but probably three or more forms. And why not with Sunflowers as with Chrysanthemums, Dahlias, Zinnias, Asters, Anemones, &c. Mr. Barron could certainly tell us of the plant as to its behaviour at Chiswick. It should also be interesting to know how the Anemone-flowered variety so fully established itself as the type in England, while the fixed, and most constant "quilled" flower remained secluded in the South of Ireland. The one always reverting to single, or producing for a season the inconstant grandiflorus or grandiplenus flowers so confusing not only to "J." but to a great many others. I suppose we must admit the reality of what remains fixed and unfixed as "sports" in plants, producing double flowers in Chrysanthemums. If so, the question is very interesting as to how the fixity referred to remains so unsettled with the one, and under the most starved and unfavourable conditions characteristic of the other—"like the sun whose rays the gazer strike, and like the sun that shines on all alike." *Soleil d'Or.*

CELOSIA PYRAMIDALIS PLUMOSA.—A most praiseworthy lot of this showy plant is just now in flower at Cuerdon Hall Gardens, Preston. Mr. W. P. Roberts has managed to secure a strain having flowers of a very bright rosy-purple, whilst the trusses are of an unusual size and density. The seeds were sown during March, and the plants brought on in warm frames, where they were not liable to be drawn. They were kept growing well during the summer, and now they average 3 feet in height, many of the plants having a dozen or more stems and shoots, each surmounted with a showy inflorescence. This is a most desirable plant, lasting, as it does, long in beauty, and having an effect different to that produced by any other plant, and keeping in good order a long time after being cut, and withal not difficult to manage. The chief points in its culture is that the young plants receive no check, are not allowed to become pot-bound, and that greenfly is not permitted to settle upon them. Where Cockscombs are well done, these may reasonably be expected to succeed, the great thing being the obtaining of the true plumosa type. *W. S.*

LYCIUM BARBARUM.—I recently met with a plant of this creeping plant, which is also known under the old familiar name of "the Duke of Argyll's tea tree," growing in a warm corner of a garden in one of the environs of Birmingham, and loaded with scarlet berries. I have known this climbing shrub for over forty years, but do not recollect ever seeing it well-berried before. It literally hung down with handsome drooping panicles of berries, which gave the plant a very ornamental appearance. Is this a common occurrence in more southern districts of England? *Enquirer.* [It is by no means a rare occurrence. ED.]

AUTUMNAL TINTS IN THE GARDEN.—Although we have had violent gales, and with heavy rains, preceded and followed by frosts, the tints on the leaves of trees are very beautiful, but I fear this arboreal beauty will soon have departed with the tree defoliation. The trees that put on the finest colouring are the Horse Chestnuts, Wych Elms, Beech, Oak, Sycamore, and wild Cherry, the latter being almost crimson where they are in sheltered sunny positions, showing off in striking contrast with the foliage of Elms, Chestnuts, and Sycamores, which are bright yellow. The warm brown and orange tints of the Oaks and Beeches by contrast help to show off the colours of the others. Pear leaves in gardens are mostly crimson in their hues, and the gradual maturing of the foliage must be much in favour of the full development of the buds, so that, in addition to all this beauty, now we may look forward to good results next year. For pleasure grounds, where there are old trees, or such as are thin and spare of branches, there is nothing like the old Virginian Creeper for affording rich colouring, and the same on buildings; but there appear to be varieties of this plant which differ much in their autumn leaf-tints. This may be owing to position perhaps, or to soil, which may and do have something to do with it, for where plants of it are a bit starved or dry at the root, the leaf markings are more vivid than on those that grow stronger. I have just seen a striking proof of this in one of these plants rambling by the side of a railway arch, and mixed up with Ivy, the two battling together for place, and the effect of the two blended colours is very charming. *J. S.*

BIGNONIA VENUSTA.—I know of no climber at this period of the year which makes such a grand display of bloom as the above. Our plant is growing in an intermediate-house, trained to wires which ascend from the bottom of the house, and pass along the roof. The branches are allowed to hang down a distance of about 6 feet, and are tied so as to hang about a foot apart. It grows in a mixture of three-parts loam to one part leaf-soil, with a little silver-sand and charcoal to keep it open. Like most climbers, it appears to flower best when not restricted too much, but allowed to hang down; and the flowers come much more freely under this treatment than when the shoots are closely trained. I counted the other day on one branch alone 400 expanded blooms, with others still to open, and the sight is one not easily forgotten. The plant deserves a place in every collection. *G. H. M.*

POURTHIAEA (ROSACEÆ) VILLOSA.—I send you a few leaves of Pourthiaea villosa to show what a glorious autumn-tinted shrub it is. It will have to play an important part in the tree and shrub arrangements of the future. The profusion of its scarlet fruits also adds much to the general brilliancy, and these remain after the leaves have fallen. *T. Smith, Daisy Hill Nursery, Newry.*

PRIMULA SINENSIS "PRINCESS LOUISE."—A quantity of plants of this very fine variety may now be seen in Messrs. Thomson's, Sparkhill Nurseries, Birmingham. It is a sturdy grower, with stout fleshy foliage, and the flowers are thrown well above the foliage, so that in habit, as well as in the size, substance, and beauty of the flower, it is perfection. These plants are in large 48-pots, and in the best state of cultivation. Flowers are sent herewith to give an idea of their size. [Excellent. ED.] In the same house are several plants of the lovely Primula floribunda in full bloom, from seed sown during March last in gentle heat, and grown on in a cool house or frame, but from October onwards they are kept in a warm house with plenty of ventilation to avoid damping. The soil used is such as the Pelargoniums are grown in. *Primula.*

SAMBUCUS RACEMOSUS.—The red-fruited Elder is common in the woods at Boynton, and comes up there self-sown, just as does the common Elder. *G. W. Strickland.*

FORKING OF FERN FRONDS.—In your last issue it is stated that Mr. B. Rimelin attributes the forking in the fronds of Ferns to the action of a parasitic fungus. From my experience of the growth of Ferns in their natural wild state, and when under cover in pots, I should say that this is decidedly erroneous, and I am led to the conclusion that the forked ferns are of a distinct nature to the plain ones, although of the same family. On the limestone moors of the North of England, the Scolopendrium Fern grows freely, and by diligent search you can here and there find specimens of the forked Ferns, but they are well looked after, hence they are rare. Some thirty years ago, I went out with a collector who tried to explain to me what he wanted. In a short time I was under the impression I had found one, and took it to my friend, but he stated that the break at the end of the leaf was caused by some parasite. By-and-by the collector himself found a genuine one. The end of the frond was divided into two distinct portions, each portion had two segments, with a vein in the centre, the latter being a continuation of the vein running up the centre of the frond, and radiating from it to the two breaks at the end. On seeing this, I had no trouble in identifying a proper forked frond in the future. He urged me to look carefully around the places where one genuine fork was found, as it was more than possible there would be others, grown from the spores of forked Ferns. One of these, with a single frond forked into two, I took home and potted. I had it in my possession for some fifteen years, and never during that time did it grow a plain frond again. Some of the ends had many forks, large clusters, yet each break had the two segments and the vein continued from the centre vein running through them. It is seldom you find one of these Ferns in the wild state bearing more than one or two forked fronds. Some of these, when transplanted and potted, will never again throw a forked frond; others, as in the instance I have cited, come in the future with every frond forked. I am unable to explain the reason of this; I only know that I have found it so in my practice of Fern growing during the past thirty years. I enclose you a fork from a Scolopendrium which I found growing wild, and potted to-day. It will be seen that the growth is too natural to ascribe it to parasitic influence. *J. R. R., Ulverstone.* [The tip of the frond was perfectly forked in the manner described by our correspondent. ED.]

FLORAL COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY.—Touching the proposal to change the hour of meeting from 11 to 12 o'clock, I hope every member will readily give his assent, even if it should slightly inconvenience him, as I believe it to be a move in the right direction, and in the interest of the Society itself; but, except in the case of those members who practically live in London, the change would, I feel sure, prove the reverse of inconvenient, especially to country members, who, under the present arrangement, have to start at a very early hour indeed—such as would rather damp the ardour of some of the Metropolitan members. Moreover, the present early hour of meeting is quite unnecessary, as, on an average of meetings, the business is got through in little more than one hour. Another hour might be occupied in inspecting the exhibits, then the next two hours (that is till 3 o'clock, the time when the lectures are given), are generally frittered away, doing little or nothing. Many get wearied of waiting and take their departure, which, in all probability, tends to sensibly reduce the audience of the lecturer. This might be somewhat remedied by not meeting till 12 o'clock, but I am of the opinion that 1 o'clock would be better in every way (as I have before written, see p. 498, vol. iii., 3rd series of *Gardeners' Chronicle*). It would enable intending exhibitors from a distance to get their things forwarded in time for adjudication—when despatched on the previous evening from any part of the kingdom. And this to me seems a much more cogent reason for altering the hour than that of the convenience of the committeemen—indeed, without exhibits their presence at Westminster would not be required. Further, if the Royal Horticultural Society wishes to court the support of the country, it must give every facility to enable its provincial supporters to take part in its meetings in which, at present, they are greatly handicapped by the metropolitan Fellows—to whom it would be no more trouble to attend at 9 o'clock, than it is for many a provincial supporter at 1 o'clock. But above all other considerations, time should be allowed for the delivery of the morning parcels, which cannot safely be reckoned on before 12 o'clock; indeed, I have noticed on more than one occasion, that they arrived between 12 and 1 o'clock, just after the committees had risen, which must have been disappointing to the sender. Of course, exhibitors of groups should be required to stage as heretofore in order that they might be ready for public inspection by 12 o'clock, as usual; but small parcels, should be received up to 1 o'clock. The subject is fraught of interest, and I should be glad if Fellows and others interested in the welfare of the Royal Horticultural Society would express their opinion on the matter. *F. R.*

NEW PARASITIC FUNGI (Schœteria Delastrina, Winter).—Last June I was fortunate enough to find this interesting species, which occurs in the seed-vessels of various Veronicas. It is pretty common in Germany and France, but has not hitherto been recorded in this country. The spores, which resemble those of Ustilago in form, are joined together in pairs—hence, Schröter gave it the generic name of Geminella, while Tulasne had previously placed it in Thecaphora. Of course, it wants looking for, and not every plant of Veronica arvensis which I have examined during the past few years has harboured it. The specimens occurred on the top of an old wall near Fakenham, Norfolk. Melampsora galii, Link.—Mr. H. T. Soppitt met

with this Uredine on Galium verum, near Ingleborough, in the month of July last. It belongs to Magnus' subgenus, Thecospora, having its teleutospores formed in the epidermal cells of the host plant. *Charles B. Plowright.*

JUBILEE POTATO.—This new Potato, as yet little known out of the locality in which it was raised, is worthy of a note among others whose merits are being recorded. It was raised by the late Mr. Wood of Chester Hall, East Lothian. In form it is round, of good smooth outline, somewhat flattened, skin white and clean. Planted at the same time with Regents and other sorts of the same season, it outstrips them in attaining size, that is, it is of marketable size earlier than any such with which it has been compared, and is quite equal to them also in quality when unripe. But it is as a late autumn and winter Potato that it will prove most valuable; when it attains full maturity it is remarkable for its fine floury white flesh and the great weight it yields. In the trial ground of Mr. Hugh Hanan, 16, Bank Street, Edinburgh, a drill of 36 yards long was planted last spring with 12 lb. of seed, and on being lifted a few days ago, yielded a little over 2 cwt. The tubers were very equal in size. *W. S.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

Oct. 22.—Present: R. McLachlan, Esq., in the chair; Mr. Morris, Mr. Veitch, Dr. Oliver, Mr. Symons, Dr. Scott, Dr. Müller, Mr. Michael, and Rev. G. Henslow (Hon. Sec.).

Rhododendron and Azalea bigener.—Mr. H. J. Veitch exhibited two plants raised from a cross between Azalea indica, Stella (male) and Lord Wolseley (female), a Rhododendron of East Indian parentage. [R. jasmiflorum × R. javanicum = Princess Royal; Princess Royal × R. Brookeanum var. gracile = Duchess of Teck; Duchess of Teck × R. javanicum = Lord Wolseley]. Both plants were from the same pod, but while one was about 1 foot in height, the other was scarcely 3 inches, though six years old. The former bore a truss of orange-coloured flowers of about the same colour as those of Lord Wolseley. The corolla was somewhat smaller, with not so broad a limb, and in texture approximated the Azalea. Mr. Henslow undertook to examine and report upon the anatomical structure of the leaves, to see if there were intermediate characters. A botanical certificate was unanimously awarded to this interesting cross between two genera.

Diseased Peas.—Dr. Oliver reported upon the plants sent by Mr. Pownall to the last meeting, but having insufficient specimens he was unable to assign a cause for the injury. Fresh material having been received with roots attached, he undertook to report further upon it at the next meeting.

Change of Sex Induced by a Parasitic Fungus.—Mr. Plowright forwarded an interesting communication upon the effect of Ustilago violacea on Lychnis vespertina. He artificially impregnated a female plant with spores from the anthers of a male plant of Lychnis diurna infested with the Ustilago. Although the hybrid offspring raised were perfectly healthy, yet the female parent plant itself (L. vespertina) bore nothing but male flowers in the following year, every one of which was affected with U. violacea. A fuller account will appear in the *Journal of the Royal Horticultural Society.* It was observed by members of the committee that the explanation is, that the change of sex is due to compensation. Whatever tends to lessen the vitality or vigour of the female organ may heighten that of the male, as occurs frequently in hermaphrodite flowers, and when they are normally unisexual then the lost sex may reappear, when the energy is diverted from the one usually present. Moreover, if the constitution be weakened, as was possibly the case in the present instance, by the fungus, then the plant may be only capable of forming stamens, for it is well known that the male sex is often correlated with a lessened degree of vitality.

Oranges Attacked by the Fly.—A communication was received from Malta, stating that, "The Orange fly (Ceratitis citriperda) has of late years done much damage to the fruits of the Orange and Mandarin Orange trees in Malta. It has also attacked the fruit of the Pear, Peach, Nectarine, and Fig. The females penetrate the skin of the ripe fruit, and deposit their eggs, and the larvæ rapidly destroy the fruit. It is believed that in the island of Malta there are four broods of the fly in the year. The fly has been observed in Italy, Spain, the Azores, and South Africa." No specimens were sent, so that no opinion could be expressed upon the matter, or a remedy suggested. It was thought advisable to take this opportunity of calling the attention of correspondents to the extreme importance of their invariably sending specimens with their communications, otherwise it is quite impossible for scientific experts to return satisfactory replies.

Fog Report.—The discussion upon the injury of London fogs upon vegetation was renewed, and a circular drawn up, which will shortly be issued to growers within a radius of 12 to 15 miles from the metropolis. The committee trust that they will furnish as full details as possible, with the hope that the investigation may lead to the adoption of such preventives as conditions will permit against the increasing injury which now prevails in the suburbs of London.

The Lady Apple.—Mr. Henslow exhibited a spray covered with the brightly coloured fruit from a tree which grows in a hedge within his garden, near Drayton Green, Ealing. It is probably a descendant from some plant introduced many generations ago. It is asserted in *The Fruit Manual*, by Dr. Hogg, to have been brought from the Peloponesus to Rome by Appius Claudius, and was called the "Lady Apple" because ladies in France were accustomed to carry it in their pockets in order that the peculiar odour might be imparted to their handkerchiefs. Though known to early continental writers, it does not appear to have been introduced into England till the end of the seventeenth century. It was first discovered as a wilding in the Forest of Api, in Brittany. Only one dish was exhibited (by Mr. Pragnell, of Castle Gardens, Sherbourne, Dorset) at the National Apple Congress in 1883, and one dish at the Apple and Pear Conference, 1888. Hence, it would seem to be nearly extinct in England at the present time. It has little or no commercial value, though useful for decorative purposes.

Gentiana Amarella, sub sp. Germanica.—Dr. Masters exhibited specimens of this plant from Tring, whence it was first recorded. Hooker and Arnott, *Brit. Flor.*, 1855, give only Tring and Ripon as localities, but Hooker, *Stud. Flor.*, 1884, mentions York, Pemb, Herts, Berks, Surrey, and Hants. Though regarded as separate species by some continental botanists, intermediate conditions link the extreme forms together.

FORESTRY.

SYLLABUS OF LECTURES ON FORESTRY IN THE UNIVERSITY OF EDINBURGH.

During the session 1889-90, Dr. William Somerville will deliver one hundred lectures on the "Principles and Practice of Scientific Sylviculture," beginning October 22, at 9 A.M. The course will embrace a digest of the most important researches of foreign investigators, their practical application to British conditions being always kept steadily in view. The lecturer hopes to take up the following points in detail:—

Anatomy and Physiology of Trees.
Form of Trees and Quality of Timber.
Identification of British Timbers.
Analytical Determination of British Trees (1) in summer; (2) in winter.
Effects of Isolation and Crowding on Growth of Trees.
Systematic Examination of Forest Trees as regards (1) nomenclature; (2) botanical characters; (3) geographical distribution; (4) situation and soil; (5) behaviour towards light, shade, and meteorological changes; (6) attacks of animals (mammals, birds, insects) and plants, especially fungi; (7) properties of the wood and its technical applications.
Selection of Trees for Cultivating.
High Forest, Middle Forest, Coppice.
Preservation of Soil-fertility.
Pure and Mixed Woodlands, their Advantages and Disadvantages.
Mixed Woodlands, and Formation of Woodlands.
Advantages and Disadvantages of these Systems.
Harvesting and Testing Tree Seeds.
Permanent and Temporary Nurseries.
Care and Management of Woodlands after being established; and their Preservation against Frost Wind, Weeds, Insects, and Fungoid Diseases.
Thinning, "Lightening," Pruning.
Manipulation of Forest Produce.
Secondary Products of the Forest—Resin, Fruit Bark, Charcoal, Fodder, Litter.
Preservation of Timber by Impregnation, &c.
Mensuration of Growing and Felled Timber.
Description of Necessary Implements.
Valuation of Forests.
Ascertainment of Annual, Current, and Periodic Increase in Trees.

The following is the report of the inaugural lecture on October 22, as reported by the *North British Agriculturist*:—

The Science of Forestry.

The opening lecture of the newly instituted course of lectures on forestry in connection with the Edinburgh University was delivered to-day by Dr. Somerville. There was a large attendance of Professors and other visitors, conspicuous among whom were the members of the Council of the Arboricultural Society. Sir William Muir, Principal of the University, presided, and introduced Dr. Somerville as an old University student, of whose brilliant achievements they had all good reason to feel proud.

Dr. Somerville, in opening his lecture, referred to the great attention that was paid to forestry in Germany, India, and other countries, and showed how the State forests in these countries were made an important source of revenue to the State, and had a most important bearing on the welfare of the nation. He then proceeded:—It is undoubtedly true that we have lost much through the scarcity of our State forests, for had they been present in greater numbers the regretable condition of many of our private woodlands would not now have existed. This would have been a great gain to the country in general; but if the same improvements could have been brought about by some other means than the extension of Government forests, the gain would have been still greater. The experiences of other nations, however, tend to show that no other means have ever had very much effect. It is true that we have always managed to get along fairly well in other departments with the very minimum of State interference and example, and undoubtedly the independent spirit which has thus been developed has stood us in good stead in carrying us over many difficulties. But the peculiar conditions and circumstances consequent to the ownership of forests, all point to the State as being in a more favourable position to make the best use of land stocked with trees than the private individual can be. It is a great question, and one whose discussion in all its various ramifications would lead us far beyond our limits of time. Suffice it to say, that the experience of nations and the investigations of political economists point to the conclusion that, although the State proves a bad farmer, it makes an excellent forester. But apart altogether from the purely economic bearings of the case, many circumstances may be present to compel a State to interfere with forest management, in order to secure the public welfare. Extensive denudation near the head-waters of rivers has often been followed by destructive floods, affecting not the owners of the cleared areas, but the inhabitants of districts situated, it may be, hundreds of miles away. This has been strikingly exemplified in many parts of Austria, where the wholesale removal of trees from large areas in the Tyrol, without any steps being taken to re-stock them, has resulted in widespread inundations and immense loss of life and property. The cause of these Austrian floods has, within recent years, been made the subject of Government inquiry, with the result that the State has purchased large areas of private land in the Tyrolese valleys, in order to preserve the existing forests and to restore those which have been spoiled. America can also furnish many cases of flooding following denudation, and in *Garden and Forest* of September 25, Mr. Harrison connects the recent appalling disaster in Pennsylvania with the irrational management of the forests there. Besides the dangers of inundation, those arising from avalanches are also increased by denudation, and many valleys in Switzerland, the Tyrol, and the north of Italy, are comparatively safe only through the preservation of large masses of wood on the mountain slopes. In these cases, and many others which will readily occur to your minds, State interference in the management of forests is entirely justifiable on the grounds of public safety. None of them, however, apply with much force to our own country. At one time the maintenance of a supply

of oak for the navy was a question of great national importance, but is now only historically interesting. It would thus appear that in this country the State might very well refrain from meddling with forestry as an important department of national finance, were it not for the beneficial educational influences which would be started. On this account the State forests which we already possess should be made models of good management, and others should be obtained in important centres—care being taken to select places where the extra work would be a decided benefit to the rural population. This would be the case, more especially in many parts of Ireland and the north-west of Scotland, where, owing to the nature of the climate and the configuration of the land, the venture would be most likely to succeed. A suggestion of this kind was made in the report of the Royal Commission appointed to inquire into the condition of the Highland crofters, where the formation of woodlands was recommended as a likely means of alleviating the general distress, and at the same time of improving the climate; but this, like much other good advice on the subject of forestry from time to time given to the Government, has so far been disregarded. Another factor which has exerted a powerful influence upon British forestry, is to be found in our insular position. On account of our comparative proximity to the vast forests of Northern Europe, we have been made practically independent of the home production of these most important timbers, Pine and Fir. We have carried on the system of importation so long and so extensively that builders, railway companies, and others using large quantities of timber, have come, practically, to ignore home-grown wood, and to look abroad for nearly all their supplies. Of course it is essential, with our small forest area, that we import large quantities of timber; but there is no reason at all for the little that we have to offer being unable to compete, as regards quality, with foreign wood produced by the same species of trees. As a matter of fact, however, the timber which we import from the Baltic is of such uniformly excellent quality, and our own Pine and Fir so often bad, that many refuse to believe that the wood is produced by the same species of trees; whereas, in reality, the so-called "red-wood" is just our Scots Pine, and "white-wood" the common Spruce. Those who do admit that we are dealing with woods produced by the same species of trees, assert that there is something in our soil or climate which must for ever preclude the possibility of our growing as good wood at home. Such a belief is entirely the result of the mismanagement of our woods and forests, and is not attributable at all to the soil, and in very small part to the climate. M. Boppe, in his report on a visit to Scottish and English forests, says:—"Everywhere, both at a few feet above the sea-level and on the sides of mountains at a height of 2500 feet, in the sands of Forres, and in the schists, red sandstones, granites, and gneiss of the interior, we were struck by the wonderful aptitude of the soil to forest vegetation, favoured as it is by a regular climate and the constant humidity of the atmosphere." There are hundreds of thousands of acres of land in Scotland (the observer just quoted says five millions), which at present yield the miserable rent of two or three shillings per acre for grazing, but which could grow as good timber as any in the north of Europe. The practical difficulty is stocking the land with trees, for the great expense which must necessarily be incurred, and the time which must elapse before an adequate return can be looked for, act as too powerful deterrents to its being undertaken on a large scale by private enterprise. That the venture would ultimately prove profitable, even at present prices, there can be little doubt, and all appearances point to a large rise in the value of timber in the near future. Dr. Schlich, in his recently published *Manual of Forestry*, directs attention to the fact that Canada is the only British colony which supplies us with an appreciable quantity of wood. At any moment, however, these imports may cease, for even now the United States is able to take all the timber which Canada can spare. As a matter of fact, our wood imports from that colony have decreased 32 per cent. within the last five years, and as they may be extinguished before other five years, we will have to depend entirely for our imported timber upon countries over whose policy we have no control. Dr. Schlich says that we import £13,000,000 worth of forest produce which we could grow at home, for which purpose the afforesting of 6,000,000 acres would be necessary. This land he believes to be all available in Scotland, and strongly urges the desirability of extended sylvicultural operations. We have now touched upon two of the factors which have exerted their influence upon British forestry, namely, scarcity of State forests, and our insular position; a third is to be found in our fortune in possessing such rich and extensive coal-fields. No country in Europe can approach us in this respect. Whereas wood is still the most important article of fuel in wide regions of the Continent, it is but little appreciated for heating purposes in this country. Had the case been different, we should have been compelled to look to our forests to furnish an appreciable supplement to our supplies of coal fuel, and necessity would have forced us to bestow more care upon our forest management. Those who have given their attention to the subject, tell us that we are now within measurable distance of the time when we shall have to face a diminishing coal supply, and, finally, exhausted coal-fields. Although it is probable that the question of providing a substitute for coal will not urgently demand a solution in our time, still it is undeniable that, sooner or later, it must be faced. Some enthusiastic foresters press the desirability of more extensive tree planting, so that a store of firewood may be laid up against the evil day. That there is some wisdom in the suggestion no one will deny; but Professor Helferich's calculations with regard to the matter do not afford us a large measure of comfort. He says that if we take 2·7 lb. of wood as giving the same quantiy of heat as 1 lb. of coal, and 1 acre planted with Scotch Pine trees as capable of yielding annually 86½ cubic feet of wood equal to 28 cwt., without the capital stock of timber on the land being encroached upon; then, in order to yield the equivalent of the coal output of England and Wales, it would take a fully productive forest area more than six times the total extent of these countries, even supposing our present imports of timber to suffer no diminution. From this it is evident that, even with a largely extended area, our forests cannot be expected to furnish a complete substitute for coal, although undoubtedly they could assist to a considerable extent.

Dr. Somerville then proceeded to deal with game as a potent factor affecting forestry, and this part of his remarks we hope to give in our next issue.

Plant Notes.

FORTUNE'S SAXIFRAGE AND ITS ALLIES.

S. Fortunei is a representative of a small group of Saxifrages, including S. sarmentosa (mother of thousands, &c.), S. cortusæfolius, and S. cuscutæformis, chiefly confined to China, and with the exception of S. sarmentosa apparently becoming more rare every year. As a whole they are perhaps doubtfully hardy plants, and although one or other of them may escape an exceptionally severe winter, they never appear so healthy or happy as when sheltered in the cool conservatory or greenhouse. We have had S. sarmentosa growing on a rockery in the open air for over a dozen years; it still keeps healthy, but lacks the vigour and freedom with runners and flowers that characterise it under more favourable conditions. A somewhat similar statement may be made with regard to S. cuscutæformis. In form, size, &c., its affinity is clearly with sarmentosa, and though perhaps not more than a well-marked variety, its runners so much resemble the Cuscuta or dodder, as to distinguish it as a garden plant. It is figured in Loddige's *Botanical Cabinet*, tab. 186, and China given as the habitat, though there are said to be no native specimens in the Kew Herbarium. This species was planted in the open many years ago, and although it attained a good sized patch, it gradually dwindled and finally disappeared; we have found it along with its near ally very useful in cool ferneries, corridors, &c. A variety of S. sarmentosa, called tricolor, is a gem for work of this kind, it is attractive winter and summer alike, and equally hardy with the others. In *Illus. Horticole*, tab. 398, it is referred to S. Fortunei, evidently a clerical error. It has long been known as a tricolor form of S. sarmentosa. S. cortusæfolius is a comparatively new species, only recently introduced by the Messrs. Veitch of Chelsea, and a decided acquisition to this pretty little group. It is nearly allied to S. Fortunei, and apparently a very variable species, as several forms are figured in a Japanese work named *Soo Bokf*. The flowers are smaller than in Fortunei, though more numerous, the petals instead of being serrated are quite entire, one of which is many times longer than the others. S. Fortunei is by far the most beautiful and attractive of the group, and though it may be grown in the open air in our more southern counties, it can never be depended upon, and often gets blighted just when the flowers are at their best. As a conservatory or cool greenhouse plant, on the other hand, it has no equal at this time of year, its huge heads of pretty white flowers being an unusually welcome sight, when flowers of this description are extremely scarce. It is very easily managed as a pot-plant, its profuse flowering habit alone being a good recommendation. The petals are broad, pure white, and, together with the many pink anthers make an attractive picture. It is one of Fortune's discoveries, and was first flowered in Standish's nurseries at Bagshot.

Linum arboreum, or Tree Flax,

is in many ways a remarkable plant. In sheltered spots in the rockery it forms quite a bush, and flowers more or less continuously from January to December. It is the only shrubby Flax we can lay claim to as a hardy plant, and when fairly established in a suitable position, it forms a splendid feature in a rockery. It makes a shrub of several feet in height, flowering profusely all through the summer, more sparingly throughout autumn and winter, and then only in open weather. In cold or heavy soils, we are told, it never lives more than a few years, but in a light sandy soil, sheltered from east and north, it lives many years a robust and vigorous shrub. It is a native of the Levant, and was introduced by Dr. Sibthorp, of Oxford, about 1788. It rarely, if ever, ripens seed with us, but is very easily increased from cuttings.

Polygonums.

Of this large and extremely interesting genus, we have still three of the species in full flower: P. polystachyum, sphærostachyum, and vaccinifolium. The first of these is perhaps the least known of the three—a fine, robust, and wonderfully striking plant from the Himalayas. It is figured in Wight's *Icones* as P. molle, and this may account for its having got into the trade as such; P. molle is, however, quite a distinct species, and not nearly of so much importance to the cultivator. In P. polystachyum the flowers are ivory-white, as large or larger than those of P. affine, and produced in abundance of feathery plumes from the axils of all the uppermost leaves. P. sphærostachyum is a dwarf species, most suitable for the rockery; the purple-red flower-heads are very attractive. It has been in flower since early summer, and is in good condition now. P. vaccinifolium, with its Plantain-like spikes of pink flowers, is a prostrate-growing and very pretty species, most useful for bogs, &c.

Cornus canadensis.

This is one of the few beautiful berried plants that have also attractive flowers, and just now it is a pretty sight, with its profusion of both flowers and berries. It is a small shrubby species, not much larger than our own native C. suecica, and is a charming addition to the more shady or boggy portion of the rockery; each shoot is surmounted with a largish white, rose-tinted flower, which, against the fine blood-red foliage is very effective. It requires no particular care, and when once established, will form a colony in a very short time, readily increased by division. A native of America.

Disandra prostrata.

This is a pretty trailer, and an almost indispensable plant for rockeries, &c. Its foliage somewhat resembles that of the ground Ivy (Glechoma hederacea), the stems trail in a similar, though not in so profuse amanner, the flowers are much larger, and of an agreeable orange-yellow colour. It is not on the ground,

however, that the Disandra is seen at its best, we prefer it trailing over large boulders, which may be easily managed by planting well above it, and allowing the branches to hang as they will; in this way the flowers as well as the stems and leaves are seen to better advantage. These are produced in numbers from the base of the leaves, and form quite a feature during the summer months. It may be increased readily from cuttings, placed in a little heat now; it is best done earlier, however. The younger Linnæus found that the Disandra varies in the number of its stamens, from five to seven, it also varies in the divisions of the calyx and corolla. *D. D.*

FRAGRANCE OF JAPANESE FLOWERS.

"Can anybody explain the fact that few of the native fruits or flowers of Japan are fragrant? It would be interesting to know whether those imported into that country after awhile became odourless, or nearly so?"

When I read the above in the *Pacific Rural Press*, p. 133, it was getting late, and I was somewhat sleepy, but it startled me, and my eyes flew wide open. The odour of flowers had been with me a favourite study, but I had never before heard of such a character to Japan flowers. I had never dreamt of it. Right under my library window I had been but a few weeks before sniffing in the delightful perfume of the Paulownia imperialis, while my fine specimens of Daphne indica, Olea fragrans, Gardenia florida, which but a few weeks ago had laden the atmosphere with a cargo of delicious odours, had flowers still hanging faded on their branches. And fruits not fragrant! You cannot have had Cydonia japonica fruits in California; and if there is any fragrance more grateful than that of the Alpine Strawberry, Fragaria vesca, that greets the traveller through the Hakeme mountains, I would like to know. You must have many varieties of Citrus japonica. I do not remember well, but I believe these are fragrant.

And no fragrant flowers! Some good English friend travelling through Japan must have started the story. He missed the sweet Hawthorn blossom, which has given undying fame to the hedgerows of old England. Hawthorns are not indigenous to Japan, excepting one, small and rarely seen, Cratægus cuneata, may give one enough to swear to, but surely their first cousins, Photinia and Raphiolepis, ought to have made up for it. I do not know whether any of the Primroses or Violets of Japan are sweet, but of all the species of the Old World, only one, the Violet, Viola odorata, and the Primrose, Primula veris, claim any odour. Of the numerous Violets of Eastern North America, I only remember one, Viola blanda, that is sweet, and I cannot recall one of the Violets of the Pacific Coast.

Eglantine and Sweet Brier (you see I persist in making the Eglantine not the Sweet Brier, but Rosa canina) sweeten the English atmosphere, to be sure, but are they more sweet than Rosa rugosa? And is not the Musk Rose, Rosa moschata, a native of Japan? The Fox-grape, Vitis labrusca, is a native of Japan as well as of North America, and has just the same enchanting odour there as here. Our Jersey swamp Magnolia is sweet, but I fancy Magnolia hypoleuca would have its competition; and if we can boast of our "sweet shrub" Calycanthus, those who are ready to bet their pile when sure to win would go any number better on the Japan Allspice, Chimonanthus fragrans. One of the most delightfully scented of our hardy Vines is Akebia quinata, though the numerous varieties of Japan Honeysuckles may feel a little jealous at my preference. The Sweet Woodruf (Asperula odorata) diffuses its sweet charms among the underbrush in Japan woods as it does in the forests of Northern Europe, and Volkameria japonica, though its leaves stink, makes up in the odoriferous and showy heads of flowers. I do not know that the Ailanthus flowers would be regarded as fragrant, but that they are odorous is well known, and the pretty white Serissa fœtida of our gardens is like unto it.

I think I could give you a list of Japan plants that are odoriferous, just as long in proportion as in the plants of any other country, but I want to ease my head and give you a piece of my mind before I go to bed.

Do you know this subject of plant odours often strikes me as one worthy of being worked up better than it has been? We speak of the brightness and sweetness of flowers as if it were, or they were, common to these lovely life-companions of ours. But in truth, odoriferous flowers are in the large minority, and what often surprises me is that usually only one or two in a large genus are odoriferous, the rest scentless. There are several hundred of Trifolium, but only the few we know as Clovers are sweet; of a half-hundred Resedas, we have only one Mignonette; Dianthuses we have in any quantity, but none come anywhere near the fragrance of the Carnation or the Pink. How many sweet flowers have we among the Asteroideæ, which constitute one-tenth of the whole flora of the globe? There is, to be sure, a certain faint scent resembling the odour of Mahogany sawdust running here and there through the whole, but we do not call it fragrance. Poets and speculative philosophers have been spoiled by the scent of newly-mown hay given off by a single Grass, Anthoxanthemum odoratum, and the comparatively few that have been gathered for their odours in greenhouses and gardens.

Oftentimes when reading of the wonderful relations between odoriferous flowers and insects, and the strange influence this active relation has had in the development of form and the genesis of species, I have wondered whether those who have made so much of this point had ever contemplated how rare in proportion to the whole these fragrant flowers are. And now, having cleared my conscience of a duty to my favourite Japan flowers, let me gather the drapery of my couch around me, and, I hope, lie down to pleasant dreams. *Thomas Meehan, Germantown Nurseries, Philadelphia, August* 22, 1888, *in the "Pacific Rural Press."*

FRUIT REGISTER.

APPLE BAUMANN'S RED REINETTE.

This is one of the most beautiful of dessert Apples, the colour being of the deepest crimson. The flesh is white, crisp, though not really first-rate in flavour. It is, however, a very passable fruit, and should be included in all large collections of Apples. How far it succeeds as a standard I am not prepared to say, but as the tree grows well, and is very fruitful on cordons and bushes, it may likewise do well as a standard. The colour for market purpose would be very enticing.

Pear Pitmaston Duchesse.

We find that the quality of this very large and handsome Pear is variable, it being in some seasons, as the last for instance, of first-rate flavour, while in others it is at times second or third rate. To have the largest fruits, it should be afforded a situation on a south or west wall—at any rate we find this necessary in the cold heavy soil of this garden, and it should not be allowed to carry a numerous crop of fruits. I gathered to-day some fruit from a tree upon a south wall, which had carried a fair crop. The individual fruits being large, more than half of them reaching 1 lb. in weight, and the largest weighed 1 lb. 5 oz. I know that there is nothing remarkable about this variety attaining to this weight, at the same time it may be regarded as a good result, considering the nature of the soil, and it also shows the favourable character of the season. Glout Morceau is invariably unsatisfactory here, but this year the trees have some large and clean fruits. We planted some 300 Pears as single cordon last autumn, which we had received from Messrs. James Veitch & Sons, and have already gathered some good fruits of Louise Bonne of Jersey, Winter Nelis, Durondeau, Olivie de Serres, and Bergamotte d'Esperen. I think this is deserving of note, when the distance the trees travelled is taken into account. Borders were prepared specially for the trees, which were planted as soon as they were received. *Thomas Coomber, Hendre Gardens, Monmouth.*

Plum, Reine Claude de Bavay.

I would recommend this variety to intending planters of Plums who do not happen to know it. It is in every respect an excellent kind, although not so showy as some inferior sorts; it is nevertheless when well ripened, delicate, and rich in appearance, and its flavour is all that could be desired. Moreover, it ripens later than mid-season varieties (a time when there is often a glut in the supply), a fact that considerably enhances its value. I have had no experience with it as a standard, but upon walls and in the orchard-house when grown in pots, it has proved to be a reliable cropper, and a delicious fruit, and we find it much liked. On the exhibition table it does not always catch the eye of judges, or it would not however be easily left unnoticed if Plums were as Melons usually are, judged by quality and not by quantity. *Thomas Coomber.* [Except in very warm localities, the fruit does not ripen well on bushes or standards, and in the open it is best on a wall with a west aspect, and here it is easily protected from wasps. Ed.]

TRADE NOTICE.

B. S. WILLIAMS and SON.

We learn that Mr. Harry Williams, who, for some years past, has assisted in the management of his father's Victoria and Paradise Nurseries, Upper Holloway, has now entered into partnership with his father, and that the firm will in the future be designated as B. S. Williams & Son. Messrs. Williams have earned such a title to sympathy on the part of Orchidists and horticulturists generally, that the heartiest good wishes will be felt for the prosperity of the firm.

VEGETABLES.

NEAL'S NE PLUS ULTRA BEAN.

I grew this variety last year for the first time, and, notwithstanding its fine pods, the crops seemed to be less than that obtained from old varieties, but, after this season's trial, I am convinced of its superiority to those. It is a common mistake to plant the Beans too thickly in the rows; we have allowed a distance of 10 inches between them, and find that the crop is considerably better. The plants continue to bear much later in the season from the early sowings, and the pods are finer.

In light soils too much cannot be said in favour of sowing the Bean in well-manured trenches of at least 18 inches wide at the bottom, into which a thick layer of manure should be placed. The pods grow to a considerable length, and are of the deepest green, very fleshy, and alike good for home consumption or exhibition. *H. Markham.*

A Mildew Resisting Pea.

Late Peas in all parts of the country are apt to be affected and injured by mildew; and the only one which I have found capable of resisting its attacks year after year is Symes' Black-eyed Marrow. At the present time it is in full flower and pod, in the kitchen garden here; and it is green and spotless from top to bottom. It is the best of all late Peas with us, and we gathered it well into November last year. It promises to be equally useful this season. *J. Muir, Margam Park, South Wales.*

Tomatos.

Gilbert's Surpassé Tomato I have notyet grown, but believe from the different favourable accounts which are given of it, that it is just the variety for planting out-of-doors. I have grown a number of the varieties highly spoken of, and found

some of them to do well in favourable seasons, but have not sufficient confidence in them to put them out-of-doors in quantity. Laxton's Open Air is liked very much, and it generally fruits well. I may, however, be singular in my fancies, but if I should be limited to one variety, I would give the preference to a good selection of the Large Red. When Tomatos proved almost a failure last year, this and the Orangefield Dwarf were the only varieties which ripened a moderate crop of fruit. It may be said, that the Large Red is a poor Tomato when compared with many others, which to a certain extent is true. Its unevenness and its numerous seeds are against it. There is an old saw, "Half a loaf is better than no bread," but with the above we get a full loaf, although not of superfine quality. My method of growing Tomatos is that commonly pursued—sowing the seed early, and getting fine plants from 2 to 3 feet high, and well hardened before putting them out in the end of May or the first week in June. The laterals are always kept pulled out, and when the plants have set fruit in sufficient numbers, and early enough to have time to ripen the same, the tops are pinched out; and by constant attention as regards keeping the laterals down, thinning the leaves when they get too thick and crowded, and by picking off the fruit as fast as they show signs of changing colour, placing them in a vinery to finish, we generally succeed; no manure-water is given till after the required number of fruits is set, when they are considerably benefited by occasional doses. *H. Markham.*

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending October 28.	Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 1, 1889.	Below 42° difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	3 —	18	26	+ 154	+ 21	7 —	199	33.2	38	23
2	2 —	21	13	— 39	+ 14	2 —	167	22.9	10	29
3	0 av.	27	0	— 38	— 4	6 +	155	21.7	3	27
4	1 —	33	0	— 54	+ 113	4 +	159	23.3	10	31
5	2 —	26	2	— 58	+ 66	2 +	149	24.2	14	29
6	1 —	39	0	— 7	+ 68	2 +	149	22.4	10	31
7	1 —	27	5	+ 5	— 26	9 —	169	33.0	27	31
8	2 —	24	2	— 3	— 7	7 —	159	26.9	14	30
9	3 —	34	0	— 124	+ 89	5 —	161	29.4	15	36
10	2 —	32	10	+ 23	— 51	6 —	190	32.2	44	27
11	4 —	31	10	— 35	— 4	7 —	170	30.5	34	33
12	1 —	66	0	+ 68	— 16	1 +	168	24.0	24	42

The districts indicated by number in the first column are the following :—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending October 28, is furnished from the Meteorological Office :—

"The *weather* has been dull, unsettled, and rainy, with a good deal of mist or fog in most parts of Great Britain, but in Ireland and the West of Scotland the conditions have been generally fine and dry. Thunder and lightning occurred at some of the English stations on the 23rd and 24th.

"The *temperature* has equalled the mean in 'England, N.E.,' but in all other parts of the kingdom it has been below; in 'Scotland, N.,' and 'England, S.W.,' a deficit of 3° is shown, and in 'Ireland, S.,' 4°. The highest of the maxima, which were registered in most instances either on the 22nd or 28th, varied from 53° in 'England, N.E.,' to 58° in 'England, S.,' 'Scotland, W.,' and 'England, S.W.,' and to 65° in the Channel Islands. The lowest of the minima were recorded on the 25th, when they varied from 22° to 29° in Scotland, from 25° to 27° in Ireland, and from 26° to 36° over England. In the 'Channel Islands' the lowest reading was 45°.

"The *rainfall* has been considerably less than the mean in Scotland, Ireland, and the western parts of England; but over southern, central, and eastern England, there has been an excess.

"*Bright sunshine* shows a decided increase in Scotland and Ireland, but over England it has continued very deficient. The percentage of the possible amount of duration ranged from 34 to 44 in Ireland, and from 27 to 38 in most parts of Scotland, but over England and the East of Scotland it has been as low as from 3 to 15.

LAW NOTES.

A SPIRÆA DISPUTE.

In the City of London Court, on Wednesday, before Mr. Commissioner Kerr and a jury, the case of Sawyer *v.* Rains was heard, raising an important question to gardeners. The plaintiff, Mr. Edward Sawyer, nurseryman, proprietor of Hyde Nursery, Lower Edmonton, sought to recover the sum of £31 5*s.* for the loss of sale and the profit on five hundred plants of Spiræas sold through misrepresentation by the defendants, Messrs. Michael Rains & Co., seed merchants, of 34, Mansell Street, Aldgate, E.

Mr. E. B. Tattershall appeared for the plaintiff, and Mr. H. W. Lochnis for the defendants, instructed by Mr. Butcher on behalf of the Seed Trade Protection Association.

The case for the plaintiff was, that in November last he received a circular from defendant offering to sell him some Spiræa palmata. He went to see them, and bought 500 roots at 12*s.* 6*d.* per 100. He got them home, and potted and bedded them out in the ordinary way in his nursery. That was in November. Time went on, and in June, when they bloomed, it was discovered that instead of being Spiræa palmata they were Spiræa elegans. The palmata, when in bloom, showed a deep pæony-red colour, whereas elegans was a dirty white, and similar to Heather, being comparatively useless. The elegans as a commercial article was practically valueless. The plaintiff now claimed 1*s.* 3*d.* for each of the 500 plants which he would have obtained for them when fully developed had they been of the proper description.

The defence as spoken to by the defendant, Mr. Rains, and several expert witnesses from Holland, was that the plaintiff had been supplied with Spiræa palmata, and that if anything had gone wrong with the plants, it was owing to the plaintiff giving them too much water during the time of cultivation.

Mr. Commissioner Kerr said there was no charge of fraud against the defendant. It was evident he had sold what he thought was Spiræa palmata.

The Jury found for the plaintiff for the full amount claimed, and judgment was given accordingly.

Leave to appeal was given.

MARKETS.

COVENT GARDEN, October 31.

A small cargo of Nova Scotia Apples to hand this week, quality very inferior. No improvement in business. Market well supplied. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	7 0	Peaches, per doz.	4 0-	8 0
— Nova Scotia, brl.	8 0-	3 0	Pine-apples, Eng., lb.	1 6-	3 0
Cobs, per 100 lb.	125 0-	...	— St. Michael, each	2 0-	6 0
Grapes, per lb.	0 6-	2 6	Plums, ½-sieve	2 6-	5 0
Lemons, per case	21 0-	45 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0 9-	...	Mustard and Cress, punnet	...	0 4- ...
Beet, red, per dozen	1 0-	2 0	Onions, per bunch	0 5-	...
Carrots, per bunch	0 6-	...	Parsley, per bunch	0 4-	...
Cauliflowers, each	0 3-	...	Shallots, per lb.	0 6-	...
Celery, per bundle	1 6-	2 0	Spinach, per bushel	2 0-	...
Cucumbers, each	0 6-	0 9	Sprouts, per lb.	0 4-	...
Endive, per dozen	1 6-	...	Tomatos, per lb.	0 9-	...
Herbs, per bunch	0 4-	...	Turnips, per bunch, new	...	0 5- ...
Leeks, per bunch	0 3-	...			
Lettuce, per dozen	1 6-	...			
Mushrooms, punnet	1 6-	...			

Potato Market still quiet and no special demand for anything except the very best samples. Magnums and Imperators: Blacklands, 45*s.* to 55*s.* per ton; Lincolns, 50*s.* to 65*s.*; Yorks, 65*s.* to 80*s.*; and Kents, 70*s.* to 90*s.* *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Evergreens, in var., per dozen	...	6 0-24 0
Aspidistria, doz.	18 0-	42 0	Ferns, in var., doz.	4 0-	18 0
— speci. plants, each	7 6-	10 6	Ficus elastica, each	1 6-	7 0
Asters, per dozen	4 0-	8 0	Foliage plants, various, each	...	2 0-10 0
Begonias, dozen	4 0-	12 0	Fuchsias, dozen	3 0-	9 0
Chrysanth., dozen	6 0-	15 0	Hydrangea, per doz.	9 0-	18 0
Cyperus, per dozen	4 0-	12 0	Marguerites, doz.	6 0-	12 0
Dracæna terminalis, per dozen	30 0-	60 0	Palms in var., each	2 6-	21 0
— viridis, per doz.	12 0-	24 0	Pelargoniums, scarlet, per dozen	4 0-	6 0
Ericas, various, doz.	8 0-	18 0	Solanums, per dozen	6 0-	12 0
Euonymus, in var., per dozen	...	6 0-18 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Maiden Hair Fern, 12 bun.	...	4 0- 9 0
Asters, English, bun.	4 0-	8 0	Mignonette, 12 bun.	1 0-	4 0
Bouvardias, per bun.	0 6-	0 9	Pelargoniums, 12 spr.	0 9-	1 6
Calla æthiopica, 12 bl.	3 0-	6 0	— scarlet, 12 spr.	0 4-	0 6
Camellias, 12 blooms	2 0-	4 0	Primulas, double, 12 sprays	...	0 9- 1 0
Carnations, 12 blms.	1 0-	2 0	Roses, Tea, per doz.	1 0-	3 0
Chrysanth., 12 bun.	3 0-	9 0	— coloured, dozen	2 0-	4 0
Chrysanth., 12 blms.	0 6-	3 0	— red, per dozen	0 6-	1 0
Dahlias, 12 bun.	2 0-	4 0	— Safrano, dozen	0 6-	1 0
Eucharis, per dozen	3 0-	4 0	Stephanotis, 12 spr.	3 0-	6 0
Gardenias, 12 blooms	2 0-	4 0	Sunflowers, various, per 12 bun.	...	3 0- 6 0
Gladioli, 12 bun.	6 0-	12 0	Tuberoses, 12 blms.	0 6-	1 0
— 12 sprays	1 0-	1 6	Violets, 12 bun.	1 3-	2 0
Heliotropes, 12 spr.	0 3-	0 6	— French, bunch	5 0-	6 0
Lilac, white, Fr., bun.	6 0-	7 0	— Parma, 12 bun.	2 0-	4 0
Lilium, var., 12 bl.	2 0-	6 0			
Marguerites, 12 bun.	3 0-	6 0			

Orchid-bloom in variety.

SEEDS.

London: *Oct.* 30.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, write that some little business is now passing in Clover seeds, the remarkably low prices prevailing having at last proved too tempting for buyers. Transactions, however, have not yet assumed any importance. Winter Tares present a firm market. For Rye there is a strong inquiry, at the substantial advance recently noted. Blue Peas are dearer. Rapeseed also commands more money. Mustard, both white and brown, is exceedingly steady. Hemp seed tends in buyers' favour. Canary-seed shows no change.

FRUITS AND VEGETABLES.

Spitalfields: *Oct.* 30.—English Apples, 3*s.* to 6*s.* per bushel; Pears, 2*s.* to 4*s.* per half-sieve; Pruen Plums, 4*s.* to 5*s.* per do.; English Tomatos, 3*s.* 6*d.* to 5*s.* per 12 lb.; Foreign Tomatos, 9*d.* to 1*s.* 6*d.* per box; Cabbages, 1*s.* to 3*s.* per tally; Savoys, 1*s.* 6*d.* to 3*s.* do.; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Cauliflowers, 3*s.* to 6*s.* per tally; Spinach, 4*d.* to 8*d.* per bushel; Brussels Sprouts, 1*s.* 3*d.* to 1*s.* 9*d.* per half-sieve; Greens, 1*s.* to 1*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Parsley, 1*s.* to 2*s.* do.; Parsnips, 4*d.* to 8*d.* per score; frame Cucumbers, 2*s.* to 2*s.* 6*d.* per dozen; Beetroots, 4*d.* to 6*d.* do.; Cos Lettuce, 4*d.* to 8*d.* per score; Leeks, 2*s.* to 2*s.* 6*d.* per dozen; Mustard and Cress, 1*s.* to 1*s.* 6*d.* per dozen baskets; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Celery, 4*d.* to 1*s.* per bundle; Horse Radish, 1*s.* to 1*s.* 4*d.* do.; English Onions, 6*s.* to 7*s.* per cwt.; Belgian Onions, 5*s.* to 5*s.* 6*d.* per bag of 110 lb.; Dutch Onions, 5*s.* to 5*s.* 6*d.* do.; Spanish Onions, 5*s.* to 6*s.* per case; Carrots, 20*s.* to 35*s.* per ton;

POTATOS.

Borough and Spitalfields: *Oct.* 29, — Good samples continue in steady request; but second qualities are still a very dull trade. Magnums sell about the best, and Regents the worst. Regents,

55s. to 75s.; Hebrons, 60s. to 80s.; Magnum Bonums, 45s. to 85s.; Imperators, 45s. to 70s. per ton.

Spitalfields: *Oct.* 30.—Quotations: Magnums, 45s. to 65s.; Regents, 55s. to 75s.; Imperators, 50s. to 70s.; Hebrons, 50s. to 65s.; Early Rose, 50s. to 60s. per ton.

Stratford: *Oct.* 29. — Quotations: Magnums, light, 55s. to 72s.; do., dark, 47s. to 50s.; Hebrons, 50s. to 70s.; Imperators, 55s. to 63s. per ton.

Notices to Correspondents.

Chrysanthemum: *C. E.* Probably the effect of mildew. Try dusting with sulphur.—*T. B.* Not at all like the variety you name.

Correction.—In the report of the Royal Horticultural Society, p. 477 in our last issue, for "Hæmorocallis," &c., read "Hymenocallis macrostephana."

Dog Rose Seeds: *J. P.* Layer them, if in large quantities; that is, mix the hips with fine sandy soil, out-of-doors, and let them remain till the spring; the fleshy part of the fruits will then be decayed, and the seeds may be sifted out and sown thinly in beds, broadcast, covering them with a quarter of an inch of soil. Small quantities of seeds may be cleaned and sown in beds at once; a few will germinate next year, and rest the following year. The seedlings will require once transplanting after they have stood one year in the seed-bed. Work them when of the size of a goose-quill. Cuttings, if properly prepared before striking them, are not so prolific of suckers as ordinary Rose stocks, or seedling Briers.

Fungus on Dead Branch of Judas Tree: *G. B.* Cyathus vernicosus.

Market or Fruit Garden: *H. S. J.* The land should not be heavily rented, as manure, hand-labour, and possibly extra tithes, will have to be met, and baskets, barrels, and horses and carts, ploughs, &c., purchased. The orchard should be sheltered from the west, south-west, north, and east winds, especially the first two. Winds from cold points, although they sometimes do harm to hardy fruits in the blooming period, do good in the winter and spring by retarding growth and the opening of the flowers. If we were planting Pears and Apples we would plant alternately in the rows, say, of Apples, trees on the Paradise and Crab stocks; of Pears, trees on the Quince and Pear stocks. After twelve to fifteen years the trees on Paradise and Quince stocks would be exhausted by heavy crops, or would have exhausted the soil on which they stood, and must be rooted out, when the more enduring Crab and Pear-stocked trees would be coming into fair bearing, and would take their places, and might be allowed some reasonable amount of branch extension, so as to cover the ground. Heavy cropping of the ground with vegetables ought to be avoided, as the necessary heavy manurings would induce gross growth in the trees on Crab and Pear stock, and loss of surface-roots would result from digging and ploughing. The best orchard land requires manure at times, but this should always be put where it is seen to be most needed, and nowhere else. For a few years bush-fruits may be grown between the trees; but if bush-like trees—and these are best—are planted, the interlining of bush-fruits will be limited in extent. Strawberries and Rhubarb, early spring flowers of all kinds, especially Lily of the Valley, Anemones, Scillas, and Narcissus, flower well under the shade of fruit trees sparsely clad with foliage. We should advise you to employ a good deal of caution in the matter; and if the major part of land occupied admits grazing, or is under the plough, so much the better, as there will then be an income to be relied on from that source until the fruit land, and its under-crops, of whatever nature they may be, have commenced to make some returns.

Myrtle: *M. C.* Cuttings of ripe wood, with a heel, put into sandy soil in August or September, covered with a bell-glass, and kept in the greenhouse, will strike by the summer following. You will do better to strike cuttings of half-ripened slips from plants forwarded in heat in April and May. These root readily in bottom-heat of 80°. When rooted, pot them off singly into small 60's, keep warm till established, and grow them during the summer in a cold frame, and near to the glass, so as to preserve a bushy habit. Look out sharply for greenfly and scale. Pinch the points of the shoots several times during growth. Myrtles grow well if planted out against a south or west wall, but the plants must be protected in winter with a little straw, and a bast mat put over all. If the covering be not very dense, few leaves will be lost during the winter.

Names of Fruits: *Rose.* 1, Gipsy King; 2, not recognised; 3, Nanny; 4, Reinette Blanche d'Espagne; 6, Lane's Prince Albert; 9, Gloria Mundi. — *W. H. Tillet.* Your Apple is unknown; may be a local variety. — *J. B.* 1, Winter Nelis; 2 and 6, Bergamote d'Esperen; 3 and 7, White Doyenné; 4, Beurré Diel; 5, Winter Nelis; 8, Beurré Superfin; 9, Maréchal de la Cour.—*E. M. P.* 1, Orange Pippin; 2, Warner's King; 3, Cox's Pomona; 4, Bess Pool; 5, Emperor Alexander; 6, Keswick Codlin.—*J. H. P.* Apple not known; Pear Emille d'Héyst. — *Seven Pears, and twenty-one Apples, wrapped in two sets of papers—letter lost.* The sender may recognise; and he should at the same time remember that the quantity sent far exceeds the number we have repeatedly stated in our pages we are prepared to name at any one time. That number is six, which please again note. Having sent so many, not to disappoint you altogether, we name the Pears this week, and will name the Apples next. *Pears:* 2, Pitmaston Duchess; 3, Doyenné Boussoch; 4, Louise Bonne of Jersey; 5, Glout Morçeau; 6, Beurré Diel; 7, Bishop's Thumb.—*Head Gardener.* Pear Pitmaston Duchesse.

Names of Plants: *W. M. G.* 1, Physalis Alkekengi; 2, Phygelius capensis.—*R. W.* Helianthus lætiflorus.—*Victor.* 1, Aster puniceus; 2, A., specimen insufficient; 3, A. lævigatus; 5, A. novi-belgii var. densus; 6, A. novi-belgii var. grandiflorus; 7, A. versicolor.—*Charles Longman.* The white flower is Pittosporum Tobira—the other Phlomis fruticosa.—*B. E. N.* 1, Begonia nitida; 2, B. spathulata; 3, probably a seedling out of B. spathulata; 4, B. Sutherlandi.—*A. P. C.* Boussingaultia baselloides, Rhododendron arboreum var., Yucca Treculeana.—*Middlesex.* Dracæna marginata gracilis.—*T. and P.* Veronica salicifolia.—*Dr. P.* Cattleya eldorado (poor form), Epidendrum inversum.—*R. M.* One of the best forms of Cattleya eldorado Wallisii.—*M. Froud.* Acæna microphylla.—*E. H.* We cannot name the Roses.—*H. B. B.* Bougainvillea speciosa.

Phallus: *O. P.* Not uncommon in England; we do not know how it may be in Ireland.

Preserving the Colours in Autumn Leaves: *H. F.* We know of no process by which the varied colours of leaves of deciduous trees may be preserved in a dry state.

Tuberoses: *O. P.* Probably water was given before growth began—or bottom heat was too low.

Wheat and Barley: *F. M.* Sow at once in rich soil, in stove heat, 60° at night. Keep on a shelf, close to the glass. If the plants draw after they have been up a few days, remove them to a slightly cooler house, still keeping them up to the light. The seeds should be covered with half an inch of soil, and with pieces of tiles till they germinate.

CATALOGUES RECEIVED.

P. J. Looymans & Sons, Oudenbosch, Holland—Hardy Ornamental Trees (Trade List).

Harkness & Sons, Bedale, Yorkshire—Roses and Hardy Plants.

Alexandre Régnier, 44, Avenue Marigny, Fontenay-sous-Bois, Seine, France—Orchids and Carnations.

Chr. Lorenz, 100 to 103, John Street, Erfurt, Germany—Novelties and Specialties.

Dicksons & Co., 1, Waterloo Place, Edinburgh, N.B.—Fruit Trees.

George Prince, 14, Market Street, Oxford—Roses.

W. Drummond & Sons, Stirling and Dublin—Forest, Ornamental, and Fruit Trees.

Communications Received—J. G. B.—H. W. W.—H. Evershed.—A. D.—W. Todd.—U. D.—A. B.—N. T.—J. G.—W. D.—W R.—W. T.—D. T. F.—W. B.—H.—F. C. G.—G. Flemwell (no Orchid enclosed).—W. B.—C. B.—P. W.—F. Sander.—The Lord Mayor.—J. B. H.—P. S.—A. C. H., Hamburgh.—C. N., Antibes.—U. D., Berlin.—C. H. Jackson, California.—P. M., Paris.

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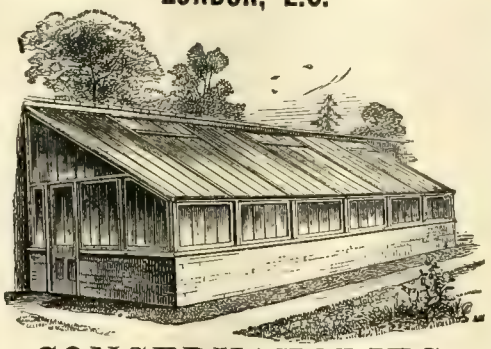
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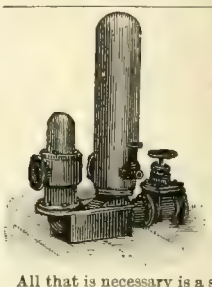
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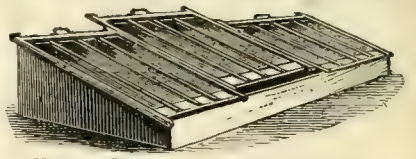
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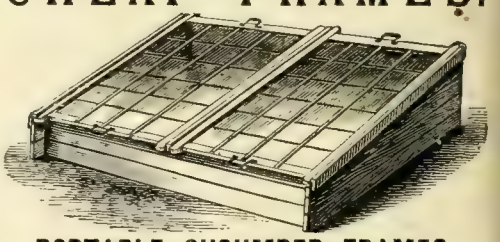
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4 ,, ,,	... 16 ft. by 6 ft.		5	10 0
5 ,, ,,	... 20 ft. by 6 ft.		6	15 0
6 ,, ,,	... 24 ft. by 6 ft.		8	0 0

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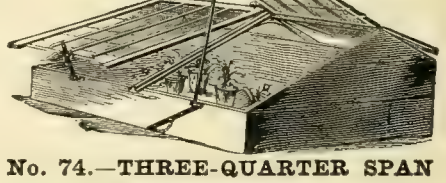
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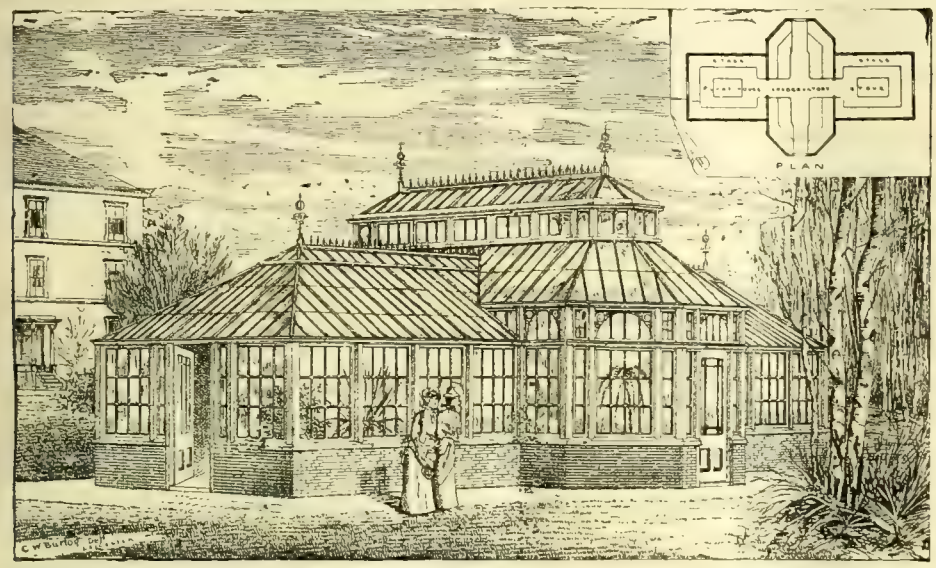
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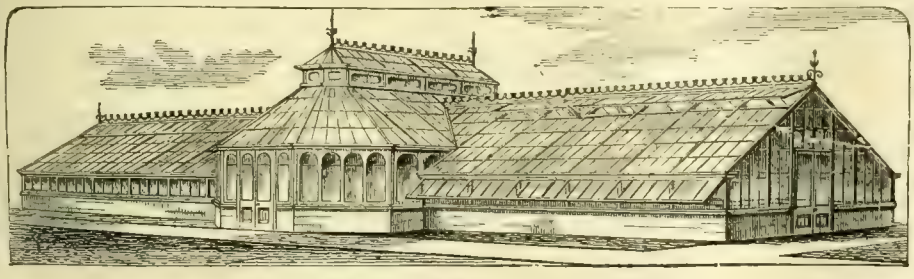
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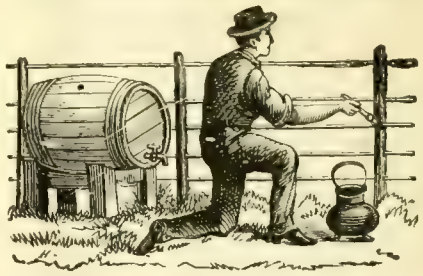
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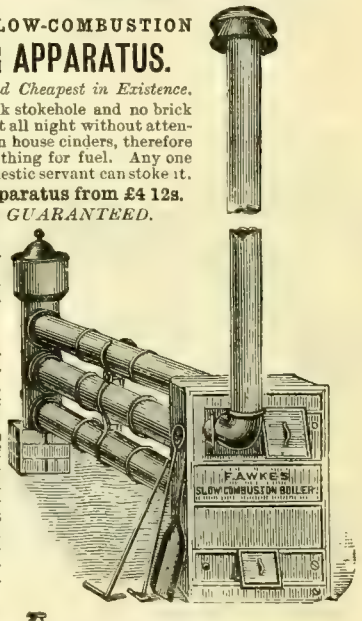
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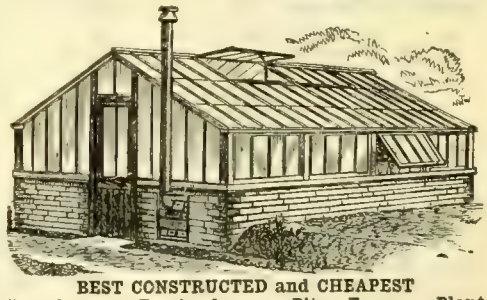
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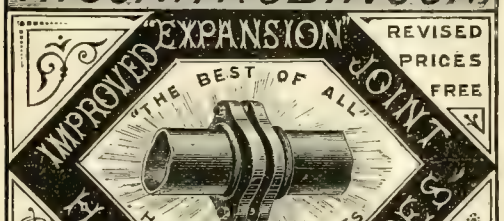
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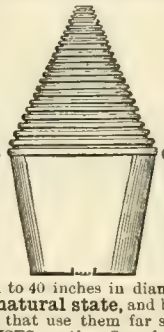
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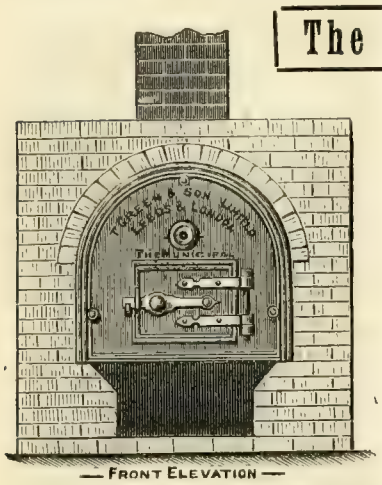
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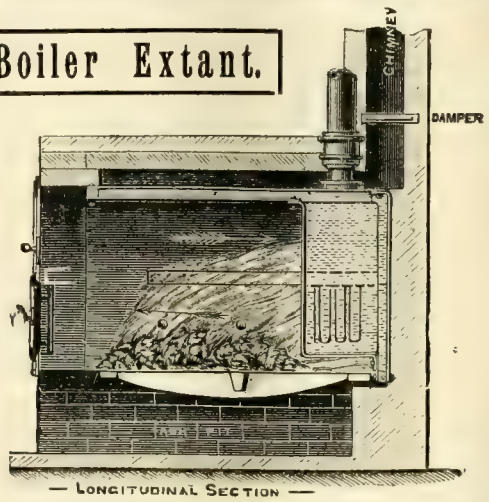
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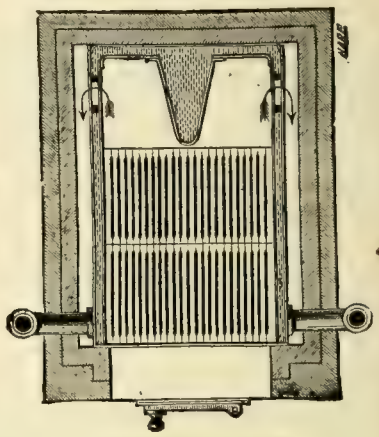
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, November 2, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2550.

No. 150.—Vol. VI. {Third Series.} SATURDAY, NOVEMBER 9, 1889. [Regt. as a Newspaper. {Price 3d. Post-Free, 3½d.

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Thursday Next.—(Sale No. 8037.)

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 14, at half-past 12 o'Clock precisely, a large quantity of ORCHIDS in FLOWER and BUD, from various well-known Collections, comprising some choice varieties and fine specimens.

On view morning of Sale, and Catalogues had.

Monday, November 18.

Springfield, Dulwich, near Herne Hill Station.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on MONDAY, November 18, at half-past 12 o'Clock precisely, without the least reserve, the Collection of Established ORCHIDS and STOVE and GREENHOUSE PLANTS, formed by the late J. Gregory Crace, Esq.; also a fine lot of ORCHIDS in FLOWER and BUD.

On view the Saturday prior, from 10 to 4, and morning of Sale, and Catalogues had on the Premises, and of the Auctioneer, 38, King Street, Covent Garden, W.C.

Dutch Bulbs.

GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Leytonstone, E.

IMPORTANT TWO DAYS' SALE of beautifully grown NURSERY STOCK and GREENHOUSE PLANTS, arranged in lots to suit the convenience of Large and Small Purchasers.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the American Nurseries, Leytonstone, E., near the Leytonstone Railway Station, on MONDAY and TUESDAY NEXT, November 11 and 12, at 12 o'Clock precisely each day, without reserve, a portion of the valuable NURSERY STOCK, consisting of 3000 Conifers, Evergreen and Deciduous Shrubs of various sizes, carefully prepared for removal; 2000 Ornamental and Forest Trees, such as clean grown Limes, 6 to 10 feet; London Planes, Poplars, &c.; 2000 Rhododendrons, including named sorts, well set with buds; 3000 Fruit Trees; a splendid selection of 4000 Standard and Dwarf Roses, embracing the finest varieties of Greenhouse Plants adapted for Conservatory and House Decoration, Climbers in Pots, &c.

May be viewed one week prior to the Sale. Catalogues may be had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C., and High Road, Leytonstone, E.

Tuesday Next.

Standard and Dwarf ROSES, of the best sorts; CONIFERS, AMERICAN PLANTS, ORNAMENTAL FRUIT TREES, GREENHOUSE PLANTS, CARNATIONS, Dutch BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, November 12, at half-past 12 o'Clock, without reserve.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

10,000 splendid Bulbs of LILIUM AURATUM from Japan, for Sale, without Reserve.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on TUESDAY NEXT, November 12, at half-past 12 o'Clock, 10,000 splendid Bulbs of LILIUM AURATUM, just received from Japan; a large quantity of LILIUM LONGIFLORUM, L. AURATUM VIRGINALE, and RUBRO VITTATUM, TIGRINUM, and many others; 500 LILIUM CANDIDUM, 20,000 NARCISSUS, 1000 White Roman and Italian HYACINTHS, and a variety of Hardy BULBS.

On view morning of Sale, and Catalogues had.

Wednesday Next.

200 AZALEA INDICA, PALMS, in variety; DRACÆNAS, and other Plants from Belgium; GREENHOUSE PLANTS, in variety; 100 lots of DAFFODILS, also first-class HYACINTHS, TULIPS, CROCUS, and other DUTCH FLOWER ROOTS, SPIRÆAS, LILIES, and miscellaneous BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 13, at half-past 11 o'Clock, without reserve.

On view morning of Sale, and Catalogues had.

Lee, Kent, S.E.

In the High Court of Justice, Chancery Division.
Neville *v.* North.

Absolute CLEARANCE SALE of NURSERY STOCK, GREENHOUSE PLANTS, GLASS ERECTIONS, and EFFECTS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Manor Lane Nursery, Lee, S.E., 10 minutes' walk from the Railway Station, on WEDNESDAY and THURSDAY NEXT, November 13 and 14, at 12 o'Clock precisely each day, without reserve (by the direction of Mr. Justice Chitty, the Judge to whose Court the cause is attached), the whole of the well-grown NURSERY STOCK—a great variety of Conifers and Evergreens, Fruit Trees, 5000 Aucubas, 3500 Box, 4000 Golden and Green Euonymus, 1000 Dwarf Roses, 500 Privet, 4000 Ivies in pots, Pæonies, Herbaceous Plants, 1000 Ericas, 1000 Solanums, 1000 Auriculas, 500 Fuchsias and Geraniums, 4000 Ferns, in variety; the erections of 11 GREENHOUSES, several PITS, 2000 feet of 4-inch Hot-water PIPING, BOILERS, BRICKWORK, Spring Market VAN, strong Spring VAN, Tumbril CART, Garden LIGHTS, Utensils in Trade, &c.

On view three days prior to the Sale. Catalogues had on the Premises; of Messrs. HUGHES, HOOKER AND CO., Solicitors, 26, Budge Row, E.C.; of Messrs. BLAKE AND HESELTINE, Solicitors, 4, Sergeant's Inn, W.C.; and of the Auctioneers and Valuers, 67 and 68, Cheapside, E.C.

N.B.—The NURSERY TO BE LET. Particulars of the Auctioneers.

Friday Next.

ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 15, at half-past 12 o'Clock, without reserve, 400 lots of ESTABLISHED ORCHIDS from various owners.

On view morning of Sale, and Catalogues had.

Eltham.

GREAT UNRESERVED CLEARANCE SALE of over 20 Acres of remarkably well-grown and thriving NURSERY STOCK, by order of Mrs. Todman, in consequence of the expiration of the Leases.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Eltham Nursery, Eltham, Kent, 1 mile from the Eltham Railway Station, on MONDAY, November 18, 1889, and following days, at 12 o'Clock punctually each day, without reserve, the whole of the unusually well-grown NURSERY STOCK, extending over 20 acres, now in excellent condition for removal, comprising:—

30,000 Conifers.

5,000 Box, of sorts, 2 to 3 feet	3000 Hollies, of sorts, 1 to 4 feet
10,000 Laurels, of sorts, 1 to 5 feet	3400 Pinus, of sorts, 1 to 4 feet
3,700 Rhododendrons, 1 to 3 feet	7000 Ivies, of sorts
2,500 Yews, of sorts, 2 to 5 feet	2000 Clematis
15,000 Privet, 1 to 4 feet	1200 Golden Euonymus
	2000 Ampelopsis Veitchii
	1000 Specimen Border Shrubs

4000 Standard Roses, of the best named varieties; 2000 Veronica Traversii, 2500 Berberis, 6000 Fruit Trees, including Apples, Pears, Plums, and others; 12,000 Standard Ornamental Trees, including Limes, Poplars, Thorns, Chestnuts, Planes, and Mountain Ash.

Arrangements can be made with Mrs. Todman, for plants to be lifted and conveyed to the Eltham Railway Station, whence goods can be transmitted to all parts of the kingdom.

May be viewed any day (Sundays excepted), prior to the Sale. Catalogues may be obtained on the Premises; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, London, E.C.

Maresfield, near Uckfield, Sussex.

GREAT CLEARANCE SALE of the first portion of the GENERAL NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Louisa Lady Shelley, of Maresfield Park, to SELL by AUCTION, on the Premises, the Piltdown Nursery, Maresfield, 2½ miles from Uckfield Station, L.B. & S.C.R., on TUESDAY and WEDNESDAY, November 19 and 20, at 12 o'Clock each day, the first and principal portion of valuable NURSERY STOCK, consisting of 3000 choice Border Shrubs, including many handsome specimen Coniferæ and Evergreens, 6000 Austrian Pines, 80,000 Spanish Chestnuts, Common Laurels, Green and Variegated Hollies, 1000 named Rhododendrons, 1000 Araucaria imbricata, 3000 Standard and Dwarf Roses, including a large number of Teas, 1000 bushy Golden Euonymus, 1500 Standard and Pyramidal Apples, good clean-grown trees; Herbaceous and other Plants.

May be viewed one week prior to the Sale. Catalogues had on the Premises; of M. SANDFORD, Esq., the Estate Office, Maresfield Park, near Uckfield; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

N.B.—The well-known NURSERY is TO BE LET on very advantageous terms. Full particulars of the Auctioneers.

Penge, S.E.

The Penge Nursery, within a short distance of Kent House and Penge Stations, L. C. & D. Railway.

CLEARANCE SALE of the whole of the NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, as above, on MONDAY, November 25, and following days, the whole of the well-grown GENERAL NURSERY STOCK.

Further particulars will appear.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, by Private Treaty, a first-class NURSERY, well stocked; 7 Hothouses, about 2 Acres of Land, and lock-up Shop in Market-place.

For particulars, apply to GRAHAM AND MADELEY, Valuers, Burton-on-Trent.

Central Florida.

FOR SALE (President's Title Deeds complete) 80 acres of fine PINE LAND, 1½ miles from Bartow, a prosperous town with two railroads, one of which runs through the property. It is in the main road to Fort Meade, a well-known English Colony four miles distant. Ten acres is planted as an Orange grove, on which are 360 healthy young trees, three years old. Good reasons given for selling same.

Apply, CURATOR, Botanic Garden, Glasgow.

To Florists and Practical Gardeners.

FOR IMMEDIATE DISPOSAL, SEED and FLORIST'S BUSINESS in Scotland. Apply by letter to FLORIST, 41, Wellington Street, Strand, W.C.

London, S.W., near Putney.

FOR SALE.—An excellent opportunity for acquiring succession to an old-established NURSERY BUSINESS, conducted by present owner, who is Freeholder, for last 22 years. The Property, about 1 Acre, is all enclosed, with good frontage and position, and contains an excellent Dwelling-house, Stabling, Coach-house, 9 well-heated Greenhouses, besides Pits, Frames, Sheds, &c. The whole Property is substantial, and in first-rate condition and working order.

The Purchase Money, some of which might remain, would include the Goodwill, and all Stock, Utensils, Fittings, &c.

Owner would remain, if desired, to introduce connection.

Apply to TANSLEY WITT, 40, Chancery Lane, W.C.

In Bankruptcy.

SEED and CORN BUSINESS.—For SALE, by Private Treaty, the Seed and Corn Business formerly carried on by Mr. H. J. SEDLEN, Sturminster Newton.

Apply, Mr. THOS. J. DENMAN, Bank Chambers, Yeovil.

NURSERY and FLORIST'S BUSINESS (Small, Compact) TO BE DISPOSED OF, with or without Stock. Terms moderate. Two good Large Greenhouses, and about a Quarter of an Acre of Ground.

Apply at the Imperial Nursery, Harrow, N.W.

NURSERYMEN and FLORISTS: large fashionable town. Handsome and prominent Conservatory, Gardens, &c. Moderate rental. Price for good stock and four large, well-built and heated houses, £800. Excellent opportunity for practical man desirous of obtaining a high-class business.

Apply personally (or stamp), B. POMFRET, Business Agent, High Street, Tunbridge Wells.

TO BE LET, on Lease, about 2 acres of productive NURSERY LAND, with Stabling, Outbuildings, and about 13,500 super. feet of Glass. About 5 minutes' from Waltham Cross Station, Great Eastern Railway.

Apply to E. A. H., Queen Anne's Lodge, Waltham Cross, N.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

Landscape Gardening.

OUR THOMAS H. MAWSON advises on all classes of Work under the above heading; also Rock Building, General Estate Improvements, Planting, &c.

See *Gardeners' Chronicle*, No. 146, p. 412.

Address, MAWSON BROTHERS, Nurserymen, Windermere.

FOR SALE, cheap, a splendid Plant of LATANIA BORBONICA in Tub, 10 feet high, 10 feet through, with 19 Fronds, all in good condition.

Apply to T. ROBERTS, Kelsey Manor Gardens, Beckenham.

CHRYSANTHEMUMS, best sorts true to name, strong Cuttings now ready from 1*s.* 6*d.* per dozen, 10*s.* per 100. Many of the best prizes in the country are taken by my customers. For Price of New Japanese Incurved, &c., see CATALOGUE, 2 stamps, of W. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

"Now is the Time to Plant Trees."

ROBERT NEAL begs to call the attention of Gentlemen, Local Boards, Builders, and others who intend planting this season, to his large and varied stock of Shrubs, Standard, Ornamental, and FOREST TREES, FRUIT TREES, ROSES, CLIMBING PLANTS, &c., which, being well transplanted, are in fine condition for removal, and having been grown in the vicinity of London, are especially adapted for town and street plantings. Special quotations for large quantities, delivery free within a radius of six miles of the nursery. Inspection of the Stock solicited. CATALOGUES free on application. Also to offer extra fine forcing SEAKALE and RHUBARB.

The Nurseries, Trinity Road, Wandsworth Common.

ROSES, best varieties, 6*s.* per doz., 40*s.* per 100; Yellow Spanish Broom, 2 feet, 5*s.* per 100; Veronica Traversii, very strong, 17*s.* 6*d.* per 100; Cupressus macrocarpa, grand plants, 4 feet, 12*s.* per doz.; Pelargoniums, the pick of the sorts, 25*s.* per 100; Berlin Lily of the Valley, finest imported, 40*s.* per 1000; Spiræa japonica, 2*s.* per doz., 12*s.* 6*d.* per 100. WALSHAW AND SON, Scarboro'.

WHOLESALE and RETAIL OFFER.

Dwarf MARÉCHAL NIEL, extra strong from open ground.
" GLOIRE DIJON, extra strong.
DOG BRIARS, extra strong.
RHODODENDRON PONTICUM, 1½ to 2 ft., bushy.
" " 12 to 18 in., bushy.
" Stocks, extra strong.
HOLLY Stocks, extra strong. For prices apply to—
GRAY AND SONS, Brox Nursery, Chertsey, Surrey.

THE BEST BEDDING CARNATIONS.

No stakes required.
PAUL ENGLEHEART, crimson Clove.
LADY AGNES, salmon-pink.
1*s.* 3*d.* each, 12*s.* per dozen.
Strong layers of these fine varieties, now ready.
GILBERT DAVIDSON, Ammanford, R. S. O., South Wales.

QUICK.—40,000 2-yr. old, strong and healthy, 18*s.* per 1000, free on rail, Lynn Docks, G.E.R. Apply to NORFOLK ESTUARY CO., 20, Whitehall Place, S.W.

SPECIAL OFFER TO THE TRADE FOR 1890.

KALANCHOE CARNEA.

Awarded a First-class Certificate, Royal Horticultural Society.

JAMES VEITCH & SONS

Beg to direct special attention to this Sterling Novelty.

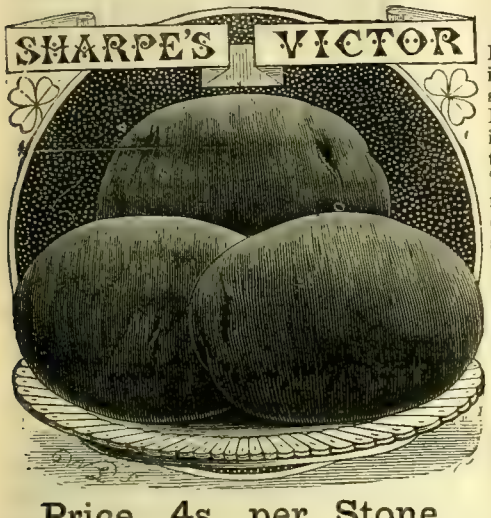
Retail Price, 1s. 6d. per packet. Trade Price on application.

ROYAL EXOTIC NURSERY,

CHELSEA, LONDON, S.W.

The Earliest of all Potatos,

"SHARPE'S VICTOR."



Sharpe's Victor is a seedling raised from the Alma Kidney and the old early short-top round Potato. It is earlier than any present variety, and having a very short top it is especially suitable for frame cultivation. Its precocity is such that it can be had fit for the table in eight weeks or less from the time of planting, and there is no difficulty in securing new Potatos for the Table every day in the year. Victor is a flattened roundish oval in shape, with a beautiful clear skin and extremely shallow eyes, being one of the handsomest as well as the heaviest cropper of any variety adapted for Frame work, or for a first early crop outdoors. It is dry and mealy when cooked, and the flavour and the quality of the flesh are superior to nearly every other variety at present in use.

Several seasons' trials have fully confirmed all that has been said in favour of the Victor Potato. It is proved to be the earliest, most prolific, and best flavoured of all the early Potatos; and for Pot Culture is unrivalled.

Price, 4s. per Stone. 14 lb. delivered free.

Supply limited. Early Orders are respectfully requested.

CHARLES SHARPE & CO., SLEAFORD.

200,000 RHODODENDRONS. — Fine, healthy, bushy stuff, splendidly budded:—
SEEDLINGS, 12 inches, 4s. per doz.; do., 18 inches, 6s. per doz.; do., 24 inches, 9s. per doz.
Finest named HYBRIDS, 18 inches, 18s. per doz.; do. do., 21 inches, 24s. per doz.
AZALEA PONTICA, 15 inches, 6s. per doz.; do., 18 inches, 8s. per doz.
LAUREL ROTUNDIFOLIA, 24 inches, 6s. per doz.; do., 30 inches, 9s. per doz.
IRISH IVIES, from ground, 3 to 4 feet, 25s. and 30s. per 100.
" " staked, in pots, 4 feet, 6s. per doz.; 5 feet, 9s. per doz.; 6 feet, 12s. per doz.
Packing free for cash with order, or delivered within 10 miles.
Special Culture of Trees, Shrubs, and Climbers, suitable for Town Planting. Special quotations for Parks, Squares, &c.
W. FROMOW AND SONS, Sutton Court Nursery and Seed Establishment, Chiswick, London, W.

FOR SALE, 10,000 GENISTAS, in 3-inch pots, at 8s. per 100.
FINE BUSHY PLANTS, in 40 pots, at 34s. per 100.
Cash with Order, payable at High Street, Leyton.
T. BALDWIN AND SON, Edith Nursery, Burchall Road, Leyton.

130,000 GOOD strong stout ASH PLANTS for Sale, from 2 to 5 feet high, at £1 per 1000, on rail at Liphook station. Also 20,000 good CHESTNUT PLANTS at 30s. per 1000.
Address J. MOSS, Stanley, Liphook, Hants.

LILIES and ORCHIDS.—An immense stock of recently imported Plants, compels a sale of the Established Plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains; see public journals for high prices recently obtained. The special offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and trade.
My first consignments of LILIUM AURATUM have arrived, prices 4d., 6d., 9d., 1s., and 1s. 6d. each; per 100, 30s., 35s., 45s., 55s., and 70s. Liberal allowance to the Trade.
Apply for CATALOGUE to
W. GORDON, The Nurseries, Amyand Park Road, Twickenham.

J. E. DIXON'S "PRESIDENT CARNOT" BRUSSELS SPROUTS.
J. E. D. will be able to supply this extraordinary fine strain at 1s. per packet, for season 1890. The following testimonial (one of many similar) has been received from—
Mr. GEORGE SUMMERS, *Gardener to the* Earl of Scarbrough:—
"DEAR SIR,—I have grown your President Carnot Brussels Sprouts by the side of several other well-known varieties, and have come to the conclusion that it is the hardiest and best variety grown."
London Wholesale Agents:—HURST AND SON, 152, Houndsditch, E.; COOPER, TABER AND CO. (Limited), 90, Southwark Street, Borough, S.E.
JOHN ETHERINGTON DIXON (second son of the late Edmund Philip Dixon, Seed Merchant, Hull), Seedsman, 21 and 23, Lord Street, Gainsborough.

INTERNATIONAL CHRYSANTHEMUM CENTENARY EXHIBITION and GRAND WINTER FRUIT SHOW.
Waverley Market, Edinburgh, NOVEMBER 21, 22, & 23, 1889.
Over THREE HUNDRED POUNDS in PLATE and MONEY for PRIZES, including the City of Edinburgh Cup, value £20.
ENTRIES CLOSE on November 15, 1889.
Schedules and particulars on application to
Messrs. MUNRO AND FERGUSON, Hon. Secs., 6, South Saint Andrew Street, Edinburgh.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.
The SHOWS for 1890 are as follows:—SPRING SHOW, APRIL 2 and 3, and AUTUMN SHOW, SEPTEMBER 10 and 11. The Council beg to intimate that they will hold a GREAT INTERNATIONAL SHOW in SEPTEMBER, 1891, when £1000 will be offered in Prize Money.
JOHN STEWART, Hon. Sec.

BARR'S NEW DAFFODIL "MRS. GEORGE CAMMELL." The Great Spanish Beauty. Amongst Daffodils this is the most distinct in character, and the most refined in beauty; perfectly hardy. 21s. per dozen, 2s. each; extra large bulbs, 30s. per dozen, 3s. each.
Barr's General Bulb Catalogue free on application.
Barr's Daffodil and Plant Catalogue free on application.
Barr's Rare Species of Crocus and Meadow Saffron List on application.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

Special Cheap Offer.
ISAAC MATTHEWS AND SONS have to offer 200,000 very fine plants of RHODODENDRON for forcing, Cunningham's White, Jacksonii, Caucasicum pictum, in sizes varying from 1 to 3 feet, at very low prices.
PONTICUM RHODODENDRON, from 3 to 6 inches, and intermediate sizes up to 4 feet, about 800,000; Seedling Hybrids, in sizes from 4 to 6 inches to 3 feet, about 400,000. All fine, bushy, well-rooted stuff.
HOLLIES, Common LAURELS, Portugal LAURELS, English YEWS, CUPRESSUS RETINOSPORA, AZALEAS, and other sorts of Surplus Nursery Stock too numerous to mention, at very reduced prices. 800,000 strong 4-yr. and 5-yr. THORN QUICK.
For prices and particulars apply to the Nurseries, Milton and Wetley Moor, Stoke-on-Trent.
CATALOGUES free on application.

THE FOLLOWING TREES, having stout, straight stems, fine heads, and splendid roots, all having been transplanted within two years:—
ACACIA BESSONIANA, 12 to 14 feet.
" SEMPERFLORENS, 12 to 14 feet.
ACER DASYCARPUM, 12 to 16 feet.
" " WIERII LACINIATA, 10 to 14 feet.
" NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
" REITENBACHII, 12 to 14 feet.
" SCHWEDLERII, 12 to 16 feet.
" WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, common, 10 to 12 feet.
" Purple, Pyramids and Standards, 10 to 16 feet.
BIRCH, Silver, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
" " Double White, 10 to 16 feet.
" " Scarlet, 12 to 16 feet.
" Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
" Guernsey, 12 feet.
LIMES, 12 to 16, and 20 feet.
" Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
" Scarlet, American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR, Bolleana, 10 to 14 feet.
" canadensis nova (the true variety), 12 to 16 feet.
" Lombardy, 14 to 16 feet.
SYCAMORE, Common, 14 to 16 feet.
" Purple, 14 to 16 feet.
THORNS, Double, Scarlet, 8 to 10 feet.
" " White, 8 to 10 feet.
WALNUTS, Common, 10 to 12 feet.

WEEPING TREES.
BEECH, Weeping, Pyramids and Standards, 8 to 12 feet.
" " Purple, Pyramids and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 6 to 10 feet.
OAK, Weeping, English, Standards, 10 to 12 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

ROSES on SEEDLING BRIER, strong and well rooted, all the best varieties, Dwarf H.P.'s and Teas, mixed. Our selection, 50s. per 100; 25s. for 50; 20 Post-free for 12s.—LAXTON BROTHERS, Bedford.

STRAWBERRIES.—Now is a good time to plant Laxton's Noble, Latest of All, Commander, A. F. Barron, &c. All orders until March next will be executed with an addition of 20 per cent. of plants without extra charge. Priced LISTS free.—T. LAXTON, Seed Grower, Bedford.

CHRYSANTHEMUMS.

Our New CATALOGUE for the present season is now ready, and sent Post-free, with full particulars of all the best in cultivation. This year we have specially prepared many thousands; cut down stock plants, which are now full of fine strong cuttings, both supplied at once, and must lead to victory and satisfaction next season. All warranted true.

H. CANNELL & SONS,
SWANLEY, KENT.

FOR PLEASURE AND PROFIT.

FRUIT. Nothing so profitable and easy to grow. 74 Acres in stock.
See CATALOGUE for simple Instructions and kinds of Trees to suit all soils.

ROSES. 20 Acres. Bushes 8*s.* per dozen, 60*s.* per 100.
☞ Packing and Carriage Free for Cash with Order.

ROSES IN POTS from 15*s.* per dozen.
ORNAMENTAL TREES, 91 Acres.
4 Acres of Glass.
CLEMATIS (80,000), 12*s.*, 18*s.*, and 24*s.* per doz.

SEEDS & BULBS. VEGETABLE, FLOWER, and FARM.
Descriptive LISTS free.

RICHARD SMITH & CO.,
WORCESTER.

SEAKALE.
FINE STRONG FORCING STUFF.
Samples and Price upon application.
THOMAS S. WARE,
HALE FARM NURSERIES, TOTTENHAM, LONDON.

JARMAN'S
BULBS,
ROSES,
FRUIT TREES, &c.
Illustrated Catalogue post-free on application.
JARMAN & CO.,
CHARD, SOMERSETSHIRE.

IMPORTANT.

I HEREBY GIVE NOTICE, that the Seed of my Pedigree Stocks of ONIONS harvested by me in 1889, *is only to be obtained* TRUE *in my own Sealed Packets, either direct from my Stores, or from those Firms I may be able to supply.*

H. DEVERILL,
ROYAL SEED STORES, BANBURY.
Nov. 1, 1889.

SPECIAL CULTURE OF FRUIT TREES AND ROSES.
A Large and Select Stock is now offered for Sale.
The Illustrated and Descriptive Catalogue of Fruits post-free.
The Descriptive Catalogue of Roses post-free.
THOMAS RIVERS & SON,
The Nurseries, Sawbridgeworth, Herts.

JERSEY FRUIT TREES AND ROSES.
Carriage Paid. Strong healthy trees, the finest that money can buy. Roses wonderfully cheap. Cordons a spécialité. Before ordering be sure to write for our Illustrated CATALOGUES.
JOSHUA LE CORNU AND SON, High View Nurseries.

KELWAY'S GLADIOLI
AT THE
PARIS INTERNATIONAL EXHIBITION, 1889,
gained in open competition, each time exhibited, the
PREMIER PRIZE.
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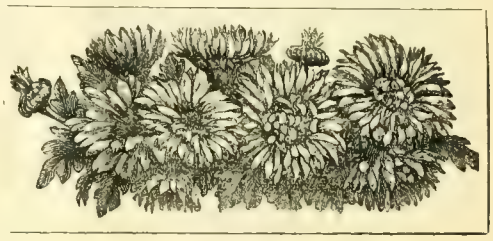
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OF A
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With Descriptive Article on the Genus,
A REPORT of the NATIONAL CHRYSANTHEMUM EXHIBITION, &c., &c., &c.



THE
Gardeners' Chronicle.
SATURDAY, NOVEMBER 9, 1889.

THE HISTORY OF THE CHRYSANTHEMUM.
BY W. B. HEMSLEY, F.R.S.

THE history of the Chrysanthemum has been so often written—more or less fully, and more or less accurately—that it may well be asked why it should be made the theme of a new essay. With the exception of stating that I intend making the present account as complete as I can, in a concise style, I will leave it to justify itself. As I propose giving at the end the full synonymy of the two species of Chrysanthemum from which the cultivated races have sprung, together with references to the numerous works in which they have been figured and described, it will be unnecessary to encumber the text in most instances with reference to anything beyond the names of my authorities. In explanation, it may be observed that the movement in connection with the celebration of the "centenary" of the introduction of the Chrysanthemum into European gardens suggested the idea; though, as the sequel will show, this is not the real centenary of its appearance in the west; yet its continuous cultivation dates back just a hundred years.

I have stated that I intend making the present sketch as complete as I can, but it should be understood that I mean from a literary and botanical, and not specially from a floricultural standpoint. The latter has indeed already been done in the pages of the *Gardeners' Magazine.*

EARLIEST RECORD.

Curiously enough, the earliest record of the Chrysanthemum known, relates to its cultivation in Holland two centuries ago! Jakob Breyne, a merchant of Dantzig, and author of several works on botany, among others one, published in 1689, on rare plants observed in the most celebrated gardens of Holland during the year 1688. In this little work, as Sabine long ago pointed out, the Chinese Chrysanthemums are most accurately described; and he also distinguished two species, which some subsequent botanists have combined as varieties of one

species, while other botanists regard them as specifically distinct. An elucidation of this point will be attempted later on. But these two species or types are evidently the "Matricaria japonica flore minore" and the "Matricaria japonica maxima" of Breyne, corresponding in part, at least, to the pompone and large-flowered Chrysanthemums. Of the former, he mentions a variety with white single flowers, and the same with double flowers. Of the latter, he gives a more detailed description, extolling the beauty and variety of colour of the flowers, and designating it as the most beautiful of all the composite radiate-flowered plants. In his own words:—

"Matricaria japonica maxima, flore roseo, sive suave-rubente pleno elegantissimo, Nobis. Kychonophane Japonensibus.

"Corymbosarum radiatarum omnium formosissima planta, atque Japoniæ insigne decus, minus fœtet quam Matricaria vulgaris, inque humanam ferme altitudinem fruticis ad instar procrescit, multis ramis; foliis majoribus, nec non multo longeque latioribus; floribus in ramulorum et caulis summo plerumque solitariis. Rosæ amplitudine, petalorum sesquiunciam longiorum, culmum latorum, in extremo frontatorum, suave rubentium multiplici fœtu luxuriantibus, qui tamen in medio, luteum discum parvum, haud sine jucundissimo aspectu, et singularem huic plantæ gratiam conciliantem, commonstrant. Semina solida vulgaris majora.

"Variat, floribus suave rubentibus, candidissimis, purpureis, luteo-obsoletis, carneis atque phœniceis."

According to the foregoing record, there were red, white, purple, pale yellow, flesh, and crimson varieties of Chrysanthemum in the gardens of Holland 200 years ago; yet, in spite of their easy cultivation, they must have soon disappeared, for no more can be learnt of them.

It would unduly lengthen this sketch to trace the history of the Chrysanthemum through the works of the numerous botanical writers since the time of Breyne; I shall, therefore, pass over many authors who merely copied from others.

The Earliest Specimens in Existence (1703).

James Cuninghame, or Cunningham, was a surgeon to the Honourable East India Company at Amoy, in China, from 1698 to 1703, when he brought home specimens of natural history from China and other places visited on the voyage. An account of them by Petiver was published in the *Philosophical Transactions* (1703), and the botanical specimens came into the possession of Sloane, and are now preserved in the herbarium of the British Museum. Two small double Chrysanthemums are among the specimens preserved in the British Museum, and they are apparently the first received in this country. Whether they are pure double forms of the smaller Chinese Chrysanthemum, or cross-breds between the two, it is difficult, or perhaps even impossible, to decide. They are the specimens figured by Plukenet, and referred to below.

A little earlier than Cuninghame's visit to China, in 1690, Rheede figured in his *Hortus Malabaricus* a double variety cultivated in South India. It is now, as it probably was then, cultivated all over India, and, according to Roxburgh, it everywhere bears the Hindoo name "Gool-daoodi." Gool signifies rose, but I have found no explanation of the meaning of the second part of the name. About the same date (1690), the celebrated Dutch traveller, Kæmpfer, visited China and Japan, and in 1712 he published his *Amœnitates Exoticæ*, wherein he describes nine varieties of Chrysanthemum, and speaks of their highly ornamental character. In 1784 Thunberg's *Flora Japonica* appeared, and he states that Chrysanthemums were cultivated in every garden and every house throughout the kingdom of Japan:—"Colitur ob flores pulcherrimos in omnibus hortis et domibus per totum regnum japonicum." These gleanings from the older authors will be sufficient.

Earliest Cultivation in England (1764).

In the eighth edition of Philip Miller's monumental *Gardeners' Dictionary*, we find it recorded that he cultivated the Matricaria indica at Chelsea in 1764. On reading his description, one would naturally suspect, as Sabine did, and as I also did, that there was some mistake, and that this plant was not the true Chrysanthemum. This is what he has to say concerning it:—"The third sort [that is Matricaria indica] grows naturally in many parts of India. I received it from Nimpu [Ningpo, in China?], where it grows plentifully. This plant rises a foot and a half high, dividing into many branches, garnished with angular oval leaves, which are acutely sawed on their edges, and are of a pale colour. The flowers are produced on footstalks which arise from the wings of the leaves, and also terminate the branches. These are in all I have yet seen very double, and fully as large as those of the double sort before mentioned [Pyrethrum]; these appear in July, and in favourable seasons are succeeded by seeds which ripen late in the autumn."

If this were the only evidence of the cultivation of the Chrysanthemum in England at the date in question, we should have to admit that, in spite of the name, the fact was not proven. Fortunately there was a condition connected with the foundation of the Botanic Garden at Chelsea, which was the means of indisputable evidence being preserved in the form of a specimen of the plant itself. On the authority of Field, the historian of the Chelsea garden, by the deed of conveyance of the land forming the garden from Sir Hans Sloane to the Apothecaries' Company, 1722, they were bound to present to the Royal Society fifty dried specimens of distinct plants from the garden annually, until 2000 had been delivered. This condition was observed until some 2550 specimens had been presented, and these specimens have since passed into the possession of the British Museum, where they are still preserved. Among those presented in the year 1764 is a specimen of a Chrysanthemum numbered 2112, and labelled "Chrysanthemum indicum foliis simplicibus ovatis sinuatis angulatis." It is not dated, but the number fixes the date, as the lists were published in the *Philosophical Transactions* as the collections were presented. It is a very good specimen of Chrysanthemum, with small, double flower-heads, and we can only suppose that Miller confused it with something else in his description.

Chrysanthemum indicum and C. sinense.

It has already been pointed out that Breyne recognised two species of Chrysanthemum from the East, and that they were subsequently confounded or regarded as varieties of one. This continued so until long after the reintroduction of the Chrysanthemum, though the differences had been pointed out by Ramatuelle, in an article which appeared in 1792, the substance of which will be reproduced further on. What follows will be more intelligible, if we anticipate that event to the extent of first giving the definitions of the two species. Joseph Sabine, one of the founders of the Horticultural Society of London, was the first to distinguish and describe them fully in English, which he did in a very elaborate and carefully-written illustrated paper in the fourth volume of the *Transactions* of the Society. This paper was read before the Society in February, 1821, and is very complete, historically as well as botanically, except that he failed to take up the name previously proposed by Ramatuelle for his C. sinense. As restricted by Ramatuelle and Sabine, and most subsequent botanists, C. indicum differs primarily from C. sinense in dwarfer habit, leaves green on both sides, flower-heads small and numerous, and in the ray and disk flowers being uniformly yellow, the former usually very short. Plates 12 and 13 in the fourth volume of the *Transactions of the Horticultural Society* represent Sabine's idea of this species, both single and double. Lindley (*Botanical Register*, plate 1287) figures what he regarded as C. indicum—a state with "single" yellow flower-heads, nearly 1½ inch across. The same thing is figured in Sweet's *British Flower Garden*, plate 193, under the name of C. tripartitum. Lindley was of opinion that the plant figured by Sabine in the place cited (plate 12), the single variety, was different from both C. indicum and C. sinense, and proposed the name C. Sabini for it. Maximowicz, who has had opportunities of studying the plants at home, regards both Lindley and Sabine's plants as C. indicum; and he adds that this and C. sinense are abundantly distinct in the wild state, though much altered under cultivation. Respecting the colour of the cultivated varieties of C. indicum, he states, "colores vero variant inter violaceum et luteum, albis roseisque exclusis;" and he says that no doubt hybrids between the two species have been raised by gardeners.

Restricting C. indicum to the yellow-rayed flower-heads, there is no difficulty in recognising the wild specimens of this species, but I am not convinced that it should be so restricted. Of this more anon.

Coming to C. sinense, Sabine (*Trans. Hort. Soc.*, iv., plate 14), we find that it was founded on "double" varieties; and Maximowicz appears to have been the first to attempt the identification of the wild form of this species. In the *Index Floræ Sinensis* I adopted his identification, and I also proposed a variety vestitum of C. sinense; but I was not satisfied with the arrangement. Since then I have again examined the material, and I have arrived at the conclusion that this variety vestitum is the wild state of typical sinense; and I have, I believe, more successfully classified the whole series of specimens in the Kew Herbarium. The purely botanical details of the limitation of the species will be published in another place. It will be sufficient to state here that wild C. sinense is a robust plant, very variable in foliage, which is thick, and always more or less tomentose, and the ray-flowers are always (?) of a different colour from that of the disk-flowers.

Singular to relate, apart from the records of Breyne and Miller, no reference to the cultivation of the Chrysanthemum in Europe is to be found of an earlier date than 1792, when Ramatuelle published an account of its introduction into France, together with a description.

Re-introduction of the Chrysanthemum into Europe in 1789.

This was due to a Mr. Blancard, a merchant of Marseilles, who brought home three varieties from China in 1789, one white, one violet, and one purplish, but he only succeeded in saving the last. As already stated, a French botanist, named Ramatuelle, recorded this event in 1792, and he published at the same time a detailed account of the differences between the two eastern Chrysanthemums, generally known as C. indicum and C. sinense. He is not only entitled to the merit of having distinguished the species botanically long before Sabine, but he also gave the latter a name under Chrysanthemum, which Sabine either overlooked or purposely ignored. Sabine, however, was not alone in overlooking Ramatuelle's name,

Chrysanthemum morifolium,

for, so far as I am aware, this name has not been taken up in any subsequent work, and I even had the satisfaction of adding it to the great *Index to Botanical Names* which is being prepared at Kew by Mr. Daydon Jackson. The majority of persons would doubtless agree that Ramatuelle's name was not, on account of the circumstances under which it was put forth, deserving of recognition; while others would admit that it was excusable on the part of index-makers to have failed to find it, as it only appeared in a foot-note in the middle of the memoir. Ramatuelle had his own idea as to the genus to which the Chinese Chrysanthemums should be referred, and in the text he describes the large one under the name of Anthemis grandiflora; but in discussing the views of other botanists on generic limits in a foot-note half a column in length, he proposes that, if the plant be referred to Chrysanthemum, then it might be called C. morifolium; and, on the other hand, if the views of Lamarck were to be accepted, and Chrysanthemum reduced to Matricaria, then it might be called Matricaria morifolia! Like

the Vicar of Bray, Ramatuelle was prepared to meet any differences in opinion, and unfortunately we cannot get rid of or suppress his inappropriate name. Apart from this question of nomenclature, his memoir is a very satisfactory one, and some of the historical facts deserve to be reproduced. It appears that in 1791, he sent about a hundred plants of this new purple Chrysanthemum to the Jardin des Plantes at Paris, believing that it was quite unknown to botanists, and he was not a little astonished when the learned professors declared it to be the Chrysanthemum indicum of Linnæus. Nevertheless, he was not satisfied, and went to Paris himself and compared his plant with the figures and descriptions published, with the result that he proved to the satisfaction of contemporary botanists that Linnæus had confused the two. But in all this, we need not follow him. The plants sent to Paris flourished and flowered, and he states that the flowers had undergone a modification, which detracted from the beauty they had exhibited in Provence. Instead of being split to the base on one side, the flowers were more or less tubular or quilled, sometimes half way up, sometimes to the top, so that the purplish-velvety colour of the upper surface or interior was concealed from view.

How rapidly this new introduction grew in favour may be judged from the statement that three years after the event there was scarcely a garden in the towns of Aix, Marseilles, and Toulon in which it was not to be found as abundantly as the China Aster. Ramatuelle further remarks that the only disadvantages were its hardy constitution and easy propagation, which rapidly brought down the price of plants.

Re-introduction into England (1795).

The history of the Chrysanthemum in England begins with the 327th plate of the *Botanical Magazine*, published in February, 1796, and prepared from a plant grown in the nursery of Mr. Colvill, King's Road, Chelsea, where it first commenced flowering in the previous November. This is a handsome crimson-purple variety, probably the very same introduced direct from China by Blancard, concerning which Curtis, the editor of the *Botanical Magazine*, says:—"We rejoice in the opportunity afforded us of presenting our readers with the coloured engraving of a plant recently introduced to this country, which, as an ornamental one, promises to become an acquisition highly valuable." It is figured under the name of C. indicum, without any reference to Ramatuelle's paper on the subject. Excellent specimens of this variety are in the Kew Herbarium, from the rich collection of J. Gay. They are dated Lausanne, 1809; Jardin des Plantes, carrés chaptals, 1815; and Jardin du Luxembourg, 1836.

Concerning the immediately subsequent history, I cannot do better than quote Sabine (1821), with some interpolations:—". . . This is the purple variety; it had been transmitted from France in 1790, and after its arrival here the changeable white was obtained from it by cultivation. [See *Bot. Mag.*, pl. 2042.] Between the year 1798 and 1808, inclusive, eight new varieties were imported from China into England in the following order:—the rose and the buff together, in 1798; the golden-yellow and the quilled-yellow together; the sulphur-yellow at the latter end of the same year; the Spanish brown, in 1806; and the quilled-white and large lilac together, in 1808. [See *Botanical Register*, 1815, pl. 4.] Of these the sulphur-yellow was imported for the late Thomas Evans, Esq., of Stepney, and the other seven sorts for Sir Abraham Hume. Later importations have produced two others—the tasselled-white, in 1816; and the superb white, in 1867. In May, 1819, Messrs. Barr & Brooks, of Ball's Pond, imported in the *Lady Melville* Indiaman, commanded by Captain John Stewart, three more Chrysanthemums (together with various other curious plants, under the charge of Mr. Joseph Poole, a gardener sent out by them for the express purpose of collecting Chinese plants), but these have not blossomed in sufficient perfection to afford opportunity for making correct descriptions of them."

Sabine proceeds to describe in detail all the twelve varieties then known in England, beginning with the Old Red, Old Purple, or Quilled Purple, as it was variously named. This, he states, was sent by Mr. Cels, of Paris, to the Royal Gardens, Kew, in 1790; but Colvill was the first to flower it, as already recorded. The Changeable White (*Bot. Mag.*, pl. 2042), alluded to above, was believed to be a sport from the Old Purple, and to have originated in the garden of the Bishop of London, at Fulham; Messrs. Lee & Kennedy, of Hammersmith, distributed it. The Superb White (*Bot. Reg.*, 1820, pl. 455) flowered first in the garden of Messrs. Barr & Brookes, at Ball's Pond, in 1818.

Sabine further describes two new varieties then growing in the Horticultural Society's garden. One of these, which he named the Quilled-flamed Yellow, he figures (*Trans. Hort. Soc.*, iv., pl. 14); the second he called the Quilled Pink, and it was subsequently figured in the *Botanical Register*, pl. 616.

At this comparatively early period in the cultivation of the Chrysanthemum in England, Sabine places Messrs. Colvill, of the King's Road, Chelsea, in the front rank of cultivators; and to this firm also the credit was due of having introduced and distributed the Old Purple, the forerunner of all the wealth of colour and form now familiar to us all.

Sabine followed up the paper from which I have quoted with several other contributions to the description and illustration of Chrysanthemums cultivated in the garden of the Horticultural Society. The first was read on February 6, 1822, and was published in the *Transactions*, vol. v., pp. 149—162, with beautiful coloured figures of Early Crimson and Large Quilled Orange. This paper brought the total number of varieties cultivated by the Society up to twenty-two. A third paper was read by the same author, on April 20, 1824; and it appeared in the same publication, pp. 412—428. A descriptive synopsis of twenty-seven varieties then known is given, and the following varieties figured:—Semi-double quilled pink, quilled salmon-coloured, semi-double quilled orange, and small yellow. Meanwhile, the curled lilac had been figured in Sweet's *Flower Garden* (plate 7), under the name of Chrysanthemum sinense var. involutum; and the superb clustered yellow (plate 14) as C. sinense var. fasciculatum. A fourth contribution to the history of the Chrysanthemum, by Sabine, appeared in the sixth volume of the *Transactions* (1826), where he summarises much that he had previously published, and states that the number of varieties then in their collections amounted to forty-eight. Four of these were sports, which originated in England, and all the rest, it was believed, were introduced from China, and twenty-eight of them by the Horticultural Society. Illustrating this paper are two admirable coloured plates, one representing the changeable pale buff, and the other the two-coloured red. In this paper Sabine describes two varieties of the C. indicum type—a double yellow, and a double white; and he mentions that the ordinary single condition flowered in the Society's gardens.

By this date the cultivation of the Chrysanthemum had made considerable advance in England, and Joseph Wells, gardener at Redleaf, and Donald Munro, gardener to the Society, had published accounts of their respective methods. The latter, it may be added, contributed a list of the varieties cultivated in the Society's garden in 1832, to the first volume of the second series of the *Transactions*, with notes on their ornamental merits, degree of hardiness, and suitability for different purposes. He records only one addition to Sabine's previous lists, and of the forty-nine varieties known to him, ten he regarded as not worth cultivating.

Up to this date the varieties of Chrysanthemum cultivated in this country were of Chinese origin, or mere sports; and in a condensed history like the present, it has not been attempted to give even the most meagre description of them; indeed this rapid sketch can only be regarded as a guide to sources of fuller information. They were almost wholly of the large loose type, and their names sufficiently indicate the colours. I must now pass on to another stage of the history.

(To be continued.)

New or Noteworthy Plants.

ALOE (EUALOE) MONTEIROI, *Baker, n. sp.**

This distinct new species of Aloe was sent from Delagoa Bay by Mrs. Monteiro, in 1886, and has just flowered for the first time in the succulent house at Kew. It belongs to the section Maculatæ, and comes nearest to A. obscura, Miller (A. picta, Thunb.), from which it differs by its narrower, longer, more channelled leaves, short pedicels, duller red flower and exserted stamens. Caudex very short. Leaves about a dozen in a dense rosette, ensiform, a foot long, an inch broad low down, tapering gradually to the point, recurved, channelled in the upper half, copiously spotted on both sides, armed on the margin with middle-sized deltoid-cuspidate spines. Peduncle simple, terete, above 1½ foot long. Raceme moderately dense, 4 to 6 inches long, 2½ inches in diameter; pedicels ascending, ¼ to ½ inch long; bracts linear. Perianth cylindrical, an inch long, dull red, tinged with green; tube constricted above the ovary; segments oblong, ⅓ inch long. Stamens and style considerably exserted beyond the tip of the perianth segments. *J. G. Baker.*

Chrysanthemum Training.

The illustration on p. 525, fig. 72, represents a fine specimen of an imbricated white variety flowered in the autumn of 1884, by Mr. E. Wills, gardener to Mrs. Pearce, Bassett, Southampton. It is stated that the variety lends itself capitally to the culture imposed by specimen-growing, the habit being profuse as regards lateral shoots, which in the plant figured were much less stiffly, and therefore preferably, trained than is usually witnessed in the imbricated section of the Chrysanthemum. The flowers are white, and the plant speaks itself for its abundant blooming habit.

Early Flowering Chrysanthemums.†

The Earliest Discoveries.

For some years before 1876, I was growing Chrysanthemums in the open garden, and I found that, very generally, just as they were coming into bloom, the frost came and spoilt the flowers, often in a single night. I observed that one plant bloomed in October. This was the old sort Drin-Drin, which set me thinking if it were not possible to have a race of early sorts. I found that very little was known of varieties blooming before November, but in the *Gardeners' Magazine* of November 11, 1876, a letter appeared from the Rev. F. Freeman, now of Wickersley Rectory, Rotherham, Yorkshire, from which it was evident that he was on the same track as myself. In the issue of the same paper for December 2, 1876, there was a communication from the late Henry Taylor, giving a list of thirteen sorts blooming before the end of October. These two communications made me sure that it was possible in England to have Chrysanthemums in bloom in the open before the frost came; and the hunt began. I soon found that Mr. Watson, then of the Marlborough Nursery, Islington, London, grew these plants in large quantities in small pots for trade purposes, but that he had few if any sorts beyond those in Mr. H. Taylor's list, which did not include C. nanum (the Sistou of the French). This came to me in 1877, from the Pine-apple Nursery in the Edgware Road, London, with the name C.

* *Aloe (Eualoe) Monteiroi*, Baker, n. sp.—Breviter caulescens, foliis ensiformibus pedalibus dense rosulatis sursum canaliculatis utrinque copiose obscure maculatis, dentibus marginalibus deltoideo-cuspidatis magnitudine mediocribus; pedunculo simplici elongato; floribus in racemum subdensum dispositis, pedicellis brevibus ascendentibus; bracteis linearibus; perianthio cylindrato obscure rubro, segmentis tubo brevioribus; genitalibus exsertis.

† By W. Piercy, Forest Hill, S.E. Read at the National Chrysanthemum Society's Conference, September 11, 1889.

nanum. In 1877, also, I procured Madame Picol, or Piccol, sometimes spelt Pecoul—I do not know which is right. I mention these not because they were the only varieties, but that they are still two of the best in their respective lines of colour. Madame Picol has since produced a red sport which is called Mr. Piercy, because it first sported at my place. I do not know who raised either of them, but that they came from France there can be little doubt. Some were probably known and grown as early as 1817, for the London Horticultural Society offered a medal for early-flowering Chryanthemums in that year, but I do not know with what results. Mr. Broome's little book, published in 1858, according to Mr. C. Harman Payne, in the *Gardeners' Magazine*, November 20, 1886, mentions thirteen sorts. Among these were Scarlet Gem, since called Little Bob, its proper name being Dr. Bois Duval, and Frédéric Pelé, which seems to have preserved its French name all through until now. These two are still grown, and F. Pelé is even now the best in its line for many purposes; but Dr. Bois Duval, although a fine colour and doing well in some places, is very a weak plant and difficult to keep in winter. Mr. Salter, in his book published in 1865, gives a list of fifteen sorts, but Mr. Harman Payne, in his notes referred to, does not say whether illustration was in either of those lists. This was one of the best old sorts, being hardy, robust, of good habit, dwarf, and free-flowering. It has had many names and several sports, and for a considerable time was the principal variety grown. Its proper name is Marie Longarre, as I imported it from France so-called. It is still grown by some, and is good for rough culture and common flowers. The first that I know about it is that it was procured by Mr. Watson, of Islington, from a churchyard at the West End of London in 1869, and it was the first variety he had. Précocité is another old sort still grown for large quantities of cheap yellow cut flowers, and holds its position because it is robust in the open ground, and also because of a slight incurving of the flowers, they pack and stand carriage well when put up in large bunches. I knew nothing of this before 1877. [In Salter's list of Chrysanthemums for the spring of 1869, we find fifteen varieties of summer and autumn flowering Pompons. Ed.] A few years previous to this, most people seemed to know nothing about early-flowering Chrysanthemums; others said they were quite common, but some of the latter were persons who if you were to show them a bit of the North Pole, would say they had seen plenty of that before.

Later Seedlings.

Early in 1878 the late Mr. Helman, of Croutes, Guernsey, sent me some cuttings without name, which he did not know, and could not find out, so I named it after that place, Saint Croutes. It turned out to be identical with the one found by the Rev. F. Freeman at Saddington Rectory, Leicestershire, hence called by him Saddington, but found afterwards by importation from France to be Pollion. It is still the best in its line, not in its original colour —pink—but white, to which it sported a few years after at Tooting, Surrey.

It must ever be borne in mind that the qualities desirable, and stamping many of these sorts as good and best, are quite different from those of the late sorts, and those to win prizes at shows, with the exception of such as Madame C. Desgranges and Leoni Lassali. They are not fit for the long stick with a flower-or-two-at-the-top-sort-of-plant, or those monstrosities which look like a kind of illustrated loo table, both of which shapes no Chrysanthemum, either early or late, ever grow into naturally.

The most striking point to advance in general estimation these early sorts, to silence objectors, and to stir up the indifferent, was the discovery in the summer of 1879 of Madame Castex Desgranges, by Mr. Robert Parker, at that time of the Exotic Nursery, Tooting, Surrey. This was found by him in a lady's garden in Wales. On March 15, 1880, he gave me two little plants of it, and from those two little plants and his stock, the bulk of those now in cultivation have come. As is customary, as soon as this variety became known, we had the cry common in such cases, that it was known before. Old French catalogues were found in which there was the name, but no one had seen the plant. Others said they had it, but I did not find they had the stock. It was on the lists of Mons. Lemoine and Mons. Crousse, of Nancy, France, of March, 1881, but I expect they had it from England the year before, or raked it up from some place in France, for we had heard nothing of it from them before March, 1881. Lemoine says it was raised by Boucharlat. Crousse spells it Desgranges. However, it was then, and is now, the best early Japanese, either in its white and yellow colour, or its primrose sport, named Mrs. Burrell. It was a curious thing that the very next summer that we heard of the first yellow sport of Madame C. Desgranges, I found it had sported in six places the same colour. This is one of the curious aspects of sports, that after a plant has been grown for a number of years from seed, it sometimes, the same year or the next, sports in a second or more places, just in the way that we have three sports of Mdlle. Lacroix in three places, in 1888; other sorts never sport at all, as in the case of nanum, although it is now old. I have known it since 1877, and it has been grown in all sorts of places and in large quantities for cut flowers, never varying in the least, but being neither better nor worse than the first year it was grown.

At the end of 1881 we received from Mons. Lemoine, of Nancy, France, Lyon, which is one of the very best early Pompons we ever had or have. Its faults are its delicacy in winter and sparseness of cuttings, but in all other repects it is first-class. I have counted 434 florets in a bloom. It is now to a great extent superseded by its red sport, Alice Butcher, which is in every repect the same except colour, and reds are much more scarce, and much more liked by the ladies, who are great factors in the cut-flower trade; besides, the original colour much resembles Blushing Bride. At the end of 1881, too, we received also from Mons. Lemoine, Mdlle. Jolivart. This is still one of the most beautiful and useful Pompons we have. I have not found anything to surpass it in all its good qualities. It has never sported, being white as at first. It was in 1881 that we also received for the first time La Vierge, a white October bloomer. I denominate all that bloom up to the end of September early, and those that bloom in October semi-early, which terms are about equal to the French *précoce* and *hâtive*.

In 1883 we first discovered the merits of a new sort imported from France by Mr. Ware, of the Hale Farm Nurseries, Tottenham, London. It was called Late Flora, but why it was so designated we know not, for it is very early, and the best yellow Pompon in its line. It is a reflexed yellow flower, and blooms for months together, commencing in August. We have dropped the Late, and now call it Flora; but there are two more Floras, late ones.

It was not till 1885 that we found the one we named Blushing Bride. It was among a lot of wrongly-named old sorts and rubbish imported from France by Mr. Davis, of the Lilford Road, Camberwell, London, and is believed to have been raised by some amateur. This is still the very best in its line, and will bloom twice in one season. In 1886, Mr. T. S. Ware imported from Mons. Pertuzes, of Toulouse, the raiser, Leoni Lassali, which was of an entirely new type among the early sorts, being a large ivory-white flower of a semi-incurved character. It is very beautiful in many respects, not so profuse a bloomer as some, but that is made up for by the beauty and size of the flowers. It blooms in August, and stands alone, being a large-flowered sort, not Japanese.

Grace Attick is the last grand new sort entirely distinct that we have received. I believe it was raised in New York by Mr. John Thorpe, and imported by Mr. Cannell, of Swanley, Kent, in 1887. It is a quite new type of Japanese, a white large flower on a dwarf plant. The very earliest of all Chrysanthemums, blooming a month earlier than nanum, and coming out at the very beginning of May, under glass of course. I believe that this plant will be largely grown, and should we be able to seed it in England, or in some other climate, it will probably be the origin of an entirely new branch of the early blooming sorts. It is very dwarf and bushy, a good grower in summer, but weak, very liable to damp off in propagating in spring, and with a disposition to bloom itself to death in summer.

The great uses of these plants are to decorate gardens in the open, even in the North of Britain, where the late kinds would be destroyed by the frost, and to fill the gap in the season between the summer flowers and the November Chrysanthemums. Their dwarf and bushy habit fits them very well for pot-plants for decoration and sale as such, while their capacity to supply cut flowers is unbounded. Considering the small amount of labour and expense, as well as the durability of the flowers in a cut state in water, they are perhaps the cheapest and most effective flowers to grow. Besides, there is one great point more in their favour—they will grow and flourish in the smoky and dirty air of towns and suburbs, where few plants will flourish, and where no Rose will live and bloom.

Future Progress.

As to the progress in future, the aspects are most promising. Years ago I began to grow seedlings. My first lot grew very well, and when blooming-time came they were still growing into plants of vast size, but no sign of bloom appeared. I then heard, "Oh, they do not bloom the first season." So I saved them till the next year, when their size was magnificent; but the bloom, when it came, was such that we threw them all away at once. Subsequent batches were no better. These were all with foreign trade seed. I then began to look around, and on the railway slopes at the back of my ground saw the wild English Chrysanthemum Leucanthemum, the Ox-eye or Dog-daisy, in bloom in May. So I thought to double that, but it was no good; all the seedlings came exactly like the parent, in every way so very different in that respect from the seedlings of the other Chrysanthemums, which I then attributed to the foreign seed being from mixed plants. I could get no seed from the really early sorts till Mr. John Thorpe sent me a small packet of early seed from New York in 1885, from which I raised over 100 plants, among which there was only one really good early variety, which I named Piercy's Seedling. This was my first real success in raising new kinds, for it is really good. But I wished to raise my own seed, so that I should know what I was doing. I tried in vain, and sent plants to Mr. Laxton, the seed-grower of Bedford, on hot, sandy soil; and to Mr. Elliott, of Jersey, with no better results. The seeds, under a strong glass, were seen to be infertile. I then proposed to send the early sorts to the South of France and Algeria, and the Rev. F. Freeman sent some to Ohio, U.S.A.

Home-grown Seed.

In the meantime, I was on the look-out for some early single sort. This, through the craze for single flowers, I procured by the kindness of Mr. W. H. Cullingford, who grew a lot of seedlings from seed he had from Mr. Hartland, of Cork, Ireland, and named Hartland's Marguerite. It was a great, tall, profuse-blooming, nearly single, white Pompon, and I had plenty of seed from it the first season. From this seed, the next year, I selected two dwarf plants of the best character, and from the seed of these I have now some real beauties. I still have one of these, which I call Seedbearer, which, even in last year's bad season, perfected good seed.

When I first grew the seed of Hartland's Marguerite, it was with immense surprise I saw that instead of the plants being all alike, they were nearly all different from the parent, though there was a family likeness in some of them. Last season I again grew the seed of these two selected plants separate, and have as their descendents—Goldsmith, a fine early yellow Pompon, which will bloom twice in one season; Clara, good early white Pompon;

Miss P. Broughton, late white Pompon; White Lady, lovely early white Pompon; Dod's pretty little yellow dwarf Pompon, and others. Besides these, the year before last I had good seed from Salter's Early Blush, from which I have raised an advance on it I have named Jacintha. We have also, from the seed of these two seedlings, among the plants grown at Mr. Ware's nursery, last season, a very beautiful, dwarf, white Pompon, named Duchess of Fife; it is about a foot high, and was in bloom August 12. The flowers resemble Mdlle. Marthe. It is entirely different from all others. We had also from this same lot of seedlings grown at Mr. Ware's the most beautiful early yellow Pompon in cultivation. We have named this Golden Shah. The colour is the very finest deep yellow, very bright; the flowers are 2¾ inches across, deep, full and reflexed. The plant grows 2 feet high, with slender but strong habit; the foliage very spare indeed, and each flower has a good long stalk, so that every bloom can come out, which renders it very good for cutting purposes, besides giving the plant a very elegant appearance. It is a very rapid grower. Thus, two plants raised from cuttings inserted on March 24, were in full bloom by July 25; and two more struck on May 24, were in full bloom by July 29. It stands rain wonderfully well for so delicate a flower, and it is certainly the very finest early English seedling up to this time, as well as being the best early Pompon, English or foreign. It is remarkable also as being raised from seed saved at Forest Hill, and only two generations from the poor white Hartland's Marguerite, which was nearly single. All this is not only good as regards Chrysanthemums, but very wonderful as an illustration of vegetable physiology. I regard it as a revelation in itself worth having, apart from the gain of such a plant.

The greatest and earliest friends and helpers in what I may call the modern history of these sorts, which began in England about 1863, are Mr. Shirley Hibberd; Mr. Watson, sen., now of Bowes Park, Wood Green, Middlesex; Mr. N. Davis, of Camberwell; Mr. W. G. Head, of the Crystal Palace; and the Rev. F. Freeman. I have to thank all these gentlemen and many others for their friendly help, and also the members of the horticultural press, not forgetting Mr. Libby of the *American Garden*, New York.

We now want a few more enthusiastic amateurs, and any spare money we can get, for these are the things to help on the progress of these early varieties, which appear capable of boundless extension.

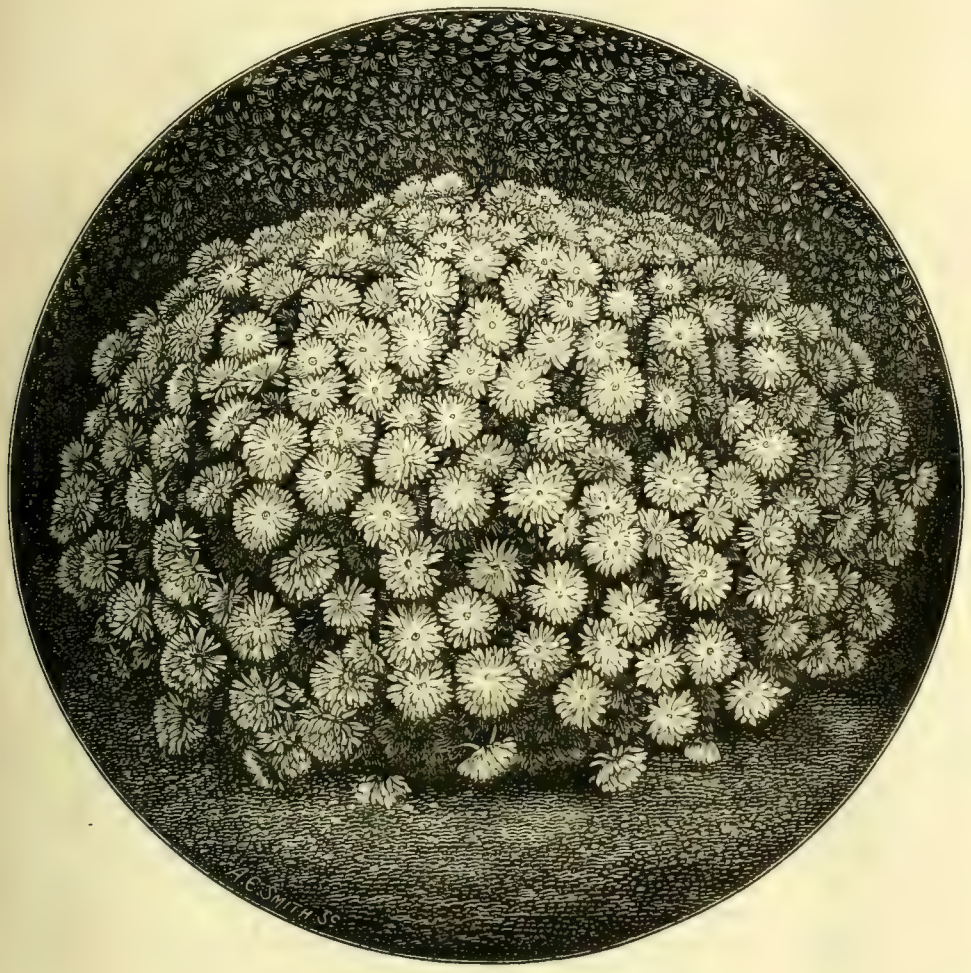


Fig. 72.—Chrysanthemum La Nymphe. (see p. 524.)

PROGRESS IN CHRYSANTHEMUMS.

Mr. Shirley Hibberd's paper, read at the Chrysanthemum Centenary meeting at Chiswick on Tuesday last, under the above somewhat vague title, treated of the evolution of the flower as illustrated in its development in European gardens in the past one hundred years. He said a flower of this kind was removed by man as far as possible from natural influences, and the direction of its development was in great part determined by the cultivator's taste. It was especially worthy of observation, in entering upon the subject, that we did not, as makers of the flower, begin with the wild forms that man had not till then touched, but we began with an old favourite of the gardens of China, Corea, and Japan; and not only so, but all the several types of reflected, incurved, Japanese, and Anemone flowers were established in the East ages before the West knew of their existence. Many fine varieties that would not be classed as Japanese were obtained from China in the early days of the present century, and there was no evidence to be found in the history of the occurrence of a new type as the result of European cultivation. Comparing early with late flowers, however, the differences were enormous; all the early kinds were rough and wanting in dignity, as compared with those that had found favour in Europe in the last fifty years.

The multiplicity of types and styles was advantageous, as affording scope for the exercise of a variety of tastes. When the Japs were coming in like a flood in the days of Mr. Salter, the London florists objected to them, on the ground of their extravagant departure from the code of properties that then prevailed, being so enamoured of the incurved flowers as to need time to discover beauty in the new comers. But a school of florists in the south of France hailed the innovation with joy, and Frenchmen who had failed to find in the incurved flowers the properties that pleased them, took to the Japs, and quickly produced a magnificent series of new varieties, the effect of which, on the mind of Europe, was to establish the Chrysanthemum in the highest degree of popularity as a florist's flower. The men were in each case better than the schools that owned them, and they learned to perceive in each other's special favourites rights to divide honours with their own.

Regarding the dark reflexed Kiku, figured in *Bot. Mag.*, p. 327, as the first of its group, it would be found that Involutum or Curled Lilac, figured by Sweet, 1823, might be regarded as the first proper incurved flower. The first of the Japs was, undoubtedly, the Quilled Flamed Yellow, introduced from China by Captain Drummond for the Horticultural Society in the year 1820. A number of examples were given of Anemones, Anemone Pompons, and Lilliputians, and the structure of the flower was explained with especial reference to the organs of reproduction. Beginning then with the types ready formed, it will be seen that the European florists have, in less than a hundred years, accomplished more for the flowers than the Chinese cultivators in the thousands of years during which they profess to have regarded it as a favourite. They had a circle to begin with, as is the case of any Asteraceous flower, but out of this simple form they had evolved infinite variety, for while a perfect incurved flower differed so greatly from a fantastic Jap, the same fundamental lines were traceable in both, were essential to both, and the variations consisted in added adornments. But geographical influences co-operate with diversity of tastes in the fashioning of the flower. The general tendency of taste in raising and selecting is to sterilise the flower, and the incurved varieties represent the most completely sterilised forms, while the Anemone-centred is a form in which fertile florets occur, not by accident, but as an integral part of the true model. Corea is a cold country, and Japan is a cold country [except in the South. Ed.], and their climates had contributed to the sterilisation, which, in the case of the incurved, had been completed by British cultivators. Indeed, this, the most perfect, and the most exacting of all forms of the flower known to us, is really a cold climate form, as our friends in the South of France discovered in its refusal to be managed by them; while, on the other hand, the Japanese type in their hands became as a new creation. These facts are of vital importance in the study of the making of this grandest of all florists flowers. If we are to have new forms we must have fertile flowers to begin with, and we must cease to disbud, give no preference to this or that bud, allow the plant to show its flowers, and as the climate is too cold for seeding, we must make a climate for the purpose. English cultivators have hoped for seed from incurved flowers of the noblest forms and proportions, in accordance with the Shakespearean motto,—"From fairest flowers we desire increase;" but a first-class incurved flower was as incapable of producing seed as the bud that never opened.

But we are not entirely dependent on seed for new

varieties, for this is a sportive plant, and a considerable proportion of our gains in new varieties have been by means independent of the cultivator, who has only had to keep what Nature gave him without his asking. Sports were probably of seminal origin; in other words, they represented the parentage on one side, or further back than the immediate progenitors; and the occurrence of the sports that appeared to be identical at different places at the same time seemed to prove that the quality newly exhibited in the sport was an inheritance, and of strictly seminal origin.

Looking to the future, Mr. Hibberd discussed at some length the developments that might be anticipated. Referring to a figure in the *Keramic Arts of Japan*, and to one of the customary blue Chrysanthemums on a Japanese *cloisonné* jar that he placed upon the table, he said we might hope for a much nearer approach to blue and to red than any flowers had as yet shown, but it was unlikely, and perhaps undesirable, that high positive tones of blue or scarlet should appear. We may hope for more blue and more red, and for the full development of an agreeable odour. The Asteraceous order is characterised by the production of aromatic principles that often are far from pleasant, and our favourite is given to the manufacture of an odour that reminds one of Camomile. But a very trifling variation in the constituents of aromatic substances would often make all the difference between odours that create disgust or that give delight, and there were a few examples of pleasantly-scented "mums" to encourage us. We had gone forward in the development of form, but we should have to go backward to obtain anything like a new departure, for all our forward work tends directly to sterilise the flower and bar all further progress.

CHRYSANTHEMUMS IN THE IMPERIAL GARDEN AT AKASAKA, TOKYO.

THE following is a translation from *Hochi Shinbum*, the *Tokyo Post*, of an account of the latest of the famous annual Chrysanthemum shows in that city. The translation was made by Mr. K. Miyabe, the Japanese botanist now in Cambridge, Massachusetts.

According to the yearly practice, the gardeners in Tokyo and Saikyo raised many rare and splendid varieties of Chrysanthemums for the Imperial Garden by the special order. On November 8 the members of the cabinet, the foreign ministers and a few others, were invited by the court to the "Chrysanthemum Banquet." On the day following, the higher officers, of the government and nobles were allowed to see the show.

The following accounts are written from what we have heard from one who enjoyed this special privilege:—The first bed, 18 by 120 feet, was placed just behind the Senkinkaku (arbor). The entire bed was roofed with screen mats made of reeds, in order to protect the flowers from frost and sun. From post to post on three sides of the bed a curtain or screen, made of purple silk, with the imperial badge, the Chrysanthemum, relieved in white, was tied round with crimson-tasseled ribbon. The flowers were at their prime. They were of different colours, and their diameters seemed to be about 3 or 4 inches. Several hundred of these plants were arranged without any regular order in the bed. Among them, one called the Sugawara, with petals red inside and yellow on the outer sides, and the Kagaribi, with its crimson flowers, attracted a great deal of attention.

The next bed to the left was roofed with oiled-paper screens, the rest of the surrounding structures being just the same as the first. In this bed all those varieties having the filiform petals were arranged. A white flower called the "Aunobiki" is worthy of note; the petals were fine as threads, drooping down in tassels like a water-fall. One variety with crimson petals tipped with yellow was very conspicuous.

To the right of Shuhotei there was one bed 12 by 60 feet, planted with thirteen different root-stocks, each supporting numerous grafted branches, rising from the stem a little above the ground, and crowned with flowers of different colours and shapes.

Next, to the right, was a bed (18 by 60 feet) for large-flowered varieties.

Parallel to this was a bed in which only three plants were set out. The first one, called the Golden Dew (Ogonno Tsuyu), was decked with 338 blossoms, all golden-yellow. The next named, the Hanakai, had 253 blossoms of red colour. The last, the Sanono Watari, was covered with 173 white blossoms, and impressed one as the best of the three. The flowers were all about 1½ of an inch in diameter.

The next bed contained about 420 plants of about sixty different varieties. Each plant was allowed to bear only one flower, and the diameter of the flowers was mostly about 15 or 16 inches. This bed seemed to be the crowning show of the day. The banquet was held in an arbor set up on the lawn just in front of this bed. *Garden and Forest.*

PLANT NOTES.

SAXIFRAGA FORTUNEI.

MY experience of this plant in Cheshire is not quite the same as that of "D. D.," recorded on p. 508. Until lately, I have not been very successful with it, either as an indoor or an open air plant. Last spring I tried planting some pieces in peat soil, close under walls facing north-east; these are now flowering far better than my pots of the same plant in the greenhouse, and up to this day (November 3) are quite uninjured by storm or frost. I have tried with success this plan of planting close against walls things liable to be damaged by untimely frost. It answers very well with the early Hellebores, which require a sunless aspect; also with the late-flowering Bœnninghausenia albiflora, which is now in full beauty, but likes a southern aspect. *C. Wolley Dod, Edge Hall, November* 3.

SAXIFRAGA WALLICHIANA.

This plant is well adapted for small beds on the lawn, patches in the perennial border, or as an edging plant. The pure white flowers, of the size of a shilling, are produced in summer, in great numbers, making the plant very effective at that time, as does the bright green hue of its leaves at all times. As a rockery plant, and in pots, it is valuable. Cuttings put into sandy soil on a sunny border, just at the end of the flowering season, root readily if kept moderately moist. Transplant when rooted.

This Saxifrage and others of like growth, such as hypnoides, are good plants to cover beds to be afterwards planted with bulbs, but in such positions two years is long enough to let them grow without replanting, either with rooted cuttings or divided plants. The former make the more level carpet. *F. M.*

CHRYSANTHEMUM HÆMATOMA.

In spite of the rather sharp frosts we have already had this autumn, this handsome species is still flowering bravely in the open border. It is a native of Madeira, and is found on the sea cliffs and rocks, and reported to be found only here and there, quite up to the top of the island, flowering May to July. Mr. Lowe, in his *Flora of Madeira*, says:—"A bush of this species on its native black or grey and barren crags, one mass of lovely rose-pink flowers, and conspicuous from afar, like a Camellia or a Rose-bush, is a truly splendid and surprising sight; the flowers, however, are very inconstant in intensity of colour, and, removed from the neighbourhood of the sea, the leaves also lose their extremely rigid, fleshy character. The leaves, as it grows with us, are still succulent, the subcorymbose head of flowers just slightly tinged pink. It forms a shrub about 2 feet in height, and makes a handsome border or rock plant during summer, flowering as it does from early June until now. It is not hardy, and may be increased from cuttings, which root readily, or the old plants may be lifted, when they will continue flowering in a warm greenhouse.

CALLA PALUSTRIS.

The past season seems to have suited this Aroid nicely, as we never remember to have seen it in so beautiful fruit as we have it at present. It is a curious semi-aquatic, or bog-loving species, as its name denotes, a native of Northern Europe and North America, and an exceedingly ornamental plant for the margins of lakes or shallow ponds. It may well be, if the water is not too deep, planted in conjunction with the charming Cape Pond-weed (Aponogeton distachyon), the Calla prolonging the season with its large bunches of coral-red fruits, an exceedingly beautiful and interesting sight at this unusually dull time out-of-doors. When once fairly established in a shallow pool or pond it will give little trouble; it increases rapidly by running stems, producing in spring abundance of pretty pale green heart-shaped leaves just above the water, and followed in summer by its curious spathes of silvery-white flowers. Increased by division of the root-joints and seeds. *D. D.*

THE GROVE, STANMORE.

WITH 15 acres of its own garden and pleasure grounds, and situated on the border of Stanmore Common, with fine surroundings in all directions, the fine estate of Mrs. Brightwen affords great scope to the gardener, a circumstance which many years ago seems to have been taken advantage of, as evidenced by the fine views arranged or opened up, and the noble Coniferous and other trees planted, most of which are now fine objects. Among them we noted a perfect specimen of Cryptomeria japonica between 40 and 50 feet in height; Abies nobilis, nearly as tall; Araucaria imbricata, over 30 feet; some noble Wellingtonias, Libocedrus decurrens, Cupressus, and, indeed, grand examples of most of the Coniferæ from the pigmy Abies claubrasiliana to the giant Spruce Fir. Looking over the lake, which is frequented by most of the British aquatic birds, there is a fine view, and that from the terrace across the dell exhibits great variety of colouring in the various shrubs planted for that purpose, and among which the tall Dimorphanthus mandoshuricus is prominent; while in the grounds a great variety of hardy flowering plants is tastefully arranged by Mr. J. W. Odell, the gardener, who has a good knowledge of plants generally, and what is equally necessary to ensure success—a great liking for them. In one part of the garden a collection of British Ferns is the main feature; in another beds of Primula denticulata, and other Primulas appear; further on, a combination of white Marguerites, blue Salvia and scarlet Lobelia give good effect. In the small corner devoted to bedding plants, the old Cuphea platycentra was certainly the most beautiful of the various plants used; and everywhere about the garden, clumps of Iris, Pyrethrum, and other hardy plants are being arranged, the most favourable spots being reserved for the rarer things now in the frame ground, where also a select lot of terrestrial Orchids and Cape bulbous plants are provided for.

THE GLASS HOUSES,

since Mr. Odell has re-arranged them, and set the heating in order, have greatly improved in appearance, and in the quality of the things grown in them. In the large stove are some grand specimens, which would grace a floral exhibition anywhere. Here are plants of Davallia Mooreana, Microlepia hirta cristata, Allamandas, and other foliage and flowering plants 6 or 7 feet across, and on the roof a fine show of flowers on Bougainvillea glabra, Dipladenia boliviensis, Gloriosa superba, Rondeletia speciosa, Aristolochia elegans, Jasmines, &c.; and in a smaller sunk house are a fine lot of Eucharis amazonica, varieties of Hymenocallis or Pancratium, Crinums, Poinsettias, and other things wanted to help to make a show,

with the splendid lot of Gardenias in the plant pit which were now just coming into flower.

The greenhouses have a varied lot of plants, the love for uncommon things being shown in many an old species of the class usually denominated "botanical." Here are Ericas, Epacris, and other New Holland plants, Azaleas, Bouvardias, the scarlet Nerine Fothergilli, Vallota purpurea, golden Crocosma, Begonias, Primula obconica, Plumbago capensis, &c., a large batch of the pretty Schizostylis coccinea, and of that neat and fragrant introduction of Messrs. Jas. Veitch & Son—Kalanchoe carnea—being ready to come in to carry flowers over the winter. The blue Salvia Pitcher and S. prunelloides and other things are also grown for that purpose, and a house of Maréchal Niel and Niphetos Roses promise plenty for cutting. In the pits are a large lot of Primulas, Cyclamen persicum, and things of like nature, all well grown.

The Orchid-houses

contain what may not be called a collection, but a varied assortment of plants, whose vigour and floriferousness seem to warrant a better provision for this department. A few Dendrobes are in flower, such as D. chrysanthum, also Zygopetalum Mackayii, Pleione maculata, Masdevallia Davisii, M. amabilis, &c., and several Odontoglossums and Lælia anceps are in bud.

Here the Calanthes are finely cultivated, and a great show of flowers are promised by the fine plants now about to be dried off. The conservatory is tastefully arranged with tall Palms, behind which a pretty fernery is arranged, the whole being brightened with plenty of flowers. The fruit-houses still have evidence of their crops in a fine house of Grapes still hanging. For those who like beautiful natural gardening, and have a taste for rare hardy flowers and uncommon indoor plants, a visit to The Grove would prove a pleasant one at any season of the year, and under the care of Mr. Odell its attractions are sure to increase. [The publication of this article has been deferred, Ed.]

FRUIT TREES ON HILL-SIDES AND IN MEADOWS.

However important culture and Conferences may be, the proper sites and physical condition for successful fruit-growing are far more so. At one of the earlier conferences at the Crystal Palace, I ventured to ask Mr. Rivers, of Sawbridgeworth, Herts, for any information he might possess on the cultivation of fruit trees on poor soils. This was expressing in a somewhat exaggerated form an idea I have long held that to make any great and substantial progress in the cultivation of hardy fruits, we must utilize existing soils and sites, in very much their present state, in large numbers, and over wide areas. For it is the preliminary cost of draining, trenching, manuring, fencing, sheltering, &c., that warns so many occupiers and owners off from an extension of fruit culture. Now, if it can be proved to the satisfaction of occupiers and owners of land that most of these preliminary expenses are not only superfluous, but injurious, the chief obstacles to the extension of fruit culture will be removed. "J. D.'s" brief but lucid record of what Mr. Barlow, whom so many of us know, and all respect, has done in North Wales, is invaluable as a stimulating example. He simply broke up a portion of the hill-side on the banks of the Little Orme, about 18 inches deep, and planted from four to five thousand fruit trees.

The result has been almost more than could have been anticipated, trees of extraordinary vigour, and fruit of unusual size and of the finest quality. In proof of this "J. D." states the facts: the fruits took first honours at the great fruit shows marshalled by Mr. Lindley in the Botanic Gardens, Old Trafford, and that some of the Apples and Pears turned the scale at or over twenty-two ounces. To the question may others hope to do likewise? the answer is yes and no. Taking the negative first—no—because few have the horticultural genius or cultural skill of Mr. Barlow; but it is not needful to match or rival this gentleman to make substantial profits in fruit culture. Yes, without doubt, or faltering may be the answer, if it be true, as "J. D." states, that there must be hundreds, nay thousands, of acres of soil as good and in quite as favourable positions in North Wales, where the land is at present not worth 7*s.* 6*d.* rent per acre, and which might be turned into flourishing fruit gardens. Yes, and tens of thousands of such acres in Scotland, England, and Ireland only waiting to be planted to yield a reasonable return as fair profit.

If any preliminary expense has hitherto arrested the enterprise of the planter, on the very threshold of his undertaking, insecurity of tenure, uncertainty as to profit and sufficient compensation—for though the value of fruit trees left on hired holdings have also restricted investments in these directions—such hindrances will speedily be removed.

Another great check to planting consisting in the long time that often intervened between planting and produce, the mischievous fallacy that once had a grain of truth in it and now has none, that he that plants Pears plants for his heirs, has held back the hands of many timid planters, so that possessors and heirs have both been starved of Pears. But the trenching, the draining, the manuring, the forming the shelter, these have become an inseparable barrier to the extensive planting of fruit trees. Let it, therefore, be stated emphatically that land that will grow good Mangel, Wheat, or grass will generally give excellent fruit, and this frequently without even trenching 18 inches deep, and breaking up the subsoil 6 inches more.

This last seems to me the only blot on "J. D.'s" culture. No doubt it is orthodox so far as that most authorities recommend it, but Nature in this matter may be wiser than Art, and it is certain that Nature does great things in the production of timber as well as seed on very hard subsoils. May it not be possible that she is wiser than the wisest cultivators.

It is either true or it is not that surface-roots favour fertility. If true, why invite them into the subsoil by breaking it up 6 inches deeper? Even the 18 inches surface trenching may often be dispensed with. A tilth deep enough for Mangels or Potatos is deep enough for fruit trees. It took cultivators years to ruin Nature's work by getting the roots of their fruit trees 3, 4, or more feet into the ground. We are now raising them nearer the surface every year, and will probably end by planting them in the natural tilth of a foot or so deep, that Nature has formed for them over such large areas of Great Britain and Ireland.

Tens of thousands, too, of naturally drained lands admirably adapted for fruit culture, are to be found on the banks of such rivers as the Clyde, the Tay, and the Thames. The banks of streams and rivers, as a rule, are better for fruit culture than the lower valleys, inasmuch as the soil as well as the atmosphere are more favourable to fertility. Writing broadly, the pampering and overfeeding of the past has ended in failure or very partial success. It is full time to try a new and hardier regimen, over wider and new areas, for our hardy fruits. In this valley in North Wales fruit trees throve admirably, even before the advent of Mr. Barlow with his superior skill and culture; and there are thousands of acres only waiting for the trees to yield good and prompt returns. For years, it may be generations, they have been ameliorated and enriched by the productive consumption or decomposition of annual crops of herbage. These have enriched the soil with food sufficient for possibly a dozen or a score of years. Plant the trees, and leave them to their fate, or, rather, watch and see how they grow and fruit; while they do both satisfactorily, leave them alone.

Should heavy cropping seem too much for their strength, then feed them on the surface, and adopt the annual or biennial dressings to their strength and their condition. Very simple, very delightful, and very profitable work. But suppose you began on the old lines. Sink a good deep drain 4 feet, manure heavily, and plant in this improved tilth. You may have 6 feet growth the first or second year; soon barrenness, canker, failure, and the usual abuse of our home climate, which renders it impossible for us to compete against the Americans and the Canadians in the matter of hardy fruit growing.

Let us be truthful at least, and write down most of our failures to cultural stupidity, deep planting, and inordinate draining, especially at the start, leading all too often to utter neglect and starving towards the finish. *D. T. F.*

LINUM TRIGYNUM.

How seldom it is that one sees this good old greenhouse plant in anything like fine condition, and yet, under certain treatment, it is one of the easiest things we have to grow, as it is remarkably free in habit, and may be struck fresh from cuttings in spring, and got to a good useful size by the winter. Unless large specimens are wanted, this is perhaps the best way of managing this Linum; but we always keep part of our stock two years, so as to have bushes 2 feet or so through. The way we manage is to cut all back after flowering, and then stand the plants in a light place in a vinery or Peach-house at work, so as to afford them gentle heat and the benefit of a frequent syringing to induce them to break. This they soon do, when what cuttings we want are taken, as soon as they are long enough, from the old plants, which are then thrown away, and the younger ones shaken out and repotted. This is done in a mixture of loam and peat or leaf-mould, and the latter, in about equal parts, a combination of soils that just suits the Linum, as plants root readily in it and grow with great freedom. As soon as potted, the plants are again stood in a warm moist house and kept well sprinkled, the object of this being to prevent red-spider, to which the Linum is particularly subject, and is the most frequent cause of failure in its cultivation.

The way to manage plants during the summer is to have them all together and plunge the pots in leaves or tan in a pit or frame, and there syringe them heavily both mornings and afternoons, taking care when doing so to well wet the under parts of the leaves. To get the requisite amount of heat, it is necessary to close early, and on very sunny days it is as well to afford a very thin shade for a few hours, just to break the fierce rays. By continuing this treatment, plants will be in first-rate order by the autumn, and should then be moved to the greenhouse, where, if they can enjoy a temperature of from 45° to 50°, they will flower in the greatest profusion, and keep on for weeks in succession. As to the cuttings, they strike like weeds in any warm house if they are kept close and moist by having a handlight or bell-glass over, just to keep them from flagging. *J. S.*

SYON GARDENS.

Since the lamented death of Mr. Woodbridge, little has been heard of the work done in these famous old gardens. It is a matter of no inconsiderable difficulty for any gardener who comes, as Mr. Wythes did, from a place comparatively unknown, to one of the reputation Syon always possessed, and follows a man who enjoyed a first-class reputation. Many modest men—and Mr. Woodbridge's successor is undoubtedly a modest man—would have felt exceeding diffidence not only in undertaking the charge of a garden hitherto so highly esteemed, but one specially subject to the full light of publicity as Syon is; but Mr. Wythes, although modest and unassuming, has, at least, moral courage, allied to undoubted capacity; and as his charge has been of sufficiently long duration to enable stock to be taken of his capacity, it is with much satisfaction I find that Syon is rather improving than receding—that,

in fact, every department bears ample evidence that in gardening, as in everything else, there is as good fish in the sea as ever came out of it.

I looked in at Syon the other day very unexpectedly both to myself and the gardener, and was, with the utmost courtesy, shown throughout every house or pit in the place, and they are, indeed, legion. I saw everything looking first-rate; there was no evidence of the slightest failure in any department, but, farther, everything was progressive and admirable. In the huge range of glass known as the conservatory, the two lofty end houses are full of Camellias and other large plants, the picture of health and luxuriance, buds on the former plants being set in exceeding profusion. In the temperate-houses on either side of the tropical-house, filled with Azaleas, Heaths, and myriads of other hardy and soft-wooded plants, all was first-rate; whilst the central figure of the range, the grand tropical houses, seems to have developed wonderfully since last seen, and to have such a gigantic mass of tropical vegetation crowded into a space neither high enough or broad enough by one-half, that to keep it all clean and healthy is indeed a severe trial to any gardener, although it is at Syon wonderfully well done.

The gigantic Bamboos are grand indeed. Pity it is that so noble a piece of vegetation, without its equal probably in the kingdom, should not be found in some lofty transept or dome, where its full proportions might be seen, and the tops of the lofty growths not have to be taken off, lest they should remove the roof of the house in which they thrive. Several of the gigantic Palms have had to be lowered into the soil several feet, to keep them within the bounds. Throughout the whole of the pits at the back of the conservatory, filled with plants for house decoration, Ferns, Crotons, Dracænas, small Palms, and an infinitude of things, all is luxuriant health and perfect cleanness. Big masses of Poinsettias, dwarf, stout, and finely-leaved; Gardenias, in great quantities, plants from cuttings 1-year old being preferred as more readily cleaned, and producing fine blooms; large masses of the valuable Hymenocalliss for cutting from; in fact, something of everything.

The long range of fruit-houses in the kitchen gardens is now nearly filled with several hundreds of fine Chrysanthemums in pots, or are otherwise utilised, except where, as in one or two cases, the work of renovating inside borders is proceeding, showing that improvements as needed are being carried out with skill and judgment. The lofty Banana-house is another grand example of tropical vegetation; I should say houses, for there are two devoted to the culture of these monster plants, which are developed from suckers every year and grown to an immense size, and fruited in about the twelve months. Musa paradisiaca at the back, goes up to a height of some 10 or 12 feet, and produces clusters of fruits rather smaller than are those of M. Cavendishii, but are decidedly of more pleasant flavour. Cavendishii, with its majestic leafage, occupied the front of the beds, and literally fills the place with its growth. Musas are rarely grown to fruit in this country, but certainly the example at Syon is one to be seen and appreciated. The sweet-perfumed Vanilla covers the ends and back of one of these houses.

The collections of Orchids, and of Calanthes and Cypripediums especially, are in capital condition—could not indeed look better. The exigencies of family requirements compel the cutting of flowers so fast that a show cannot be found at any time, but there is a wondrous wealth of material to produce it, and all in the best possible state.

Eucharis amazonica is in very fine form. The old stock, affected with the disease, literally died out, and Mr. Wythes has worked up a grand lot indeed from two small potfuls he brought with him from his former place.

Some 5000 plants of Keens' Seedling, Noble, President, and Sir J. Paxton Strawberry plants, in pots for forcing, are in splendid condition; they will shortly be stacked on their sides, a plan found to answer admirably, and to be the economiser of space for the winter.

A lot of tall cordon Pears, found not to thrive on the north back of the lofty Musa-house, has been shifted on to an east wall at 2 feet apart, trained somewhat obliquely in the hope that the change will promote fruitfulness. A number of Apricot trees which did not thrive on this latter wall have been transferred to a south-west aspect, where Apricots do fruit abundantly, whilst a quantity of rich Morello Cherries, lifted from where too thick, have been planted to cover the wall of the Musa-house, which they will in time, and crop well, no doubt, for Morellos are found to fruit abundantly on that aspect. Then a very interesting addition to the Apple products of the garden has been made of late in the planting of one hundred small horizontal cordons in some seventy sorts, and these bid fair to carry fine fruits next year, being now well established.

On a north border in the kitchen garden a large quantity of hardy flowering plants have been planted, in the hope that they will furnish a wealth of flowers during July and August, months during which there is a large demand for flowers. Amidst an abundance of vegetables of all kinds, Mr. Wythes has a fine bed of the new Victoria spinach, really a wonderful kind for leafage. It looks as if intermediate between the round and prickly kinds, but more robust than either, and found to be the best all-round variety for all seasons. A remarkable feature in the discipline of the garden is found in the attendance of a capable teacher twice a week (evenings) to give the young men some educational and scientific instruction—a practice worthy of being widely copied in other gardens. *A. D.*

BUDDLEIA AURICULATA.

The exhibition at Chiswick, on Tuesday last, of fine cut specimens of this plant from the gardens of Sir George Macleay, gives us once more an opportunity of calling attention to a very charming greenhouse plant that is very rarely seen. The habit indeed is somewhat straggling, but this might be overcome by judicious pinching. The under side of the leaves is covered with greyish-white stelliform hairs, and the numerous cream-coloured, tubular violet-scented flowers are compacted into terminal and axillary spikes. The plant is probably as hardy as its near ally, B. Lindleyana, that is to say, it will bear ordinary winters in the south, but succumbs before what the French call a grand winter. (See fig. 73, p. 529.)

Orchid Notes and Gleanings.

ORCHIDS AT THE WOODLANDS, STREATHAM.

This collection grows in interest under the care of Mr. Abraham, Mr. R H. Measures' gardener, and although the month of October is not the best one in which to take note of Orchids in flower, nevertheless there were many attractive plants in bloom. A handsome display was created by several good flowering specimens of the comparatively new Cattleya Bowringiana [this plant was noticed in our issue, October 26]. A fine specimen of the rare Lælia Perrinii nivea, not to be confounded with L. P. alba, presented a striking contrast to these, with its large flowers the sepals and petals of which are pure white, and the lip of a pale rose, lightly stained with yellow in the throat. The rare and ornamental Eulophia guineensis var. purpurata was also in flower, and is remarkable for its deep rose-purple sepals and petals, and still deeper coloured beautifully veined lip. Among the many Cypripedia in bloom, those which attracted most attention were C. regale, a fine hybrid between C. purpuratum and C. insigne Maulei. The upper sepal is large, deep green at the base, tinged and veined with purple, and decorated by a pure white margin at the apex. The petals are dark crimson at the base, becoming paler at the tips, where a whitish margin is observable, while the lip is of a deep vinous purple. Specimens of C. Harrisianum and C. Ashburtoniæ expansum were attractive, but they were put somewhat in the shade by a grand plant of C. Arthurianum, carrying seven flowers, which have a striking resemblance to both parents—C. insigne and C. Fairieanum. The upper sepal has a fine white broad border above a deep green area, which is heavily blotched with brownish purple. The deflexed petals which indicate the Fairieanum blood, are yellowish-green, veined with purple-brown, and the same colours predominate in the lip. There was a fine specimen of C. Mrs. Canham. This hybrid appears to improve with culture, for Mr. Measures' plant had two large flowers on the same scape, and which measured respectively 5 inches and 5½ inches across vertically. The upper sepal has white narrow border, surrounding a reticulated dark purplish area. The upper portion of the petals is of a dark shining purple, which is very conspicuous against the lower whitish yellow portion. The long conical lip is pale green washed with brownish purple in front, and having several purple spots on the inflexed lobes. *Joseph Godseff.*

Lissochilus speciosus.

Touching Mr. John Watson's remarks and criticism on my note at p. 419, and which, owing to my absence from home, I regret having been unable to notice sooner. I may say that Mr. Watson's plate of the plant is that published in Paxton's *Magazine of Botany*, iv., p. 25, and I would ask him to look at it again a little more carefully, when he will readily see that the flower-scape is undoubtedly lateral. I would also ask him to look at the plate in the *Botanical Register*, 573, where it is shown in a more marked manner; therefore, seeing that those plates, as well as our plant, all show the growth as lateral, I hope that Mr. Watson will accept this as proof that the scapes are produced laterally. As regards the colour, everyone conversant with Orchids knows that it is exceedingly liable to vary; that it does so in this species may easily be seen by comparing the plates before-mentioned, where the side-lobes of the lip mentioned by Mr. Watson as cream-colored, are nearer to a shade of purple in the *Botanical Register*. However, the colour (purple) is much more in either plate than in our plant, where it merely amounted to small spots as before-mentioned; true, on some of the flowers there was just a suspicion of the purple, but not nearly so marked as in the plates. I may mention that the yellow in both cases is of too dingy a shade, but considering the period at which they were done, one must make considerable allowances for artistic discrepancies. The plant is now out of flower, but the position of the flower-scape may yet be easily seen should anyone still feel sceptical on the matter. *F. R.*

Lycaste Skinneri alba.

A very large and really magnificent specimen of this variety of Lycaste Skinneri is now to be found flowering in the choice collection of Reginald Young, Esq., Linnet Lane, Aigburth, Liverpool. On the plant in question there are twenty fully expanded flowers, and several more in bud. The foliage is strong, clean, and healthy, and its deep green colour serves as an admirable background to show up the flowers. *Visitor.*

A Grape-vine from China and Eastern Asia.—It was stated in a recent number of the *Revue Horticole* as being a very noteworthy fact, that this species of Vitis begins to grow out-of-doors at a very early period of the spring. This year it was found that, in spite of the cold rainy weather then prevailing, the buds of these Vines began to unfold a month earlier than those of any Europæan varieties; and on April 28 every shoot had developed, and bore numerous bunches, and while the shoots of native Grape-vines were frozen, those of the Vine above-mentioned did not suffer in the least from the unfavourable weather.

ARTILLERY PLANTS.

Pellionia Daveauana, or, as it has been called, Begonia Daveauana, is a pretty stove plant, with a drooping habit of growth very suitable for draping the edges of stages, or as a basket plant, either alone or when used in conjunction with other suitable subjects which can be used for such a purpose. The leaves are small, somewhat resembling those of the Begonia Rex type, the centre portion of the leaf is of a silvery-green, having a margin of dark chocolate colour. They require restarting once or twice during the year, as in time they are apt to grow out of the useful stage; cuttings strike freely at any time of the year, though perhaps the best time to attend to this is the spring and autumn time, placing from six to eight in a 5-inch pot. It has also another interesting feature belonging to the set of so-called Artillery plants. If a stem bearing flower-buds which are ready to expand be held near to the ear, distinct reports may be heard, and small clouds of pollen may be seen in the air; often the stamens uncoil one at a time in quick succession. This doubtless is for the purpose of cross-fertilisation without the aid of insects. It flowers freely, so as to admit of this interesting feature being witnessed almost the whole year round.

Loam, leaf-soil, and sand, mixed together, form a suitable compost in which to grow them. Though like a Begonia in foliage, the flowers show it to be one of the Nettle family.

P. pulchra.—This bears some similarity to the above species. The leaves are thicker, and arranged closer together upon the stem; they are of an oblong shape, rounded at the apex, and very prettily marked, the veins being broadly marked with a blackish hue,



Fig. 73.—Buddleia auriculata: flowers cream-coloured. (see p. 523.)

while the interstices are of slatecot tint. The stems are fleshy, and it is hardly so quick in growth as the above. As its specific name implies, it is a very pretty inmate of the stove, and should be treated in the same way as the first named species. It seldom flowers.

Pilea Schlechtendalu.—This plant is quite distinct from P. microphylla, which is in general cultivation; it is an excellent companion to the above, differing from it in the leaves being larger and not so acute as in that species. The colour of the leaves is darker, with a glaucous tint upon them, it is very dense and compact, and should be grown in the warm house. Propagation may be either effected by cuttings or seeds. We received it from Kew several years ago. Like the better known kind, it is a good representation of the artillery plant. This interesting character that the stamens possess is very patent to a number of the Urticaceæ to which the above plants belong; it is common in the stinging Nettle Urtica dioica, and may also be seen in Parietaria diffusa, the wall Pellitory, Bähmeria nivea, the Chinese grass cloth plant, and doubtless many others. *W. Harrow, Botanic Garden, Cambridge.*

DIRECT INFLUENCE OF POLLEN ON THE ORANGE.

In spite of what some botanists set forth as Nature's unvarying law, the question of the immediate and direct influence of pollen on fruit should, in the matter of the Orange and Lemon, and all Citrus fruits, be considered as one which has been settled.

For weeks each season I have been carefully examining the exterior and interior of Oranges growing on Maltese Blood trees, and on the Imperial Blood of the St. Michael family, which have a navel mark not common to either family. I have singled out these two families of the Blood Orange with the navel mark because I consider the three Oranges as the best of all Oranges, and have made careful experiments for years, hoping and expecting to combine in one Orange the superior points of the Blood and the Navel.

These Blood Oranges having the navel mark are completely changed in outline, in their exterior and all through, by the effect of the pollen of the Navel trees. From being naturally oblong, they become somewhat flattened, the flavour is changed, and the cellular form of the pulp is changed.

Of twenty Oranges having a navel mark recently cut from a Maltese Blood tree, standing beside a Washington Navel tree, only two of the Oranges had a single seed, eighteen were seedless, while nineteen in twenty of the Bloods which were not marked by the navel had one or two seeds. Not always does the pollen of the Navel show its effect in the lengthened axis. Sometimes you find an Orange shaped like the Navel except the umbilical mark is wanting on the outside. Inside there is no axilar centre; the inner Orange has spread all through the fruit. There are two sorts of pulp, two sorts of fruit-cells, and two separate and distinct flavours.

A few times I have seen an Orange cut from a Majorica tree, one side almost solidly coloured, like an Imperial Blood, pulp dark as wine; the other side not a trace of rubricate, the divisions of fruit-cells as distinct and clear as though they had been fenced off by an impassable dividing line. One side the decided piquant flavour, sub-acid, that a thirsty man gratefully remembers on a hot day; the other, the fruity flavour of a Strawberry or Black-cap Raspberry, with juice quite as dark as that of the latter berry. Such an Orange I cut at Ocala during the exhibition, last winter, and observing visitors noted the difference in flavour as well as strong contrasts in colour in the two sides of the same Orange.

Some time later I cut a Prata Orange, such as L. W. Sherman, of Boston, sells for "whites," because the rind is a pale lemon colour. I noticed before I cut it, longitudinal, single rows of rubricate oil cells, running from flower to stem as straight as the lines of longitude on a school globe. The opposite cheek of the Orange had splashes of them, giving a beautiful contrast to the pale lemon shade. I was not surprised to find in the pulp, usually as pale and white as a Villa Franca Lemon, rubricate tints.

I then went to the row of trees on the opposite side of the Blood Oranges, and soon found on one of the outside branches of the Ribbed Du Roi, an Orange well marked as a Du Roi, save the blossom end, which was a well-defined Blood. I cut and found a more deeply-coloured Orange than the average Bloods, with not a seed, although the Du Rois are not wanting in seeds.

Among the ornamental dwarf Orange trees at Belair, President Berckmans, during a visit last winter, called attention to one found with rind not unlike the shell of the old Crook-neck Squash when ripe, the exact counterpart of which he had seen on a tree in a distant part of the grounds. The distant tree originally came from Japan, and has not been bearing more than three years. I know such Oranges were never seen there on the tree on which he saw it, till this one strange tree began to bloom and bear fruit. Now tracks of this ribbed and warty fellow are again and again seen on the other trees.

In March last, I cut a cluster of five Oranges from the tree sent me by Wm. Saunders, Superintendent of the Grounds of the Agricultural Department at Washington, labelled Bahia. The cluster looked precisely like similar clusters growing on an adjoining St. Michael tree. Cutting them all, I could see no difference in seed or flavour from the St. Michaels; the same sharp acid, the thicker, rougher, and tougher rind than that of the Navels—not a thing to remind one that the sap of a Navel tree nourished those five St. Michael Oranges.

Some years since, I procured from A. W. Rountree, of New Orleans, the Double Imperial Orange. I budded a number of trees from the tree he sent. They bloomed fully for the first time last February and March. The past summer and autumn I found again and again Oranges on adjoining trees so exactly like the real Double Imperial, that the novice would say they were the same. This Orange (the Double Imperial) has an exterior, as E. H. Hart says, *sui generis*, and quite distinct from most Oranges. It has as much pollen (yellow, too) as any Orange bloom I ever examined. It is one of the coming Oranges for Florida.

Meanwhile, let me say, a race of Oranges which can completely metamorphose whatever other variety its pollen touches must be most prepotent indeed. Out of the two strains, the Navel and the Imperial Blood, will come the future Orange, which the intelligent lovers of the queen of fruits will say are the best. Their price will depend on the conscience of the seller. Note that Palermo Imperial Bloods, on March 1, sold in Boston at 4.35 dols. a box, when average Palermos sold at 1.50 dols., and less. *Lyman Phelps.*

[The phenomenon of the direct influence of foreign pollen upon the fruit of various plants has long interested naturalists. It is a matter of much practical importance, too, to horticulturists, if certain fruits, especially those belonging to the Squash and Melon family, change and deteriorate, as some assert, by the influence of the pollen from other plants of the same family acting upon the ovaries from which these fruits develop. Persons interested in the subject will find a summary of what is known about it in a paper by M. Maximowicz, published in the *Journal of the Royal Horticultural Society*, new ser., iii., p. 161. See also Darwin's *Animals and Plants under Domestication* (English ed.), i., 39; Asa Gray in *American Journal of Sciences and Arts*, 2 ser., xxiv., 442, and Darlington's *Fl. Cestrica*, 2 ed., p. 555. —Ed. *From Garden and Forest.*]

THE APIARY.

GLASS SECTIONS.

There is still great talk about these for honeycomb. Many varieties of sections have now been in use for a great many years, and certainly honeycomb looks very beautiful in glass sections of whatever shape or size; they will probably always be slightly dearer than wooden sections. Care must also be taken to keep glass sections warm, or the bees will not readily take to them. Generally speaking, glass sections may be broadly divided into two kinds, viz., those that are kept together entirely by the honeycomb, and those that are not; the latter are about as cheap as wooden sections, but there is little doubt that the cylindrical section is very handy, as well as being beautiful when finished. The latter are made by Messrs. Breffit, of Thames Street. They are easily fitted into crates, and placed over the bees. The foundation is put in the centre, and must be of a circular shape, which will just fit in. We had several of these nicely finished last summer, though not in time for the Royal Agricultural Show. It will be well during the winter for the beekeeper to consider what sections he will employ next season, and prepare accordingly.

HIVES.

Besides these things, it is also advisable to consider whether new hives will be required, and if so, how many, and of what kind. As far as I myself is concerned, I have tried a great variety of hives, some better than others, but have done so rather to advise others than for any other purpose, as it is always better to find out some good pattern and keep to it, especially if the sole purpose is to obtain honey. It is quite certain that there is nothing more comfortable for the bees than straw, or straw and wood combined. Bees always winter in straw better than in anything else, as I have proved. There are numbers who have discovered this, and hence so many kinds of hives are now made of straw and wood. The hives here referred to are, of course, bar-framed hives.

The weather has been very seasonable for bees lately. They have been able to get some glorious flights; but, of course, stores will be diminishing very fast. Bees which have been properly looked after and not unduly robbed of their store, ought to go into winter quarters in a very satisfactory state. All danger of robbing may now be considered at an end, and, in consequence, entrances may be opened to the full length. A good circulation of air (not draught) is beneficial. *Bee.*

PLANTS AND THEIR CULTURE.

The Stove.—During the past month we have had very little sunshine, and more than ordinary care will have been required to keep the inmates in this department in a healthy state, and to keep plants at rest when an access of artificial heat has been necessary. The temperature should be reduced as low as is consistent with the health of the plants; and the minimum given last month will still apply where the collection of plants is mixed. Such as are at rest, place at the cooler part of the house. The warmth at night ought not to exceed 60°, with a rise of 10° during the day. Crotons and other foliage plants should be syringed frequently, and always in the morning, and observing to direct the water to the undersides of the leaves. Now is a favourable time to give stove plants a perfect cleansing, at the same time shortening back straggling shoots and renewing the fastenings. Clean the glass at short intervals, so as to admit all the light possible.

Gardenias whose flower buds are swelling, may receive weak liquid manure occasionally, and all should be kept clear of mealy-bug. We use petroleum emulsion once or twice a month for these and other plants subject to mealy-bug, and with the syringe freely employed, very little sponging of the plants is required. This soluble petroleum is much more easily applied than petroleum in its liquid state.

Eucharis amazonica which have been kept drier at the root, may be put in the warmer part of the stove, a few plants at a time, also Hymenocallis macrostephana. These latter afford a quantity of bloom. Poinsettias will be benefited by a little more warmth, and a few of the forwardest plants may be placed on shelves in a forcing-house, to come in in advance of the general collection. A dry house moderately warm, with a free circulation of air, will now be best for Poinsettias; some of the latest of them may be retarded by placing them at the cooler part of the house, but it will not be well to keep them in a lower temperature than that, or loss of leaves will follow; give manure-water occasionally. Plumbago rosea needs similar treatment to Poinsettia. Euphorbia jacquiniæflora should get a light position near the roof, and at the warmer end of the stove. This is a plant which receives a check if over-

watered, or grown where it is subjected to cold draughts.

Eranthemum pulchellum and E. Andersoni coming into bloom will require more water than formerly, and some kind of manure applied to them. Thyrsicanthus rutilans, a good decorative stove plant, should be placed where it can show its racemes of bloom, and be kept free from brown scale, to which it is very subject. If the plants were propagated in spring, their flowers will be forward; and the plants should be watered with Clay's or Standen's manure. Linum trigynum, a plant much liked for its bright yellow flowers, should be grown where the house is dampest, as when placed near to the hot-water pipes its leaves are never free from red-spider. Dipladenias and Clerodendrons, required to flower early, should be rested, and taken from their trellises and tied round a few stakes, and placed out of the way at the back of the house. Allamandas and Bougainvilleas will need similar treatment, and should have all weak growths cut out. Amaryllis keep dry in a cooler house, and place on shelves and out of the reach of drip. Achimenes may be laid on their sides under the stages in the stove; as may be also the pots of Caladiums and Gloriosas, and not wintered in a lower temperature, or the bulbs of the former will decay, and the Gloriosa lose their foliage. These last, if placed in a dry place, will require to be occasionally watered, so as to keep the tubers plump, and avoid dry-rot, a malady to which large tubers are subject. *Geo. Wythes, Syon House, Brentford.*

The Orchid Houses.

Potting Disas.—October or the beginning of November is the best time to repot Disa grandiflora and others of its section, D. racemosa, D. tripetaloides, &c. This is the showiest section of the genus, and is also by far the easiest to cultivate, for when once their requirements are understood, the various species may be made to thrive, flower, and increase like weeds. Half pots or deep pans are good for them, and after turning out the old stock from the pans or pots they occupy, the stoutest pieces should be potted, to make the flowering specimens for next season, and the weaker pieces placed in store pans for stock to supply stout flowering plants for the year following. The drainage having been placed in the pans or pots for about one-third of the way up, the stoutest crowns should be potted singly if preferred, or four or five together, using as a potting material rough peat in lumps, with pieces of sandstone, charcoal, or other porous substance worked in during repotting; also a little living sphagnum moss may be used, but I am sure that far too much sphagnum is generally used for Disas. Disa grandiflora is, of course, the general favourite, but D. racemosa has proved itself to be a very handsome and free-growing species, and D. tripetaloides for freeness of growth and profusion of bloom will be much liked. D. pulchra, too, is a noble species. I have them and other species doing splendidly in one of Messenger's "Novel plant protectors," where the greater part of them will have to remain during the winter without any artificial heat. The safest method of growing these plants is to keep them during summer and until late in the autumn in a cold shady frame or unheated pit, and afterwards from now onwards until the flowers are opening in a cool house. A shelf near the glass generally suits them well, but they thrive in almost any position in a suitable house. Watering overhead from now onward had better be abstained from, and in the matter of water at the roots, the plants, although they should never be allowed to get dry, do not like to be always very wet. Good waterings with rain water at rather long intervals suit these and most other Orchids better than a little water applied frequently. *James O'Brien.*

Fruits Under Glass.

The Fig-house.—Most of the fruit is now gathered from the trees in the late house; therefore keep up a small amount of heat with ventilation, gradually reducing the former as the leaves fall off. The trees in the early-house should be pruned and kept quite cool until the time for starting has arrived. Examine the border, and do not let it become dry now, or at any other time.

Grape Vines.—As soon as the leaves fall in any of the vineries the vines should be pruned, and if scale or bug have been troublesome, the rough, stringy bark should be stripped and rubbed clean off, using a flat piece of boxwood for the work, this being not so liable to injure the tender inside bark as a knife. Special attention should be paid to cleaning the old spurs, these offering good covert for insects, and they are usually the worst infested. A mixture of lemon-oil and Gishurst Compound, half a pint of the former to 8 oz. of the latter, dissolved in a gallon of warm soft-water, is a mixture which I find very effectual when well rubbed in with a paint-brush. The house must be cleansed and repainted to make a perfect cure.

Late Grapes will require to be constantly looked over for decayed berries. Keep a circulation of air in the vinery, and a little heat in the hot-water pipes, the temperature ranging about 50°, except when it is very cold outside. Avoid spilling water about; remove decaying matter, falling leaves, or anything that is liable to cause dust or induce decay. The outside border should be protected from rain and snow.

The early vinery should now be quite ready to be started, and if there should be the convenience for it, a ridge of sweet Oak leaves is a very good thing placed in the house, and turned over two or three times a week, the pleasant moist heat given off by these being very suitable for Vines being forced. The outside borders should be protected from the weather, after examining them as to their state of moisture. If the Vines are not likely to start uniformly all over, it is well to bend the tops of the rods down to the front part of the house till the eyes show signs of breaking, when they may be replaced in their former position. A temperature of 50° may be maintained, and the Vines syringed once or twice daily. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Trees on Northern Aspects.—Advantage should be taken of fine days to push forward the pruning and nailing of Morello and other fruit trees occupying northern aspects, so that much of it may be done before cold weather sets in. In pruning the Morello, the shoots should be left rather thinly over the space to be covered — 4 inches apart is about a suitable distance—and plenty of space allowed in the shreds. It should be borne in mind to lay in shoots, to take the place in the future of the older ones, which become in time unfruitful. Dressings may be applied to eradicate insects. For this purpose, soapsuds diluted to a reasonable strength will be found effective.

Raspberries.—Where new plantations are to be made, no time should be lost in carrying out the work, by trenching the ground, putting in plenty of manure; but in trenching, it is not prudent to bring up the bottom spit to the top, unless the soil has frequently been trenched; but it may be thoroughly broken up, and have manure spread on it. Plant the canes in threes, 6 inches apart, and allow a distance of 3 feet from clump to clump, and 5 feet between the rows; and if trellises are to be used, the canes may be planted 2 feet apart, allowing a little more between the rows. Heavy and cold soils should be thrown into mounds, and the canes planted on these. Red Antwerp, Baumforth Seedling, Carter's Prolific are good summer varieties, and Belle de Fontenay should be planted for autumn use.

Pears.—The following are those which may be depended upon to succeed in those parts where Pears will thrive at all:—Jargonelle, Williams' Bon Chrétien, Clapp's Favourite, Madame Treyve, Triomphe de Vienne, Jersey Gratiolli, Louise Bonne of Jersey, Fondante d'Automne, Durondeau, Pitmaston Duchesse, Marie Louise, Thompson's, Emile de Heyst, Beurré Superfin, Doyenné du Comice, Counseilleur de la Cour, Winter Nelis, Glout Morçeau, Passe Colmar, Josephine de Malines, and, as an early sweetmeat, Doyenné d'Été. The stewing Pears are, Catillac, Verulam, and Bellissime d'Hiver. *H. Markham, Mereworth Castle, Kent.*

The Kitchen Garden.

The Early Pea Crop, 1890.—The month of November is the proper time for sowing seeds of these Peas. It may be said that the crop is an uncertain one, and where there is convenience for raising the plants by sowing in January and February, it is much better to defer the sowing till then. The seeds may be sown on strips of turf, and packed together closely on a slight hot-bed. A warm sheltered border should be chosen for sowing out-of-doors. The ground should be well worked, and if it be of a heavy nature it will be better to take out good drills and cover the seeds with lighter soil. More seed than usual must be sown, and it is better to steep it prior to sowing. As a deterrent to mice and rats, a quantity of chopped Furze should be placed on the top of the seed prior to covering up.

Onions.—The warm weather we have lately had has caused these to grow rather more rapidly than is good for them. A good coating of wood ashes may be placed around the stems, and the ground trodden firmly on each side of the rows, which will help to check growth. A quantity of bare Spruce branches to lay over, or stick through amongst them, on the appearance of a sharp frost, will be found of benefit.

Globe Artichokes.—The stems may be cut off, and a quantity of dry leaves or litter placed round the plants, some branches being stuck around them to keep them together.

Slugs and snails are very active now, and a constant war must be waged against them if young Lettuce, Radishes, &c., are to be saved. I have found superphosphate, made from slack from the iron-works, very beneficial. It is very inexpensive, and a slight dusting of the surface destroys all the creatures it touches. Mr. Barlow, of Stake Hill, first mentioned it to me; it costs about 60*s.* per ton at Liverpool. In applying it, care must be had not to allow any of the powder to touch tender plants.

Winter Cabbages.—The mild weather has caused these to grow rapidly, and a sharp frost would cause injury to them. To prevent wind twisting, and to preserve the stems from frost, the soil should be drawn up close to the leaves, and made moderately firm; this will in a measure check rapid growth, and impart a measure of steadiness to the plants.

Lettuce fit for use, or which soon will be, must not be longer left without protection from rain and frosts, and no time should be lost before affording them security by means of old frame lights, hoops and mats, &c. They keep best if covered on the ground where they are grown. Some recommend giving the plants plenty of air. I believe in excluding air from the plants as much as possible under protectors, as described in previous notes; the glasses are never opened from the time they are placed over the plants, unless to remove any decaying leaves. I hold it to be essential in securing crisp Lettuce, that contact with the outer air should be reduced to a minimum. I placed a quantity of Lettuces under *cloches* six weeks ago, which were pressed firmly into the soil when they were placed over the plants; not one of them has been moved since, and the plants are wonderfully fresh looking. Should hard frosts set in, 6 to 8 inches of dry leaves and a covering of litter will be placed around the *cloches*, and should the frost be very sharp, a covering of mats or straw will be placed on the top.

The best Cabbage Lettuce is unquestionably All the Year Round; Petite Noire is a very accommodating Lettuce, growing under *cloches* all the winter through; Dickson Brown, and Tait's Giant have been tried for the first time, and they are found to make a good useful summer variety; Tom Thumb is a nice early sort, and can be planted at about 8 inches apart. Amongst Cos varieties, Paris White is the best; and Brown or Bath, hardy and good; but it is often objected to, on account of its colour. I tried Sutton's Giant Cos this season, and think very highly of it; and, as regards size, it is justly entitled to the designation, but, apart from that, its quality is very good; I have found no variety to excel Paris White Cos.

Endive must be protected as Lettuces are—in fact, some of the varieties are more easily injured by frosts than Lettuces, when they attain to full size. The plants should be covered in the same way as Lettuces. I have this year lifted every fourth row, and made a span-roof of rails, one rail being at the top, and one on each side; some straight Wheat-straw is laid along, and secured with a string, the ends being left open to allow a current of air to pass through. When blanching the Endives, the ends will be closed, and a thicker covering of mats placed over the top. Continue to blanch plants in frames at intervals of eight days; see that they are perfectly dry when the operation is performed.

Mustard and Cress.—Sow in boxes twice a week, and place in gentle heat; press the seeds into the soil, and cover with brown paper until they have sprouted about an inch. *Wm. M. Baillie, Luton Hoo.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

MONDAY,	Nov. 11	St. Neot's. Surrey (two days, at Peckham).
TUESDAY,	Nov. 12	Ascot (two days). Brixton (two days). Devizes. Exmouth. Hampstead (two days). Kingston (two days). Leeds Paxton (two days). Lewes (two days). National Chrysanthemum at Westminster (two days). Pembroke. Truro (two days). Wells (two days). West Kent (two days).
WEDNESDAY,	Nov. 13	Bath (two days). Bournemouth (two days). Chelmsford. Cheltenham (two days). Cornwall (three days). Croydon (two days). Dartford (two days). Dorset. Enfield (two days). Faversham (two days). Northampton two days). Southend (two days). Torquay. Winchester (two days). Yarmouth (two days).
THURSDAY,	Nov. 14	Barnsley (two days). Birkenhead. Chiswick. Cranbrook and Weald of Kent (two days). Dewlish. Hinckley (two days). Putney (two days). Reading. Royal Horticultural of Ireland (Dublin). Stroud. Tottenham (two days). Walton. Weybridge.
FRIDAY,	Nov. 15	Bolton (two days). Bradford (two days). Derby (two days). Devon and Exeter. Cheshunt. Eccles (two days). Hessle. Hitchin. Leicester (two days). Tooting (two days).
SATURDAY,	Nov. 16	—Bacup.

SALES.

MONDAY,	Nov. 11	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the American Nurseries, Leytonstone, by Protheroe & Morris.
TUESDAY,	Nov. 12	Lilies, at Protheroe & Morris' Rooms. Roses, Bulbs, Conifers, &c., at the City Auction Rooms, by Protheroe & Morris.
WEDNESDAY,	Nov. 13	Dutch Bulbs, at Stevens' Rooms. Plants, Bulbs, &c., at Protheroe & Morris' Rooms. Nursery Stock, Plants in Pots, Greenhouses, &c., at the Manor Lane Nursery, Lee, by Protheroe & Morris (two days).
THURSDAY,	Nov. 14	Orchids in Flower and Bud, 10,000 Lilium auratum, &c., from Japan, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms
FRIDAY,	Nov. 15	Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 16	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—42°.6.

The Chrysanthemum Centenary.

WHETHER or not the date were accurate to exactness, it will not be denied that there was peculiar fitness in celebrating the Chrysanthemum Centenary at Chiswick, under the auspices of the Royal Horticultural Society. Time after time, as speaker after speaker at the Conference on Tuesday had occasion to revert to the history of this popular flower, was the work of the Society, of necessity, commented on. PARKS, REEVES, FORTUNE, all in the service of the Society in China and in Japan, furnished the material that is the basis of our modern Chrysanthemum. SABINE, the Secretary, was one of the first to treat the matter from a botanical point of view, and he enriched its Transactions with numerous memoirs and illustrations. It is well to recall our indebtedness to the old Society, because of itself it furnishes a powerful reason for aiding it in its present laudable attempts to better the status of horticulture. It was pleasant to see the great vinery at Chiswick on Tuesday, thronged with the fraternity—pleasant to look on the great banks of soft glowing colour, the varied shapes, from the formal balls admired by the old school of florists to the more elegant "Japs," the neat Pompons, and the correct Anemone-flowered varieties. All sections were, indeed, well represented to please all tastes, so that a large and most instructive display was got together under a covering than which nothing could be more beautiful or more fitting, for the roof of the huge building, from end to end, was clad with the foliage of the Vines in all the loveliness of their autumn tints, enhanced by the rays of a sun that would have done credit to June.

The Conference, too, was a success, the audience was large and patient, because interested. So great, however, was the concourse of people admiring the flowers, and so constant the distant hum of voices, that both speakers and auditors at the Conference proper suffered some slight inconvenience—an inconvenience which another year might readily be remedied.

The Chairman, Mr. HAYWOOD, was unfortunately prevented by slight indisposition from reading his Presidential address. This task, therefore, was fulfilled by the Rev. W. WILKS, who has great aptitude for such work. Mr. HAYWOOD's address, as it turned out, struck the keynote to most that followed. It was a brightly written essay on evolution as exemplified in plants in general, and in the Chrysanthemum in particular. Optimistic in tone, it argued continued progress, if not in one direction, at least in another; and maintained that, while retrogression and temporary stagnation were as inevitable as progress itself, yet the balance was in favour of progress for men as well as plants.

A few practical hints were supplied to raisers, who were recommended not to devote undue importance to mere size of flowers, but to strive for robustness of habit and constitution, so as to secure hardy varieties. Mr. HAYWOOD's address was conceived throughout in the right strain, and we anticipate its publication in the *Journal* of the Society with much interest.

Mr. HAYWOOD's address being finished, a short paper by Mr. HEMSLEY on the botanical history of the plant was read, based on the old specimens in herbaria, and especially on recently received native specimens from Central China. Mr. HEMSLEY's conclusions are given at full length in the important communication contributed expressly to our columns, and of which we publish the first instalment in our present issue. This botanist's remarks were illustrated by specimens and drawings from the Royal Gardens at Kew. The plant generally known as C. sinense should, it seems, by right of priority, be called C. morifolium, it having received that name from RAMATUELLE. Wild specimens of this plant were exhibited. From C. morifolium, crossed with the small yellow C. indicum, have probably originated some of the Chinese double forms. The Chusan Daisy, the parent of the Pompons, is also considered of hybrid origin.

A paper by Mr. HARMAN PAYNE was then read, summarising the history of the flower from the literary and floricultural aspects. The gist of this communication was published in the excellent Chrysanthemum number, published by the *Gardeners' Magazine*, and to which we have already alluded. Mr. MOLYNEUX followed by a paper on new varieties, furnishing another illustration of progressive evolution and selection. Mr. WRIGHT then enunciated his views on judging Chrysanthemums, wherein he combated, and, as we think, successfully, the doctrine that a judge or critic should of necessity be, or have been, a cultivator. Surely one can be an adequately qualified judge of a mutton-chop, without being, or having been, either a sheep-farmer, a butcher, or a cook. A judge at an exhibition has only to deal with the results as he sees them put before him for a definite purpose, to compare one set of exhibits with another, and to pronounce on their relative merits. If there are any peculiarities of treatment, any superior skill in the management of the plants, those points should be brought out at the Conference, and discussed by the experts there present.

Mr. HIBBERD gave an account of the conformation of the Chrysanthemum, as explanatory of the modifications it has undergone at the hands of the florists. Mr. HIBBERD's remarks are summarised at p. 525, and will be published in full in the *Journal* of the Society, so that we will only mention the dramatic effect which he produced when talking of the mythical scarlet and blue Chrysanthemums. "How would you like them if you had them?" asked he, as he artfully placed in one corner of a stand of Chrysanthemums of soft, delicately-blended colours, a bunch of raw scarlet Pelargoniums, and a similar bunch of crude blue flowers, which, at a distance, looked like Corn-flowers, on the other corner of the stand. The result was an agonising discord, which raised a shout from the auditory. Mr. HIBBERD, however, was careful to add, that Nature sometimes made daring colour-combination, as in the colouring of parrots, many Bromeliads, Strelitzias, &c.; yet such is the subtle harmony of tones, that under such circumstances discord is not felt.

Unfortunately, no discussion ensued on any one of the papers read on the first day, bristling though they were with points on which the experience of those present might profitably have been brought to bear. To remedy this, we once more suggest that a condensed abstract of each paper be prepared beforehand, and circulated if possible a day or two before the meeting among those likely to be able to discuss the matter suitably. As it was, the Conference resembled a long sermon, to which none of the auditory has the right of reply, or even of asking for further explanation.

Dr. MASTERS, in proposing a vote of thanks to the Chairman and to the readers of papers, alluded to the great interest of the exhibition, and of the papers that had been read, as illustrations of progressive evolution, and the survival of the fittest—maintaining that, by virtue of these laws, the old Society still maintained its place as the public representative of horticulture, and was entitled to their gratitude and support. He also called attention to the fact that, while there was a very large number of species of Chrysanthemums, up to the present time only some half-dozen had been experimented on by the florist, although the potentialities of the genus were shown to be almost unlimited.

On the second day, Wednesday, the programme included some further remarks by Mr. HEMSLEY on the species of Chrysanthemum, papers by Mr. BURBIDGE on "Seeds and Seedlings;" by Mr. C. ORCHARD, on "Dwarfing and Grouping Chrysanthemums;" on "Market Chrysanthemums," by

Mr. C. Pearson; and on "Summer and Autumn Chrysanthemums," by Mr. W. Piercey.

The flowers exhibited form the subjects of comment in another column, but here we may mention some of the miscellaneous exhibits, including the strikingly interesting specimens and drawings from Kew.

From the Garden Library of the Botanical Gardens, Trinity College, Dublin, Mr. F. W. Burbidge exhibited the following books relating to the Chrysanthemum:—

1. *The Prodromus of Breynius (Jacobus)*, the first European work in which there is a mention of the Chrysanthemum. It was published in 1689, and was a large paper copy from the late Lord Petre's collection. In this book the plant is said to be variable in Dutch gardens, and to consist of white, yellow, flesh-coloured, red and crimson-purple kinds.

2. *A New Arrangement of the Large-flowered Double Chrysanthemums*, by A. H. Haworth, F.L.S. (1833), being the first good arrangement of the Chrysanthemums into sections, and the first pamphlet in which the then new English-raised seedlings are mentioned; these being said by Haworth to have originated from the Early Blush, Two-coloured Red, and Early Crimson.

3. *A Flora of the Herbaceous Plants of Japan*, by



Fig. 74.—The new hairy-flowered incurved Japanese Chrysanthemum, Mrs. Alpheus Hardy. (see p. 534)

a native botanist (2nd edition, 1874), in twenty volumes. The part exhibited was vol. xvii., in which several small and large-flowered Chrysanthemums are exhibited in woodcut outlines. A small Anemone-flowered Pompon, a variety, with thread-like florets (not unlike Mrs. Jas. Carter), and a large-flowered form in the way of Comte de Germiny, were very interesting.

4. *A Modern Japanese Work*, printed from wood blocks, in three tints, black, grey, and orange, in which several drawings of the Chrysanthemum occur. The common, sub-shrubby, single Pompon (yellow), is well shown, as also two larger varieties with double flowers, their flowering-stems being supported by slender Bamboo stakes. (Published about 1880).

Sundry volumes of the *Transactions of the Horticultural Society*, including Sabine's paper and illustrations, were exhibited. Dr. Masters supplied a copy of Salter's *Book on the Chrysanthemum*—a book now of historic value, as well as sundry illustrations of the flower; while the Rev. W. Wilks, the genial and ever active Secretary, exhibited a delicious little vase, and an equally delightful bowl of old Satsuma ware, in which the Chrysanthemum was delicately and accurately represented. If Mr. Wilks does not wish people to ignore the tenth Commandment, he will be careful not to exhibit such treasures in mixed company!

Mr. Shirley Hibberd also furnished a Japanese vase with a blue Chrysanthemum thereon. Too much stress should, however, not be laid on what may have been rather the fancy of the artist than any direct imitation of Nature.

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Chrysanthemum Mrs. Alpheus Hardy.—This latest and true Japan novelty (see fig. 74) was drawn and engraved from a plant in the possession of Mr. Thomas Ware, Hale Farm Nursery, Tottenham, N. At the distance of 1 yard the flower, a white one, does not appear to differ from some of the other incurved flowers of Japanese origin, but a closer inspection reveals numerous coarse hair-like excrescences on the reverse of the florets, and as the latter curve upwards and inwards, these are brought into view. The flower, a large one, will, it is hoped, be the means of introducing a new feature into Chrysanthemums, and it may chance that an even greater degree of hairiness may become a fixed feature, and in that way we may obtain flowers of what Mr. Shirley Hibberd described at the Conference on Tuesday as Velvet Pile. Be that as it may, we have in the new comer a beautiful flower of glistening white, and which everybody will be anxious to possess. As we were recently informed by Dr. Walcot, its history is as follows:—An American lady—presumably Mrs. A. Hardy—had shown kindness to a Japanese student of Harvard University, and he, out of gratitude to her, sent over to his native land for some roots of Chrysanthemums, and gave them to her. Amongst them was this variety which has been named after the lady by Mr. Manda, who bought it for a large sum and brought or sent it to this country.

Town Gardening.—The Manchester Field Naturalists' Society, which has done so much in disseminating practical knowledge, especially of botanical and ornithological matters, is now addressing itself to town-gardening. On the occasion of its monthly meeting on Wednesday, October 22, an address was given by Mr. Leo Grindon, and which was followed up by various speakers. We hope to refer to the proceedings of the Society on that occasion at an early date.

International Centenary Chrysanthemum Show, Edinburgh.—We learn that arrangements have been made for holding a Conference on the Chrysanthemum on the second day of the above show, Friday, 22nd inst., at 2 p.m., at 5, St. Andrew Square, Edinburgh, when the following papers will be read and discussed, viz.—"On Early Flowering Chrysanthemums," by Mr. Robertson Munro, Abercorn Nursery. "On Chrysanthemums for Decorative Purposes," by Mr. Alex. McKenzie, Warriston Nursery. "On Trained Specimen Chrysanthemums," by Mr. Fulton, Carbut Castle, Broughty Ferry. "On the Culture of Chrysanthemums in Scotland for Exhibition Purposes," by Mr. McHattie, Newbattle Abbey. "On Taking the Bud for Exhibition Blooms," by Mr. T. B. Morton, Darlington.

Pierre Blancard says the Secretary of the Horticultural Society of Marseilles introduced the Chrysanthemum in 1789. His name should be spelt as above written. His first voyage to China was in 1771, and the greater part of his life was spent at sea. In 1789 he returned to Marseilles, after a voyage of three years, bringing with him the Chrysanthemum. In 1796 he retired to Aubergne, near Marseilles, where he died on March 16, 1826, at the age of eighty-five.

Die Naturlichen Pflanzen Familien.—The last number of this valuable publication is of particular interest, inasmuch as it treats of the Heaths and allied families. Dr. Drude, of Dresden, in the number before us, describes briefly the Clethraceæ separated as a distinct family from the Ericaceæ, the Pyrolaceæ, Lennoaceæ, and Ericaceæ proper. The text is illustrated with several novel woodcuts. The excessively condensed style and the typographical contractions render this book rather difficult for non-German readers, and make us regret that at least the diagnoses and explanations of the cuts were not written in botanical Latin.

Forest School of Aschaffenburg.—Dr. Dingler replaces Dr. Prantl as professor at this establishment, Dr. Prantl having accepted the post of professor at Breslau.

The Arsenites.—Prof. A. J. Cook, in the *Bulletin of the Agricultural College of Michigan*, reports that the "Arsenites are effective against the codling moth; that in their use there is no danger of poisoning the fruit, and, when properly used, no danger to the foliage, nor to any stock that may be pastured in the orchard." The strength recommended is half a pound of "London purple" to 100 gallons of water, used in the form of spray.

Autumn at Paisley.—The Rev. Robert McClelland writes from Inchinnan to the *Glasgow Herald*:—"As indicating the exceptional fineness of the season just closing, the following facts may not be uninteresting to some of your readers. We have just gathered in the last of a small second crop of Victoria Plums from an old wall tree. They were, of course, smaller than the first crop gathered in the beginning of September, but were quite ripe and well flavoured. The second bloom came on when the first heavy rains fell, about the middle of July. Still more wonderful was the case of a rider-trained Kerry Pippin, planted late this spring. The first bloom, as we expected, all fell off; but a second burst came out about the beginning of August, and those set fairly well. None of them were able to reach full maturity, owing to the setting in of the cold weather, but one specimen, both in size and shape, does no discredit to the kind.

Exhibitions at the Royal Aquarium.—The series of exhibitions to be carried out by the Directors, under the superintendence of Mr. W. Holmes, are as follows:—1890, March, two days—Hyacinths, Tulips, Narcissus, &c.; prizes, £100. April, two days—Auriculas, Cinerarias, Daffodils, Azaleas, &c.; prizes, £100. May, two days—Tuberous rooted Begonias, show, fancy, and decorative Pelargoniums, Pansies, florists' Tulips, &c.; prizes, £150. June, two days—Roses, Pinks, &c.; prizes, £150. July, two days—Carnations, Picotees, hardy flowers, &c.; prizes, £100. September, two days—Dahlias, Chrysanthemums, and Gladioli; prizes, £75. The exhibition of early Chrysanthemums by the National Chrysanthemum Society will be held in connection with this. October, two days—Fruits, vegetables, &c.; prizes, £100. November, four days—Grand Centenary Exhibition of Chrysanthemums; prizes, £200. And the January or mid-winter exhibition of the National Chrysanthemum Society will take place as usual with augmented prize money. Schedules of prizes are in course of formation.

Paris Exhibition.—The only medals awarded to British exhibitors in Classes 79—83, including flowers and decorative plants, kitchen garden plants, fruits, &c., were to Mr. Peter Kay for Grapes—Silver Medal; to Kelway & Son, for Gladioli, Dahlias, &c.—Gold Medal; to Mr. Ware, Tottenham, for herbaceous and bulbous plants—Silver Medal; and to the Australian Commission, a "*Grand Prix*" for Tree Ferns. The paucity of the awards is accounted for by the paucity of exhibitors. British horticulturists apparently do not fully appreciate French horticulture, and the Exhibition-managers did not err on the side of over-attention to reporters, if we may judge from our own experience. Among French awards a "*Grand Prix*" was awarded to MM. Vilmorin, Andrieux & Cie; to MM. Croux and Defresne for ornamental and fruit-bearing trees; to M. Salomon, of Thomery, for Vines. The Orchids of Mr. Peeters, of Brussels, obtained a like award; the new plants of MM. Chantrier were similarly honoured; while our contemporary, the *Revue Horticole*, was one of the recipients of a Gold Medal.

The Legion of Honour.—Mr. Risler, the Director of the Agronomic Institute of Paris, has been named Commander of the Legion of Honour. M. Lévêque and M. Henry de Vilmorin have been promoted to the grade of officers in the Legion. MM. André, Croux, Jolibois, Moser, Sohiers, Tinarran, and Truffaut, have been appointed Chevaliers. We congratulate our friends; their English colleagues know their merits so well, that it will be a surprise to many to find that such men should not have been in the Legion before.

Glasnevin.—Mr. F. Moore's report for the year 1888 affords satisfactory evidence of the excellence of the management, and of the appreciation in which the gardens are held. New houses for succulent plants and tropical Ferns, as well as enlargement of the library, laboratory, and offices, are urgently required.

Bilbergia vexillaria ×.—A superb hybrid raised by M. André out of B. thyrsiflora by B. Morelli. The plant is of tufted habit, with broad strap-shaped, concave-toothed leaves, and dense, erect, many-flowered spikes of purple flowers, set about with crimson lance-shaped bracts. *Revue Horticole*, October 16.

New Mayor of Worcester.—Some of our readers may be interested to know, that Mr. Richard Smith, the head of the firm of R. Smith & Co., Nurserymen, of Worcester, has been elected Mayor for the ensuing season for that city.

Fruit Culture.—On Thursday, October 31, the Fruiterers' Company unanimously elected the Lord Mayor (Alderman Sir James Whitehead, Bart.), as their Master for the ensuing year. It was only last week that his lordship was admitted to the Guild, and the compliment has been paid him in recognition of the great interest he is taking in the restoration of orchards and fruit gardens in homesteads and cottages throughout the country. To the Fruit Culture Fund, which is now being raised with this object, Mr. H. R. Williams has given £25; Mr. George Cutt, £25; Sir William Ogg, £25; Colonel North, £25; and Mr. C. I. Leaf, £10. The fund now amounts to about £1500.

Hops.—The tables recently published by the Board of Agriculture show a decrease in acreage of 766 acres,

viz., 57,724 in 1889, and 58,490 in 1888; and an increase in the yield of Hops of 216,520 cwt., viz., 497,811 cwt. in 1889, against 281,291 cwt. in 1888, which give an estimated average of 8·62 cwt., and 4·81 cwt. per acre for 1889 and 1888 respectively.

The Hanbury Medal of the *Pharmaceutical Society* has this year been awarded to Professor Gustav Planchon, of Paris, the brother of the late botanist. The association of the names of Hanbury and Planchon is felicitous.

Botanic Garden, Ghent.—Mr. Rodigas, in the current number of the *Illustration Horticole*, protests against the sale of the Palms and other specimen plants of the Botanic Garden, Ghent, which has recently taken place. As Director of the School of Horticulture, M. Rodigas might be expected to protest. We are only sorry his protest should have been unavailing.

Malesia.—Signor Beccari's valuable publication has recently advanced a stage. In the last issued part, the Asiatic Palms and the Malayan Bombaceæ, are particularly interesting groups.

A Reichenbach Injustice. — The *American Florist* has the following:—A. B. was a very successful botanical collector, and discovered several new Orchids in the East Indies and Indian Archipelago. Some of these were imported alive into Europe, and are now in general cultivation, and the discoverer has received due credit for them. But he discovered several species, if not some genera, new to science, and of which he was able only to secure herbarium specimens. On returning to Europe, he sent these, together with complete information and drawings to Reichenbach, but he has never heard anything further of them, and now they are locked up in the Reichenbach herbarium, to remain there, sealed from the world, for the next twenty-five years. In the meantime it is quite probable that C. D., E. F., and others, may rediscover these new plants in their native wilds, and secure living or herbarium specimens of them, and submit them to the authorities at Kew for identification or name, and gain the credit of being the original discoverers. This is very galling, and ill requites the dangers, privations, and sickness, A. B. underwent, his enthusiasm in the field, and his passionate love for Orchids. But it is a stinging lesson—it teaches us how unsafe it is to trust our eggs in any one man's private basket. Had Kew, or some other noble, liberal, public institution of the kind, been entrusted with the identification and classification of Orchids, no such injustice as that done to A. B. could possibly have been done.

Dr. A. B. Ghiesbrecht. — The *Botanical Gazette* says:—The Mexican journal, *La Naturaleza*, has published a graceful tribute from the pen of a native botanist to the services of a Belgian explorer of the flora of his adopted country. For the career of a travelling naturalist Dr. Ghiesbrecht was well equipped physically, and by preliminary studies at the universities of Brussels and Paris. Associated with Linden and Funk in the commission appointed by the Belgian government, in 1837, to investigate the botany and zoology of Mexico, he proved himself a worthy successor to Sessé, Mociño, Cervantes, Humboldt, Bonpland, La Leave, and Lexarza. Braving the hardships and exposures of travel in wild and unhealthy regions, undaunted by shipwreck, robbed and wounded by brigands, involved in the strife and wars of contending factions, he pursued for thirty years the work of collecting plants for the herbaria and gardens of Europe and America. Captivated by the novelties of a tropical flora, his earliest and latest field of research, and apparently his favourite one, was the south-eastern-most part of Mexico, comprising the states of Tabasco and Chiapas. But from 1840 to 1855 he devoted himself to the interior and other states, crossing the Gran Cordillera three times from ocean to ocean, traversing the Gran Mesa, and ascending the volcanoes of Colima, Jorullo and Cempoaltepec. The number of plants that he has distributed to herbaria, or introduced into cultivation, must be immense. Their citations abound in the literature of tropical North American botany. M. De Candolle refers to a series of exsiccatæ in the possession of Cardinal Haynald, at Colocza, Hungary. A list is given by Prof. Rovirosa of many notable new species, with which the name of Ghiesbrecht is connected; and to this list might well have been added the remarkable arboreous Scrophulariacea, Ghiesbrechtia grandiflora, which served Dr. Gray as occasion to dedicate a new genus to its discoverer. This tree, known in herbaria only by the originals of description collected in Chiapas, has recently been met with by Baron Von Türckheim at Santa Rosa, in the Verapaz highlands of Guatemala. The memoir concludes with a pleasing account of its subject in his eightieth year, at his home in San Christobal Las Casas, where he has resided since 1862:—"Retired from the wandering life that he pursued for so many years of the middle part of this century, but still vigorous and active, he occupies himself chiefly with horticulture, and with doing good to the most helpless class of the community, that he has adopted as his own. His medical services are ever at the call of those that suffer; his moderate means suffice, nevertheless, to bring bread to the door of many a needy one; all his actions reveal to those around him that he, who has read the great book of Nature, has learned to know the duties that bind him to his fellow men. Proud, then, are the people of Chiapas to have him dwell in their capital, and to call him their countryman, as all of us should do who love the advance of science in Mexico."

The Clyde Fatality.—In publishing this, the third list, of subscriptions paid or promised in aid of the widows and orphans, we would remark on the almost complete absence of the names of gardeners, and would remind such of them as are numbered among our readers, that their shillings and sixpences would be equally gratefully received by the treasurer as the larger sums of the more wealthy and well to do:—

	£	s.	d.
Lord Rothschild	21	0	0
Mr. T. D. Mackay, jun., Greenock	1	3	6
Mr. W. J. Marshall	0	10	0
Mr. J. Fraser (*Gardening World*)	1	1	0
Walter Coob, Esq. (additional)	1	1	0
Messrs. J. & R. Morley	2	2	0
Mr. John Downie	1	1	0
T. R. Watt, Esq.	5	5	0
Dr. Gorton	0	10	6
Mr. P. Codd	1	1	0
Mr. Whalley	0	5	0
H. Milner, Esq.	1	0	0
Mr. Golseff	1	1	0
Messrs. Seegar & Tropp	2	2	0
A. H. Smee, Esq.	5	0	0
S. G. Lutwyche, Esq.	2	2	0
Messrs. Hugh Low & Co.	5	5	0
Mr. W. E. Boyce	0	5	0
W. Thompson, Esq. (Stone)	1	1	0
Mr. Stevens (Stone)	0	5	0
Mrs. Dymond	0	10	0
T. B. Haywood, Esq.	2	2	0
Leopold de Rothschild, Esq.	21	0	0
"Emma," Arddarrock	2	0	0
T. H. Seumack, Esq.	0	10	6
F. C. Jacomb, Esq.	5	0	0
Mr. H. Perkins, Greenlands	0	10	0

An Ancient Sacred Tree. — At Chezala (writes Mr. A. Rea, First Assistant to the Director-General, Archæological Survey of India), standing in a line with, and south from the chaitya, inside the outer court, is a large tree, which, having a hollow core, is popularly stated to grow from out of a subterranean cave. It is known as Peruleni pedda manu (the nameless great tree), and botanically as Adansonia digitata (Baobab). Around the base is a platform 25 feet by 22 feet 6 inches, and 3 feet high. The circumference of the trunk at that height is 58 feet 6 inches. The first branches are 9 feet 6 inches from the ground, and there the girth is 56 feet. The spread of the foliage is 78 feet across, and the height of the tree is about 87 feet. It has large, five to seven-lobed leaves, large flowers, and seed in a hard woolly pad. It must be of great age.

Finchley Chrysanthemum Society.—This flourishing Society held its annual show on the 5th and 6th inst., and secured an all-round success. The Silver Medal for thirty-six blooms was won by Mr. Walker, of Goldbeaters, with splendid examples of the most popular kinds, and was closely followed by Mr. Rutson, of Mill Hill. The groups were very attractive, and called forth many enconiums from a large body of visitors, particularly one put up by Mr. Hayler, of Hendon, which contained some very fine blooms of both incurved and Japanese varieties. The bouquets and table decorations were largely shown. In fact the committee are to be congratulated upon a very excellent exhibition.

Presentation. — On Thursday, October 31, a testimonial of an exceedingly gratifying character was made at the Greyhound Hotel, Beckenham, to Mr. C. J. Goldsmith, to mark the occasion of his leaving Kelsey Manor, where he has been for the past six years, to undertake the post of head gardener to Mr. W. B. Waterlow, J.P., of High Trees, Redhill. The testimonial, which consisted of a marble clock and a service of plate, was accompanied with an illuminated tablet, containing the names of the subscribers. The gifts were appropriately acknowledged by the recipient.

Nursery Notes.

VICTORIA AND PARADISE NURSERIES, UPPER HOLLOWAY.

So many nurserymen in these days are relinquishing their general collection of plants in favour of specialties, that it is a pleasure to those who know plants to inspect the stock at this extensive and well-kept establishment, where, although the Orchids are, and always have been, the main feature, none of the showy stove or greenhouse plants are allowed to be crowded out by them. This end has been attained by having proper quarters allotted to each section of the nursery stock, and when more space has been required for the Orchids, by building and arranging houses for them.

The many houses of Orchids are filled with marvellously vigorous and healthy specimens, a glance through the different departments disclosing a completeness in each, and a noteworthy excellence in some divisions, viz., the fine house of Vandas, many of them show plants, and some still in bloom; the extraordinary quantity of specimen plants of Lælia purpurata, *L. elegans*, and all the forms of Cattleya labiata; the number and perfect health of the houseful of Dendrobes of the D. Phalænopsis, D. bigibbum, D. superbiens, and D. Williamsii section; the beauty of the Odontoglossum, Masdevallia, and other cool Orchids; the extraordinary size of the bulbs of the collection of Calanthes now sending up spikes, and the great variety of Cypripediums, both species and hybrids, whose good condition may in some degree be accounted for by the comfortable quarters they inhabit. In one of the houses we found a fine group composed chiefly of Cypripedium insigne violaceo-punctatum, large specimens of C. Schlimii with a dozen or so of spikes; some Lælias, Cattleyas, and Oncidium varicosum together with a specimen of the fine old Houlletia Brocklehurstiana, with eight spikes, and a fresh supply of them coming up. In another house around some superb varieties of Lælia Perrini, Cattleya bicolor, Odontoglossum Insleayi splendens, and O. grande, were plants in bloom of the lesser species—Sophronitis grandiflora, Odontoglossum Rossii majus O. aspersum, Oncidium pulvinatum, Comparettia macroplectron, Mesospinidium vulcanicum, &c. In the Vanda-house those still in flower are brought to the end, and with them are grouped a fine specimen of Aërides suavissimum with three spikes; Cattleya Bowringiana, and C. maxima, several fine rosy-purple Dendrobium Goldiei and D. superbiens; a score or two of Cypripedium Spicerianum, with several C. Haynaldianum, C. Dominianum ×, C. Crossianum, and other species.

The cool houses are bright with some handsome forms of Oncidium tigrinum, many O. Pescatorei, O. crispum, and O. Cavendishianum, some splendid spikes of O. odoratum, and varieties of O. luteo-purpureum; the singular and elegant Maxillaria lepidota, and Masdevallia macrura, and other Masdevallias; Odontoglossum angustatum, Galeandra Baueri, a nearly white Lælia praestans, and other interesting species, and a fine stock of the pretty lilac Utricularia Endresii. The smaller warm houses have in bloom many Phalænopsis Lowii, and a few

P. amethystina, and other species; Cypripedium Barletii×, C. vexillarium superbum×, C. Arthurianum×, C. Chas. Canham×, C. Fitchianum×, C. Harrisianum vivicans×, C. œnanthum×, and C. o. superbum×, together with many older species.

Other specialties which strike the visitor are the fine house of Nepenthes or Pitcher plants suspended over a collection of Alocasias, Anthuriums, and variegated plants, among which we have never seen the Heliconia aureo-striata so beautiful, or the Tillandsia musaica better flowered; the extensive collection of Ferns, among which are a complete set of Gleichenias and several quite new species or varieties. Among them are a batch of Nephrodium pallidum cristatum, some pretty stems of Lomaria Boryana with fine heads of fronds, and the always pleasing sulphur-powdered Adiantum Williamsii. The collection of Amaryllis, too, is in fine order; the house of new Cliveas well furnished with specimens, which many persons will be glad to know are now getting cheaper. The Heaths and New Holland plants consist of compact, healthy examples of all the desirable species; the Camellias are finely budded, and the houses devoted to greenhouse Rhododendrons equally good, and the great stock of beautifully-grown Azaleas of all sizes, budloaded up to the fullest extent, and in perfect health, a fact which should be worth a great deal this year when it is known that the early frosts have nearly ruined the Belgian stock of these plants. A house of Dipladenias, several of Palms, one of Gardenias, another of Ixoras, and a fine lot of Chrysanthemums just coming in also were noted. In the propagating houses were two very pretty variegated plants, viz., Habrothamnus elegans variegata and Bougainvillea glabra variegata. Many of our readers will also be glad to learn that Mr. B. S. Williams himself is in better health than he was some time ago. We found him busy with his Orchids, and trust he will soon be in his usual good health. Having taken his son, Mr. Harry Williams, who has so long taken an active part in the management, into partnership, the firm will henceforth be known as B. S. Williams & Son.

Messrs. Dickson & Co., Edinburgh.

The interest now awakened in the benefits to be derived from fruit-growing in this country as a commercial industry has caused some nurserymen, and amongst them Messrs. Dickson & Co., to give greater attention to the raising of fruit-trees. This firm exercises great care in selecting good and suitable varieties; and the energetic manner it has increased the stock of fruits, has assisted in placing them in the front rank of fruit-tree nurserymen. A system of selection has been diligently followed for a good many years, and the methods of culture pursued should be seen by any one interested in fruit-growing who may be visiting Edinburgh. Having a very extensive nursery at Pilrig, Redbraes, Logie Green, and the Farms of Bonnington and Siberton Mains, they have been free to extend fruit-tree culture to an enormous extent, and the area devoted to the leading kinds of Apples, Pears, Plums, and other fruits is astonishing.

Their first place visited was Pilrig. This is well known to Scotch gardeners, and is in the neighbourhood of Leith Walk. The soil of this nursery is well adapted for fruit trees, and the top growth is excellent. Bushes are so treated as to possess a good foundation on which to build up the future head, and the trained trees appeared to have received great care in the first stages.

Last year there were budded in these nurseries 30,000 Victoria Plums, 10,000 Farleigh Damson, 10,000 Morello Cherries, 5000 May Duke Cherry, 10,000 Hessle Pear, 10,000 Fair Maggie Pear, a favourite orchard sort in Scotland; Lord Suffield Apple 10,000, Ecklinville Apple 8000, Stirling Castle Apple 8000, Duchess of Oldenburgh Apple 5000, and of East Lothian Seedling 2000. These are some of the leading orchard varieties, but others are increased proportionately, the 1888 list amounting to over 200,000 in all. The new stock of this year is slightly greater. There is a wonderful absence of "overgrown" trees, and I regard those figures as indicative of the undoubtedly large demand existing for fruit trees. The trees at Bonnington and Silverton are in a rural situation, but they are readily reached from Edinburgh, by the Dalkeith omnibus. Here, I found, were several large fields wholly given up to fruit trees; some years ago these farms were owned by the late Mr. Robert Black, a gentleman who was well known about Edinburgh and in Midlothian for his advanced farming, and from his desire to combine fruit culture with farming, and many objects suggestive of his intelligence in this way still remain. The situation suits fruit trees admirably; a considerable number of flower-beds are arranged on the lawn in front of the house, and from six to ten bushes of one kind of Apple are planted in each bed amongst the flowering plants, and as the trees were bearing excellent crops, many who have only "some flower" beds, and therefore think they have no accommodation for fruit trees, might adopt this plan with remunerative results. The original tree of Robert Black Apple, a fine kitchen or dessert variety, of a bright yellow colour, is growing at the end of the dwelling-house, and has assumed large proportions. One portion of the nursery is devoted to an experimental fruit garden. Here trees are trained in every known style, and all sorts of Apples, Pears, Plums, Cherries, &c., are grown side by side for comparison. This is an interesting spot, and a centre of attraction to pomologists. Extensive quarters of each kind of fruit are grown in the fields, and here indications of present and future fertility were very marked. Here and there a row of Apple trees had been planted closely, and allowed to remain to form a hedge as a protection to other crops, and the free manner these hedge trees produced fruit should induce many farmers and others to plant Apple-tree hedges forthwith.

There is here an unusually large stock of Strawberries, Raspberries, Currants, and small fruits generally, and following out the late Mr. Black's system of farming these fruits, the produce is sent to market so long as prices are remunerative; and to prevent waste, and dispose of the surplus, a jam factory on a small scale has been established, and several tons of preserved fruits are made annually. *Pomona, South Wales, September*, 1889.

St. John's, Putney.

A large quantity of Chrysanthemums is grown here each year, and all the most useful sorts for market and decorative purposes may be met with. Besides these now in bloom, there are large numbers of Princess Blanche and Lord Eversley, in naturally-grown plants, 2½ and 3 feet in height, which are now in bud, and will produce a profusion of bloom at a later period. Among those in flower are several pretty Pompon varieties, as President, laden with its dark, rosy-crimson flowers; Sunset Orange, brown; and La Vogue, a large-flowered variety of rich yellow colour. From all sections of the Japanese varieties a considerable selection could be made. Conspicuous is the deep colour of Ed. Audigier and Gorgeous, a full flower of bright yellow, which has the additional merit of lasting, which may also be said of Ed. Molyneux. Mr. Stevens has large quantities of the variety named Mrs. Stevens, "old gold" colour, which is very useful for cutting purposes, and a new decorative bright yellow flowered variety, Alice Stevens, is likely to be an acquisition. Maiden's Blush, Avalanche, G. Wagstaff, Etoile de Lyon, and Ed. Molyneux were all represented by large and well-developed blooms. Among the incurved there were beyond the general market favourites, which are extensively cultivated, good specimen blooms of the bronze sport from Mr. Bunn, and the welcome novelty, Violet Tomlin, Emily Dale (fine), and M. Rozain, lake, with golden tips.

A few Anemone-flowered varieties make a pleasing show, and, indeed, these and the Pompons might be more generally grown, especially for cutting from. There were large and handsome flowers of La Marguerite, with a full centre, and Mary Stuart, with the rosy-pink rays contrasting well with the bright yellow disc. King of the Crimsons and George Stevens, both deeply coloured reflexed varieties, are attractive, and may be seen well represented.

The North Devon Fernery, Ilfracombe.

Most visitors to Ilfracombe find time to pay a visit to Mr. Dadds' extensive collection of hardy Ferns. The Fernery is situate nearly midway between the railway station and pier of Ilfracombe, on the Langleigh Road. Every inch of hedge-row within 30 miles of Ilfracombe is familiar to Mr. Dadds, by reason of his frequent rambles and diligent search for species and varieties of Ferns, made more frequently thirty or forty years ago than in recent years.

Mr. Dadds' Fern-hunting expeditions were systematically carried out. Armed with a basket, trowel, and a few short sticks—with which last he marked the ground searched over—continuing his ramblings frequently, he has gone over nearly every inch of hedge-row in North Devon, and the choice species and varieties of the Fern which had previously adorned their banks were carefully removed and replanted in the Langleigh Fernery, where, by cross-fertilisation, the varieties have been considerably increased. These were named by the late Mr. Thomas Moore, many of them as far back, as the letters before me show, as the years 1858—9 and 1860. Blechnum imbricatum was found by Mr. Dadds thirty-one years ago, as also was Polystichnum densum and many others.

The following are a few of the names of the kinds and varieties which I noted as being the most strikingly beautiful at the time of my visit (the third week in June), Adiantum Capillus-veneris, Allosorus crispus, Asplenium lanceolatum, A. marinum, A. Ruta-muraria, A. Trichomanes, A. incisum, and A. Mouleii, Athyrium Filix-fœmina A. F.-f. acrocladon, A. F.-f. Fieldiæ, A. F.-f. depanferatum, A. F.-f. glomeratum, A. F.-f. plumosum and A. F.-f. Victoriæ—the Queen of the lady Ferns, Blechnum imbricatum, Ceterach officinarum, Cystopteris fragilis and C. sempervirens; Lastrea æmula, L. crispata cristata, L. Filix-mas subcristata, fronds about 14 inches wide, L.-m furcatum, L. F.-m. cristata Daddsii, L. F.-m grandiceps, L. F.-m. Fieldiæ cristata (a grand variety), Osmunda regalis cristata (bold), Polypodium dryopteris (Oak Fern), P. bifidum, P. cambricum, P. cristatum, Polystichum densum, P. aculeatum (Prickly Shield Fern), P. grandiceps, P. imbricatum, P. plumosum Wollastonii, P. angulare (soft Prickly Shield Fern), P. proliferum Wallastonii, Scolopendrium (Hart's-tongue) laceratum, S. marginatum, S. marginato-polycuspis, S. multifidum, S. sagittato-projectum, S. submarginato-multifidum, S. transverso-lobatum, and S. cristato-majus—this variety not producing seed, has to be reproduced by means of cuttings.

I need only say, in conclusion, that in the light yellow loamy soil of Langleigh, which is drained into a shallow stream running along the bottom of the fernery, one and all the numerous species and varieties there cultivated were in fine condition, and that any horticulturist visiting Ilfracombe during the summer months—especially if he or she happens to have a weakness for British Ferns—I would strongly recommend to direct his footsteps to "Dadds Fernery." The visitor will find in Mr. Dadds an unassuming and courteous gentleman, having the pedigree and names of every plant in his fernery at his finger ends—a knowledge almost equally possessed by Mrs. Dadds. *H. W. W.*

Foreign Correspondence.

CUNONIA CAPENSIS.

This tree-like shrub is rather an uncommon plant in gardens, and one which might be added when absent, with advantage. Its Veronica-like flowers, white, scented like Privet, and about 9 inches long, in pairs, like the Veronica, are very attractive

and in every feature this evergreen tree is also highly decorative for a conservatory.

The plant at Laeken is about 20 feet high, grows in a tub, and is put out-of-doors in summer, when it begins to flower, and continues to do so till now, and will probably do so for another month. It requires a temperate treatment, with plenty of sun in summer, and rich loamy soil to grow in. The plant, probably, would not flower in a small state; but of this there may be proof in time. *K., Laeken.*

Florists' Flowers.

WHITE SELF CARNATIONS.

A fine variety of a white self Carnation, named Mrs. Muir, is now being offered from the North, and Mr. E. S. Dodwell bears his testimony to its high quality. Probably it will appear in the trial of border Carnations it is intended to carry out at the Chiswick Gardens during the next summer; and it may now be regarded as decided that in addition to this trial of Carnations, the National Carnation and Picotee Society (Southern Section) will hold its annual exhibition at Chiswick on July 22 and 23, and that a Carnation Conference will be arranged on the first day; the interest of Carnation growers and admirers will be largely centred upon Chiswick during the summer of 1890.

White self Carnations are always favourites. The esteem in which they are held is seen in the large number of plants grown for bloom for market purposes, in summer and winter alike. Of late years not a few fine white selfs have been raised by Mr. E. S. Dodwell and others, and now many are grown; and beautiful though they are, they are much more suggestive of what may be produced, than as marking a final stage in the development of the flower. The ideal of the florist is never reached. It constantly recedes, as he supposes himself to come nearer to it. He sees the possibilities that lie in the womb of mother Nature, and as soon as he has raised a flower marked by unusual excellence, he immediately conceives another of yet undeveloped superiority towards the realisation of which he will strive to attain.

Mr. Joseph Lakin, of Temple Cowley, Oxford, has two very fine white Carnations that should appear in the Chiswick trial—they are Emma and Annie Lakin—named after his two daughters. I give the preference to the former for its substance, purity fine shell-like petal and symmetry; but Annie is also a charming flower. They both, I believe, originated from the same seed; but it is easy to perceive certain subtle differences that individualise the flowers. And while they will, I think, give the florist much he has hitherto desired as florists flowers for exhibition, they are also floral gems of the first water for the decoration of the border. It is sometimes thought, and very erroneously, too, that all florists' Carnations are unfitted for border purposes. It is greatly incorrect to say so. A large number of the choicest varieties of named Carnations, bizarres and flakes, with charming edged Picotees, are of remarkable constitutional vigour. I have seen them growing in the open border in many parts of the country, and imparting immense pleasure to those who so cultivate them. He who grows for exhibition must have his plants under perfect control, and he grows them in pots in consequence; not because they lack constitutional vigour, but because the blooms need to be shaded from hot sun, protected from drenching rain, and made as secure as possible from the attacks of insects.

Emma and Annie Lakin are both very fine border varieties. They were, during the past summer, to be seen planted out in Mr. Lakin's garden, and they illustrated in a remarkable degree not only the abundant vigour the florist has imparted to the Carnation, but a happy plenteousness of bloom also. I think it is as border varieties the two sisters of Temple Cowley will be mainly cultivated. I do not know when they are to be distributed; possibly Mr. Lakin anticipating a large demand is acquiring a large stock of each. It will be interesting to compare Emma Lakin with the interesting floral débutante from the north Mr. Campbell is distributing, probably to find both are heartily welcome as valuable additions to the section of white self Carnations. *R. D.*

CHRYSANTHEMUM PEST.

[For description, see our Notices to Correspondents, p. 543.]

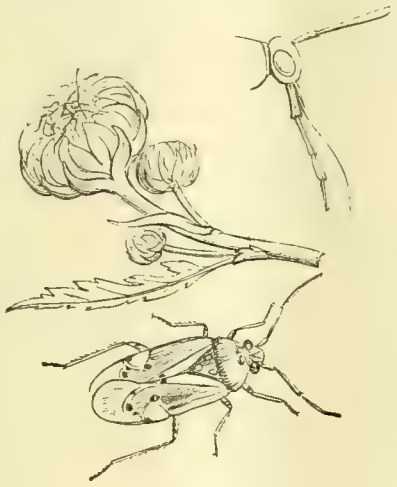


Fig. 75.—Phytocoris campestris.

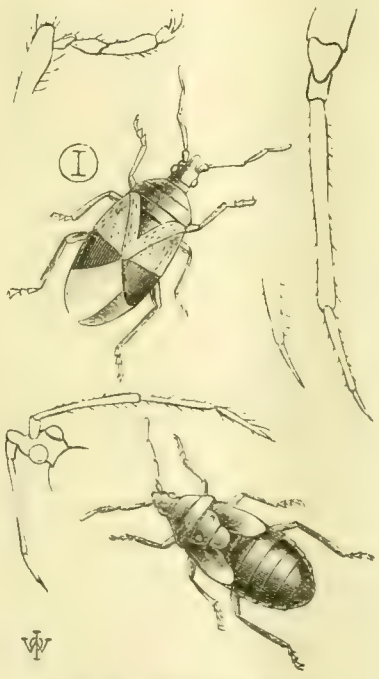


Fig. 76.—Anthocoris minutus.

NOVELTIES IN FRUIT.

Pear Comte de Lambertye.—This is a new Pear, sent out by Messrs. Baltet Frères, of Troyes. It is described as a seedling from Beurré superfin, with which it partakes in common the fine melting, juicy, well-flavoured flesh, but the form is turbinate, with the skin yellowish, speckled with golden-red. The season is from September till October. It is of vigorous habit, and grows well either on the Quince or on the free-stock. It has been declared "very good" at the Paris Exhibition.

Nectarine Précoce de Croncelles.

This has been raised in the establishment of Baltet Frères, and is recommended by them for the vigour and fertility of the tree, its early period of ripening, and the rich vinous quality of the flesh. The fruit is rather large, deeply plum-coloured, on a light yellow ground. It is a free-stone variety, and ripens in the first fortnight of August.

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

A CARNATION CONFERENCE AND TRIAL.—Having been the recipient from the Council of the Royal Horticultural Society of a very dignified rebuke, as a reward for my recent labours in connection with the Vegetable Conference at Chiswick, I again venture on thin ice in inviting attention to the fact that, in common with growers of Carnations generally, I have received a circular from the Rev. W. Wilks, mentioning that some time next summer it is proposed to hold a Carnation Conference at Chiswick, and that plants in threes of Carnations, Picotees, and Pinks, are respectfully invited for the trial which it is proposed to hold in the gardens during the ensuing year also. I hope in stating so much publicly I am breaking no confidence, or in any way treading upon rules and regulations which govern the Society. The circular invited three plants of each variety sent. So far, that is good. Those complying with the invitation will do well to send them well rooted and robust. The trial it is intimated is to be of hardy border varieties; there will be probably some difference of opinion as to what kinds are hardy, as Carnations generally are, at least in the south, so esteemed; but it will be open to all to have the point tested at Chiswick, fairly at any rate, and if plants of ordinarily grown show varieties are found to be as hardy as are the reputed border varieties, then the distinction as to hardy sorts will be largely effaced. The circular does not ask for the colour of the varieties to be mentioned. That is a weak element, as in any considerable trial of Carnations outdoors, it is indispensable that they be grouped into colours. I hope that, not only will all complying with the invitation of the Council give the colours of the flowers of each sort, but will send nothing under number, but all under name. Still farther, to ensure a stout, robust growth, all the plants should be in their blooming places not later than the end of November. The first duty of the Council should be to nominate a Conference Committee at once, and then invite that body to meet and sketch out proposals as to classes, and general conditions to be observed in connection with the trial, which should form an important part of the Conference proceedings. It should be remembered that out of all the Conferences hitherto held at Chiswick, this is practically the first in which there is real connection between growing examples in the gardens and the more literary labours of the Conference; the trial and the Conference should be, therefore, identical, and the former should be conducted absolutely under the guidance and control of the Conference Committee. I would suggest, and in making the suggestion I am but covering old ground, that the schedule issued should classify the Carnations, &c., into several recognised self colours, such as white, yellow, salmon-pink, rose, scarlet, purple, crimson, &c., and the flaked bizarre and fancy forms, as usually grouped at the Carnation Society's shows. Picotees the same, and Pinks into selfs of two or three colours, and laced forms; were every section carefully grouped in the open ground, it is obvious that the work of the jurors would be greatly aided, whilst the general effect of the trial would be so much greater also. Certificates of merit, it may be assumed, will be given to the trial varieties found to be of special value and effectiveness. In dealing with Carnations as hardy border plants, of course hardiness of constitution is an important element, but specially so is effectiveness of flower; the leaf also merits attention, whilst quality of flowers, even beyond effectiveness, should have

some consideration. All these points will need attention before any judging of the various groups takes place, as the awards of each section of judges should be based upon the same lines throughout. Assuming that the proposed trial of Carnations, &c., will be treated as an integral part of the Conference, and will be attended to solely by the Conference Committee, and not by the Floral Committee, I can have no doubt but that knowledge thereof would tend greatly to inspire confidence in the awards made, assuming that the committee is made up without favour or distinction of all who have reputations in connection with the flowers to be dealt with. In whatever way the various bodies of persons may be constituted, each body should include at least one member of the Carnation Society as a florist, and one other should be representative of the hardy garden aspect of Carnation culture. A third might very well be a trader in Carnations, because these invariably have special knowledge not open always to amateurs; whilst the recent Vegetable Conference showed in the fullest way how honourably traders in seeds could put aside all personal proclivities, and discharge their onerous duties without favour or bias. It is evident the Conference would derive increased importance were it determined to hold the annual exhibition of the National Carnation Society at the same time and place. The period which suits the Carnation for pot culture and exhibition, should find outdoor flowers generally at their best; and thus we might find a sort of treble show move—the National Society's, the Conference contributions, and the outdoor trial. It is understood that the proposed Fern Conference—never a very attractive subject alone, is to be joined to the Carnation Conference. Without doubt, the addition of Ferns may materially help to make the show under canvas attractive; but the two forms of plants could hardly be treated of simultaneously, and therefore diverse days should be devoted to each. The prospective outdoor trial of the Carnation and its allies renders that element by far the most interesting, and if but the support of growers of these beautiful flowers from all parts of the kingdom can be secured, the trial in the first place will be one of unequalled value and interest, whilst the gathering at Chiswick some time next July should form one of the most attractive and enjoyable of the Conferences held in the famous old gardens. *A. D.*

DEEP *v.* FLEET PLANTING POTATOS.—Having for the last four years paid very close attention to this subject, I would ask why the practice of deep planting is carried out so very generally in preference to shallow. I have always noticed that wherever Potatos are planted shallow on the soil of this garden, which is a very light one, they always suffer less from disease than those which are planted deep. *Alfred Bishop, Westley Hall, Bury St. Edmunds.*

BOUVARDIAS.—It was about last January that I sent you a note respecting the treatment I had adopted with my Bouvardias, in which planting out was advocated. I know that this practice has often been condemned in these columns by better men than myself, but, as I never adopt any hard and fast line in my methods, I would advise anyone who grows these fine winter-flowering plants to try planting them out on a nice, warm border another year; and, for experiment sake, I may just mention, as illustrative of what may be done by planting out, that I have to-day counted 160 heads of bloom on one plant of President Garfield, and twenty heads on several other plants propagated last spring. Perhaps I should state, for the guidance of those who may plant out another season, that it is essential the plants should not suffer from want of water, and should be pinched at the points as often as is necessary; and also when taking them up, in the month of September, to be careful not to injure their roots. *Alfred Bishop, Westley Hall Gardens.*

LEAF COLOUR IN THE GARDEN.—At this season, when flowers become scarce, a bit of colour in the garden is valuable. My friend, Mr. McIntosh advised me to plant Vaccinium pennsylvaticum for the beauty of the autumn tints of its leaves; when getting it from Woking, Mr. Waterer recommended in addition Andromeda arborea and A. Mariana, all these are now very beautiful. We have Dutch Azaleas and Liquidambar near them, but their colours are much the brightest. I should be much obliged if any of your correspondents could suggest a means of circumventing water rats; our Aponogeton distachyon (Cape pond weed), was in beauty, when a rise in the river sent rats up into the ponds, and they have eaten a great many of the flowers off. *George F. Wilson, Weybridge.*

PEARS AND APPLES WHICH DO BEST IN EAST ANGLIA.—In planting any fruit it is always advisable to get those which are good, and which do the best in the district. Taking kitchen Apples first, the earliest and most useful to come in here is Lord Suffield, then Cox's Pomona, Warner's King, Peasgood Nonsuch, Blenheim Orange, Bramley's Seedling, Wellington, and Sturmer Pippin. These will carry through as long as Apples will keep, and among dessert kinds the following are the best:—Beauty of Bath, Kerry Pippin, Cox's Orange Pippin, King of the Pippins, Ribston Pippin, Sturmer Pippin. Pears: Jargonelle, William's Bon Chrétien, Beurré Superfin, Louis Bon of Jersey, Marie Louise, Doyenné du Comice, Glou Morçeau, Winter Nelis, Josephine de Malines, Bergamot Esperen. *J. S.*

THE ROYAL HORTICULTURAL SOCIETY'S MEETINGS.—I trust the unanimous support of the horticultural press will be given to the proposal of "F. R." No new one, by-the-bye, but now that the Council seems disposed to alter the present hour for the meetings of the committees, that hour should be 1 o'clock rather than 12 o'clock. If the latter hour be specified, the usual time for refreshment will be deferred until those, who of necessity breakfast early, have become very hungry; whereas, if the former hour be selected the lunch may be enjoyed previous to the commencement of business. The ordinary public gatherings at which papers are read, if that feature be thought worthy of continuance, may then follow directly upon the rising of the committees, and the whole of the proceedings be over and everyone released for home at 4 o'clock. As one who has been perforce compelled to spend myriads of weary hours waiting until the word to clear was given by the superintendent, I can most strongly urge the need for the alteration in the hour of meeting proposed. It is so very obvious that not only do no outsiders come into the meetings during the afternoon, but that no one will, henceforth do so, for two years' experience is ample proof to that effect; that to keep the meetings unduly prolonged in the hope that some one may drop in, is to inflict punishment upon those who take plants or exhibits to the meetings without any adequate compensation resulting. The chief element of publicity connected with the meetings, indeed the real inducement for persons sending exhibits to the Drill Hall, is the full report so courteously and liberally given by the horticultural Press. Were that publicity withheld for a short time, the meetings would soon collapse—that would be an inevitable result. The time of the meetings and their duration should, therefore, be modified, as much in the interests of the Press as for any other body of persons. There is yet one other reason why the general convenience of all persons concerned—whether the Press, members of the committees, or exhibitors—should be studied, and that is, the possible growth of a powerful competitor for public favour at the Royal Aquarium close by. It is known that beyond the present meetings and shows of the National Chrysanthemum Society, some seven monthly exhibitions of all sorts of flowers in season, for which prizes will be offered, will also be held; and should from these gatherings presently develop the practice of granting certificates of merit to flowers, fruits, &c., it may be that the Drill Hall gatherings will be sadly shorn of their old interest and associations. There is nothing to prevent the Aquarium authorities, or, perhaps, the National Chrysanthemum Society, developed in time into the National Horticultural Society—for it is a growing, if not an ambitious body—from establishing a certificating committee; and should that be so, it would find plenty of work. The Council of the Royal Horticultural Society, therefore, should act with every consideration for the requirements of its supporters, and the present seems to be a peculiarly suitable moment for making an important change speedily and graciously. *A. D.* [As this is pre-eminently a time for union, while disunion would be disastrous to horticulture, we have no doubt that the council will do its best to meet the reasonable requirements of all its constituents. Ed.]

CONCRETE WALKS.—The letters about turf walks in kitchen gardens are interesting, but why are concreted paths altogether left out of sight by the writers? They seem to me to be better than turf or gravel for a kitchen garden at all events. Not only do they not harbour slugs and vermin, but they afford a perfectly dry promenade soon after rain; and I think they look nice, at any rate, when they have toned down a little. Of course a little extra expense must be put up with at first, but the concreted walks soon pay for themselves in their comparative freedom from weeds, and they require no attention whatever. But all this is not my strongest point regarding them. Their one solitary defect in my eyes has been turned in my case into their greatest usefulness. I have said above that these walks are comparatively free from weeds—they are in truth absolutely free of them except at their edges, where a thin crack is sometimes made between them and the upright tiles by which they are bounded. This seems to be more or less unavoidable. It is but the merest opening that is visible, and in itself of small importance from any point of view. But weeds manage to find out these little vacant places, and they have often appeared happy in them, although they are outwitted now, for the bright thought struck me in April last, that if weeds like these interstices so well, and send their roots so happily under my concreted walks, why should not alpine plants do the same? Nay, more than that, could any habitation be found for alpine plants which they would more intensely delight in? They like to be squeezed between stones, and they would have the whole length and breadth of the pavement, where their roots could ramble *ad libitum*, and be perfectly cool and unmolested under the rays of the hottest sun. I have never seen a rockery anywhere which seemed so well to afford the exact conditions which alpine plants insist on. No sooner had the thought entered my head, than I planted one side of a long path thickly with rooted bits of Gentiana acaulis, Campanula tenella, and other things. This was by way of experiment, and on my return home a few weeks ago I was very curious to see how they were all getting on. They are, I may say, just as I supposed they would be—excessively happy; and they all unite in declaring to me, that this is the best home I have found for them as yet. In consequence of this, I have planted hundreds of Gentianas with my own hands in October in similar situations, for the process of planting and of stuffing the little novelty in between the chinks requires some care, and I fully believe that I have no alpine plants in my garden that will do better than these. They can laugh at the sun, and that is saying a good deal for any plant in the Isle of Wight during the months of July and August. It is true that they look in imminent peril of being trodden on by every passer-by, but that is not the case for the most part, they are just saved by the angle of the walk. It may be the case that long straight lines of Gentianas will look rather formal eventually, but I shall willingly put up with that. I study to make my plants happy, and I care for little else. As a general rule, the very last thing in the world which they fall into is a formal habit. It need scarcely be said now that I like concreted walks more than ever. Their one defect in my eyes has been turned into their greatest excellence. The reason why I planted so many specimens of Gentiana acaulis was simply because I happened to have them by me, and I have often seen them used for edgings in old kitchen gardens. I think most alpine plants would thrive as they are doing now, and I have visions of trying more difficult things in this manner at some future day—*e. g.*, Eritrichium nanum itself. The little chink in the angle of the walk, and the large cool place for its long roots to ramble in, might perhaps supply its wants. Saxifrages and Campanulas at all events say already with acclamation that they are more than content. *H. E.*

TURF WALKS IN KITCHEN GARDENS.—I have watched your correspondence on this subject with great interest, as one always does when the subject is brought home to one as it is in these gardens. I do not know what can be more pleasant to look at and walk on than well kept grass, and it surely surpasses gravel for neatness; and where there is a border of mixed flowers on either hand, or an edging of a decided colour, the affect is very good. We have here a walled-in kitchen garden of 9 acres, with walks all round and twice across it, of 9 feet in width; the length of all of them being 998 yards. Now if the same were gravel paths, it would be impossible for me to keep them clean without considerable addition to the labour employed. *G. Howes, Merton.*

—— Walks form not the least attraction in any garden, and although the lawn may be well kept, the flower-beds gay, and the kitchen garden well cropped, if the walks are badly made or kept, they always mar the other

features. Turf walks in kitchen gardens, no doubt, look in summer cool and refreshing, as compared with gravel, especially if the garden be of sufficient extent to allow of a 5 or 6-feet border for herbaceous plants, which may be added to at bedding-out time by planting spare summer bedders. But I am rather sceptical as to the advisability of turf walks for winter, but much depends on the elevation of the garden and the nature of the soil; if low-lying, stiff, and retentive, turf walks which were frequently used would become a quagmire, and would soon be shorn of their beauty; then, again, the necessity for procuring boards whenever any amount of heavy barrow work had to be done would be troublesome; and I am of the same opinion as the "Man in Doubt" as to such walks being a capital harbour for slugs. During the day-time these creatures travel over gravel walks or paving in showery weather in the spring in search of food, and turf would facilitate their doing so. Some years ago, when serving at a nobleman's place in this county, the new gardener found that most of the Box edging was nearly a foot high, so in the autumn he decided to relay it, and, after ascertaining the proper level of the walks, the Box was relaid. The walks were then taken in hand; they had a very good foundation, so a layer of chalk was put on it to bring the walk nearly to the required level, the chalk was well rammed, then a layer of "beach" gravel from the sea-shore, which is screened of several degrees of fineness, the finest being similar to split peas, was spread over this and rolled to bind it with the chalk, and a finish was made with a thin covering of fine beach. These walks always remained hard, dry, and pleasant to walk on in all weathers, and woe betide that labourer who came off the quarters with muddy boots without making use of the scraper, or who trundled a wheelbarrow with a dirty wheel along them. There being some few miles of "beach" walks on the place, it became one man's work to attend to them, and it was surprising what he would get over in a day, with a Dutch hoe and a short-toothed iron rake. The walks in the kitchen garden were always raked over on Saturday afternoons, to obliterate wheel marks. Of course hoeing is out of the question on walks composed of good binding gravel; but in these days of "weed killers" the slow and tedious method of hand-weeding can be entirely dispensed with. For dryness and comfort in winter, I prefer gravel walks, whether composed of beach or binding gravel. *G. Potts, jun., Northiam, Sussex.*

—— Referring to the various letters in your columns as to turf walks in kitchen gardens, I for one consider that in many cases, if these are intended for ornament only, I should, where the garden is adapted for turf, use it. But how many gardens are unfit for the purpose? I know that where there is much traffic, turf would soon be very unsightly, as do corners and curves in the lawn if persons are not warned off by the notice, "Please keep off the grass." Then with regard to the expense of keeping gravel in order. If an application be given of cuproline in the spring, it will keep the walk free from weeds at a minimum of cost till the next spring. If a kitchen garden is in close proximity to the dwelling, and has a somewhat bold entrance, and the glass department, as it should be, is placed by itself elsewhere, then, I would say, have a broad walk of turf, with a flower border on either side; it certainly looks better for the flowers, and is soft to walk upon in the summer, and also very soft and wet in autumn and winter. I am of opinion that there is nothing better than good gravel or asphalte walks for kitchen gardens, they not being spoilt by ordinary traffic. *W. A. C.*

PRIMULA OBCONICA.—In a note on this plant (p. 504) no reference is made to its poisonous properties. I think these have already been mentioned in the *Gardeners' Chronicle*. Upon some persons the effects of touching the leaves are similar to those produced by Rhus toxicodendron. Violent irritation of the skin, similar to that produced by scalds, is the result. I have had two or three communications during this year, calling my attention to this, and I think there can be no doubt about the facts. *C. Wolley Dod, Edge Hall, Malpas.*

THREE CROPS OF MELONS FROM ONE PLANT.—In the *Gardeners' Chronicle* for June 8, p. 714, Mr. Ward gives his experience of growing five crops of Melons from the same plant; but, though not getting five crops, we have been successful in getting three crops from the same plant, without the aid of hot-water, all our Melons being grown in frames. We generally secure two crops from the earliest planted frames, but this year we have managed to get an extra one. Our first frame was planted this year on March 27, a three-light frame with one plant in each light, the centre one being planted with Sutton's Hero of Lockinge, the other two lights with Monro's Little Heath. When the blooms were ready for fertilising we had a spell of damp cold weather, which prevented them from setting freely; after the setting period the plants grew on, and swelled their fruit as well as could be desired. By June 26 the first fruit was ripe, Hero of Lockinge coming in the first by a day or two. From this crop we obtained eighteen fruit, the two largest weighing 4¾ lb. each. A few shoots had been allowed to grow on each plant, so that when all the fruit had been cut, all useless shoots and leaves were removed, and the new ones trained in their places. These were stopped in due time to induce lateral growth, which flowered and set very freely. When the fruit were about half grown, one of the Little Heath plants rotted at the collar, but the other two plants grew on well and ripened eleven nice-sized and good-flavoured fruit, the first one being cut on August 22. Three shoots were trained from the centre plant into the place of the one that died, and from these four fruit were produced, which ripened by September 19, and weighed nearly 2 lb. each. So from this one plant (Hero of Lockinge), three crops were cut, producing sixteen fruit. The total number cut from the frame was thirty-three. I might say that a second crop of five fruit was also cut from a later planted frame. *J. S. Upex, Milton Park.*

RENOVATING OLD FRUIT TREES.—The season has now arrived when much may be done in improving the condition of old fruit trees, many of which may be seen in gardens and orchards in a very neglected condition, as by being left so much to themselves, they are not only full of branches that cross and recross, and are so full of wood as to shut out much of the light and air, so essential to the main leafage and fruit, but the bark is covered with moss and lichen, which tell most prejudicially on the health of the plants. The first preliminary to rectify all this is, to thin out the heads by using a sharp, fine-toothed hand-saw, cutting away all branches that are misplaced, or which crowd and interfere with the others. This done, the next thing is to carefully pare the wounded stumps with a knife, the wounds getting covered with new bark so much quicker than when they are left rough from the saw. With the thinning completed, attention should be given to the moss and lichen on the stem and branches, by lime-washing the tree, a job which is best performed by the garden engine. The wash is made as follows:—Get fresh lime, slake it in a large tub or tubs, according to the quantity required, and when the slaking is complete, pour the lime-wash through a fine sieve. With this straining, all will be in readiness for putting the wash into the engine, and the fresher it is used the better. The lime sticks to the moss and lichen more effectually if it be applied when the trees are damp from fog, and on a still day; and it will remain on them till the spring. Not only will lime-wash kill moss and lichen, but it is an excellent remedy against some species of insects that affect the trees, and by falling or being driven into every or most of the crevices of the bark, it prevents the breeding and spread of that scourge to Apple trees—the American blight. It is a good plan, also, to lime the ground under the trees. In addition to seeing to the tops of the trees, it may also be necessary to assist them below, which may be done by breaking up the soil and giving a good dressing of old rubbish-heap stuff, with the ashes of burnt hedge-trimmings and other gatherings that accumulate in most places. These, with some dung and lime, will act, and work wonders as a stimulant, and force healthy growth, as I can abundantly testify by their use here, where, every year, we do a portion of our orchard by trenching in what we have to spare; and there is a marked difference in the trees so treated, and in the fruit which they bear. Plums, Cherries, Gooseberries, and Currants, also pay well for liming, as not only does it free them generally from parasites, but it makes their buds distasteful to birds. With regard to Pears, much that has been said in reference to Apples applies to these fruits also, in cases where they are grown as standards or in the pyramid form, in the latter of which they are often much too woody, having far more branches than they should have; these should be well apart, and not nearer than from 18 inches to 2 feet, and spurred in quite closely. In cases where the spurs have been allowed to get long, the present is the time to rectify matters by cutting them back, and if placed too thickly, by thinning them out, as it is easy at this season to distinguish between the wood-buds and the flowers-buds, so as to leave a sufficiency of the last-named when doing the work. *J. S.*

THE CHRYSANTHEMUM CENTENARY.—This celebration does not lose the least in its interest because this is not the actual centenary of the introduction of the living plant into England. The Chrysanthemum was in cultivation in the Apothecaries' garden at Chelsea in the year 1763, and two specimens grown that year are now in the Herbarium of the British Museum. In 1721, when Sir Hans Sloane purchased his estate at Chelsea, he gave the freehold of the gardens to the Apothecaries' Company, on condition that the company should annually deliver fifty new plants to the Royal Society until they had delivered 3000 in all. The catalogue of each parcel of plants was published yearly in the Philosophical *Transactions*. On March 14, 1764, the catalogue of the plants thus received was read at the Society's meeting, and No. 2112 is the cultivated Chrysanthemum. The whole collection of Chelsea plants has been transferred from the Royal Society to the British Museum, and is now incorporated in the great Herbarium here. The great interest taken in the Chrysanthemum at the present moment has induced me to place for a short time these earliest specimens of the plant in a case in the public gallery of this department, where they can be seen by visitors. I have placed with them some of the first published figures of the Chrysanthemum, some Japanese drawings, and a fine series of original drawings by Chinese artists, made under the direction of the late John Reeves, Esq., of Canton, early in the century. *William Carruthers, Natural History Museum, Cromwell Road, November 6.*

A YELLOW ROBIN.—A yellow robin was first seen in the garden here on July 2, when it was quite yellow, with the exception of its breast, which was of a dull brown colour. This part is now becoming darker, and all other parts of the plumage remain of a yellow colour. I should like to know if this is a common occurrence. The bird is very tame, and may be seen flying about the garden at any time. *G. Marphett, Clayton Croft, Wilmington, Kent.*

WINTER SALADS.—In reply to the Editorial note at p. 494, I beg to say that the following varieties of Lettuce, sown and treated as hereunder noted, yield a good supply of winter salading, namely, Paris White Cos, Improved Black-seeded Bath Cos, Sutton's Favourite, and Marvel (red-edged Cabbage). The plants raised from sowings of these varieties, made at the end of June and the middle of July, come in for use in autumn and early winter; the plants having been pricked out in beds a few inches apart as soon as large enough, and subsequently transplanted with nice balls into rows a foot asunder, and at the same distance from plant in the rows before they became crowded in the beds, and duly attended to in the way of giving water at the roots during dry weather, are taken up carefully with good balls of soil, and planted a few inches asunder in a cool pit, having a south aspect, and from which frost and heavy rains are kept out by means of shutters and sashes, these being covered in severe weather with Fern or litter. The plants are put the same depth in the soil as they were before, and water is given to settle the soil about the roots, taking care in doing so not to let the water run into the heart of the plants. About August 25, I sow Black-seeded Bath Cos, Hick's Hardy White Cos, Hammersmith Hardy Green Cabbage, and Sutton's Marvel Cabbage, to raise plants for use in heated and cool pits in January, February, and March, and in warm borders out-of-doors in April, May, and the first and second weeks in June, when the supply is supplemented by plants raised in heat in the middle of January, nursed on, and gradually hardened off before being finally transferred to a sunny border. I need hardly add that the half and full grown plants which have been taken up and planted in cool pits on the approach of frost have, in the absence of frost and heavy rains, an abundance of fresh air given them, whilst the plants resulting from the sowing made towards the end of August growing in heated and cool pits, and frames, placed on south borders, have just sufficient fresh air admitted as will ensure a sturdy growth being made. Like all gardeners similarly situated, I endeavour to secure as great a portion of the leaves of the individual heads of Lettuce as white and crisp as possible, or recourse is had to

the usual practice of tying up the leaves, but not too tightly, when the heads have nearly attained to their full size. As the leaves of the Cos Lettuce are infolding, they do not, as a rule require tying up, although by so doing the process of blanching is more thoroughly effected. The tying up should be performed when the leaves are quite dry. The Cabbage Lettuces generally require to be tied up to become well blanched; one band of matting, which should be tied within a couple of inches of the top of the heads, being ample for each Lettuce. The plants during every stage of their growth are kept perfectly moist at the roots; otherwise they would be wanting in flavour and crispness of leaf. *H. W. Ward.*

SOCIETIES.

ROYAL HORTICULTURAL.

November 5.—The meetings of the committees were held at Chiswick on the first day of the Chrysanthemum Conference, but the Chrysanthemums absorbed so much that there was very little else to occupy their attention, and as the business was so small, the Floral and Orchid Committees amalgamated.

Floral and Orchid Committees.

Present: W. Marshall, Esq., in the chair; and Messrs. S. Hibberd, W. Holmes, G. Paul, J. O'Brien, H. M. Pollett, J. Laing, P. Blair, H. Turner, J. Walker, H. Herbst, F. W. Burbidge, and C. Noble.

A very attractive exhibit was a magnificent bank of over one hundred plants in pots of Carnation Improved Miss Joliffe, contributed from the gardens of Leopold de Rothschild, Esq., Ascott, Leighton Buzzard (gr., Mr. J. Jennings). They were well-flowered plants, and each bloom of a charming rosy-pink colour, and sweetly scented. A Silver Banksian Medal was awarded.

Messrs. J. Veitch & Sons, Royal Exotic Nursery, King's Road, Chelsea, S.W., contributed a few trusses of hybrid greenhouse Rhododendrons, which were as attractive as usual; and a large piece of the fine winter-flowering hybrid Begonia Adonis, with a quantity of flowers on it.

There were specimens of Vriesia Mari ×, with bright green foliage and a flower-scape a foot in height, and scarlet; the bracts being yellowish-green, densely spotted with red-brown. Mr. Truffaut, Versailles, was the exhibitor.

A Buddleia was sent by Mr. F. Ross, Pendell Court Gardens, Bletchingly. It is figured in another column as bauriculata; the lanceolate leaves are dark green above, greyish beneath, about 2 inches long; the flower-tubes pale cream, with white lobes, and deliciously scented. See p. 529.

The Orchids shown comprised a few small plants, which were Trichosma suavis trilabellia, a form in which the petals have assumed the coloration of the lip; Stelis micrantha, with racemes 2 or 3 inches long, bearing minute pale yellow flowers; and Cycnoches barbatum, a spike 15 inches high, with about a score of flowers. The sepals and petals are pale brown, spotted with red-brown; lip white, with the median lobe long, and coloured like the other segments of the flower; the long and slender column is also very noticeable; a plant of Angræcum had several flower spikes of pale yellow flowers. Messrs. Beale & Co., New Southgate, had specimens of their specialties.

Fruit Committee.

Present: J. Lee, Esq., in the chair, and Messrs. H. J. Veitch, G. W. Cummins, F. R. Lane, H. Balderson, J. Wright, W. Bates, G. Wythes, W. Wildsmith, J. Hudson, W. Denning, and T. J. Saltmarsh.

Mr. H. Balderson, Hemel Hempsted, sent ten varieties of Grapes from one vinery, among which were Foster's Seedling, Alicante, Black Hamburgh and Tokay. Mr. G. Wythes, Syon House Gardens, Brentford, sent a large fruit of Monstera deliciosa, in good condition. Some fine Mushrooms were contributed by Mr. Miller, gr. to the Rt. Hon. Lord Fowley, Ruxley Lodge, Esher, from a bed in the open, spawned the second week in September; and Brussels Sprouts, Wiles' Perfection, with small solid Sprouts, from Mr. E. S. Wiles, Edgecote Gardens, Banbury.

The Chrysanthemum Conference.

November 5 and 6.—The Conference and show instituted by the Royal Horticultural Society to celebrate the Centenary of the introduction to Europe of this popular flower passed off on Tuesday and Wednesday last, and must be considered very satisfactory events. Below, a detailed report of the exhibits of plants, and flowers, shown in the vinery at Chiswick, is given; but for a summarised account of the Conference proceedings, &c., reference should be made to p. 532.

The groups of Chrysanthemums in pots were arranged on the floor of the vinery; the space left for promenading, which was necessarily circumscribed, was at the sides, and between the various groups.

The Royal Horticultural Society made the most of the display, its exhibits being very creditable, varied, and fresh. We notice first the group of Japanese of the reflexed type, and of which the following were considered to be in best form, if not actually intrinsically best:—Helvetté, rose-pink; W. Clark, salmon; Souvenir du Japon, rose; Enchantress, rosy-lilac; Source d'Or, crimson; W. Stevens, orange; G. Stevens, orange; Val d'Andorre, rich brown; Galathea, lilac; Alie Bird, bright yellow, with florets of much width; Theodore Buller, light reddish-brown; Feu de Bengale; Hamlet, salmon-red and yellow; Jeanne Delaux, reddish-brown; M. Juan Cruz de Equileor, and Mdlle. Mélanie Fabire.

Japanese incurved varieties were of equal merit, and included amongst the best plants, Mrs. Townsend, rich claret, with florets that are flattened and drooping; Middle Temple, rosy salmon; Cœur Fidèle, red, striped yellow; Mr. C. Orchard, chestnut-red, shaded with yellow in colour, with long florets; Fanny Bouch, creamy-white, and occasionally pink shaded; Macaulay, yellow, a frizzled petalled flower; and Belle Etoile.

The large or Japanese Anemone-flowered class of flowers contained good examples of J. Thorpe, jun., golden-yellow guard florets and disc; Georges Sand, bronzy-red, with red disc, tipped with yellow; Lady Margaret, white, &c. The remaining group, from the Society's garden, consisted of Pompon varieties. Kew came out unexpectedly strong, the various Chrysanthemums shown being specimens of good if not exhibition culture, the plants relatively dwarf and well foliaged. Japanese varieties predominated. A good group of Japanese and incurved varieties came from Messrs. Fromow & Sons, nurserymen, Chiswick.

Mr. G. Stevens, St. John's Nursery, Putney, upheld his fame as a cultivator of the flower by a group consisting of plants of nearly all the various classes. This group was backed by another, that of Mr. Ballantine, gardener to Baron Schroder, The Dell, Egham. This lot had good blooms of Empress of India, Madame J. Laing, Stansted Surprise, Lord Alcester, Baron Beust, Fleur de Marie, Mrs. Dixon, Hiver Fleur, Avalanche, and Elaine. It came as a surprise to see Chrysanthemums from this home of good Orchid culture so well done as these.

Mr. C. Turner, Slough, put up a group of average quality, and amongst the varieties shown were observed good examples of the new Sunflower, yellow; M. Desbreux, red orange; M. Bernard, crimson; Ed. Molyneux, all of the Japanese type. Other types were shown, but which do not call for remark.

Cut Flowers.

These were arranged on the staging which runs along each side of the vinery, and the space was pretty well occupied, there were five exhibitors of representative collections, comprising blooms of all sections, and in this class, Mr. E. Molyneux, Swanmore Park Gardens, Bishop's Waltham, Hants, had a grand lot of blooms, high quality was observed in all his flowers; and, indeed, this collection was one of the best shown.

Of twelve incurved varieties: Empress of India, Lord Alcester, Golden Empress, Violet Tomlin, J. Salter, Golden Queen, and Alfred Salter, were the leading. Reflexed varieties were large and well-coloured, and comprised Cullingfordi (fine), King of the Crimsons, Golden and White Christine, and Phidias.

The Anemone-flowered varieties were very bright and fresh looking, among which were Fleur de Marie, Glück, Fabian de Mediana, Margouline, Mdlle. Cabrol, Grande Alvéole and Nelson.

The Japanese blooms comprised remarkably fine coloured examples of Etoile de Lyon, Val d'Andorre, and E. Molyneux, whilst there were also good specimens of Condor, Jeanne Delaux, Avalanche, Madame J. Laing, and Sunflower.

Fimbriated flowers were well shown in Crœsus Scapin, and Belle Navarraise; whilst Mrs. le Moult, Mrs. Duke, Crushed Strawberry, Effie, America, and others were examples of single blooms. A number of Pompons were also included.

An almost, if not quite as fine a lot of blooms were those staged by Mr. C. J. Salter, gr. to T. B. Haywood, Esq., Woodhatch, Reigate, who had in his twenty-four Japanese some beautiful blooms, large, and well formed. There were among them Yokohama Beauty, Puritan, Lady Lawrence, L'Adorable, grandiflora, Stansted White, Mons. Astorg, Jeanne Delaux, Mrs. J. Laing, and Madame Baco. The incurved blooms were not so large in proportion, but were very even and well finished. Barbara, Lord Alcester, Empress, Jardin des Plantes (fine), Prince Alfred, Mr. Brunlees, Lord Wolseley, and Princess deserve mention for their high quality. The Anemone-flowered varieties, too, were very bright in this collection, and were also of large size. La Marguerite, Acquisition, Sabine, Glück, R. Owen, a fine pure white; Grande Alvéole, and Thorpe Junior being some of the best. Of the reflexed, Phidias, White and Golden Christine, Cullingfordi, and King of the Crimsons may be named. The Pompons comprised some of the most popular of this decorative section, as Black Douglas, Prince of Orange, and Mdlle. Elise Dordan; with Astrea, Sidonie, Marie Stuart, and Madame Sentir of the Anemone section.

From their nurseries at Forest Hill, Messrs. J. Laing & Sons sent a number of blooms of popular varieties, as Dormillon, Madame J. Laing, Elaine, Alba Fimbriata, Criterion, Roi des Japonais (fine), Etoile de Lyon (large), Condor, &c. Incurved blooms comprised Empress of India, and the golden form, Alfred Salter, Violet Tomlin, and Queen of England, all very creditable; and a capital bloom of Cullingfordi was also shown.

Mr. Robert Owen, the Floral Nurseries, Maidenhead, had about seventy varieties of all sections, including some recent introductions, showing them with long stalks and in triplets, the blooms not being of the exhibition standard. Some of the most attractive-looking varieties are now enumerated:—Japanese, Ninon, salmon-rose, and white tips; Madame Pynaert van Geert, deep purple-red, with pale tips; Eugène Gait, yellowish-brown, shaded darker towards the centre; Miss Gorton, Sunflower, Thomas Stephenson, a pale brownish-pink; Anatole Cordonnier, crimson-lake; and Condor. Of Anemone flowers, Gladys Spaulding, yellow; with pale brown rays, is very distinct; M. Pankoucke, Japanese Anemone, and Mrs. Judge Benedict, blush disc and ray florets, those of the disc being tipped with yellow. A number of single varieties included Lily Owen, pale brown, large; Miss Brown, white rays, flushed with pink towards the tip, leaving a clear white zone around the disc; Alice Owen, soft crimson, with a white zone; and Daisy, pure white. The Pompons were very pretty, and included Lune Fleuri, old gold colour; Yellow Snowdrop, Mdlle. Elise Dordan, Précocité, Cedo Nulli and its lilac form. Several well-known sorts were exhibited in each of the above sections.

Messrs. H. Cannell & Sons, Swanley, Kent, showed a great collection of popular and novel varieties, numbering in all about 250. It was truly a representative collection, and the flowers were shown on long stalks, in the same manner as in Mr. Owens' collection. Of the older and well-known varieties, no mention is necessary, and only the best of the novelties or recent varieties are now noticed. There were the bronze sport from Mr. Bunn, and H. Shoesmith for comparison, Violet Tomlin, J. Elliott, a beautiful deep port-wine-coloured Japanese; Stansted White, Molitor, fringed Japanese, bronze, with yellow tips; Yellow Jane, a bright, clean yellow single—a suitable companion to Jane; Ami de Forgeot, Japanese, with narrow petals, pinkish-mauve; Eynesford, white; Sunflower, a fine yellow; Alcion, pale crimson Japanese; Feu d'Amour (Pompon), Baron Beust (incurved), and Mrs. F. Jameson (Japanese). Messrs. Cannell also contributed twenty-four enormous blooms of Etoile de Lyon, measuring from 9 to 11 inches in diameter.

In the class for new varieties there were several exhibits, some of the blooms would, however, have been better described as recent varieties, since they are already in commerce, as in the collection of Messrs. Wm. Clibran & Son, who showed L'Automne, pale cinnamon incurved Japanese; Etoile de Lyon, Japanese; Alfred Lyne, incurved, rosy-lilac; Stansted Surprise, President Hyde, reflexed Japanese, yellow; Annie Clibran, pink sport from Mdlle.

Lacroix and Thos. Stevenson, cinnamon sport from Criterion.

Messrs. J. Carter & Co., High Holborn, London, W.C., showed a new Japanese variety, Mrs. James Carter, with long hair-like pale yellow petals, this is its first appearance, and will doubtless be much finer next season. The same firm also had Holborn Beauty, a reflexed decorative variety with broad dull yellow petals with a brown shade.

An elegant and bright coloured yellow Pompon, Alice Stevens, one which will doubtless prove a useful decorative variety, came from Mr. G. Stevens, St. John's Nursery, Putney. Mr. W. Heath, Hampton Manor Gardens, sent a cinnamon-yellow sport from Madame J. Laing, under the name of Lady Peel. Mr. Molyneux sent a reflexed sport from George Glenny, from which it differed only in that respect. It was named Mrs. Horrib, and promises well as a valuable variety for cutting from, as it is evidently a very free flowerer, and the soft yellow colour is very pleasing; this exhibitor also sent Miss M. A. Haggas, a rich cream coloured incurved; Violet Tomlin, James Nelson, Japanese Anemone, white rays with creamy yellow disc; Puritan, Japanese reflex, white splashed with crimson purple. A fine golden sport from Ralph Brocklebank was sent by R. Brocklebank, Esq., with the name Mrs. Bevan Edwards; and from Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, came a plant of what was undoubtedly the greatest novelty of all in Mrs. Alpheus Hardy, a flower of which much has been heard, and the specimen shown fully bore out all that had been said concerning it. On p. 553, an illustration of this American introduction will be found taken from Mr. Ware's plant. It is pure white, with the reverse of the petals studded with conspicuous white hairs. It is quite distinct.

Messrs. H. Cannell & Sons had several varieties, among which were Robert Cannell (incurved), madder-brown, good reverse, large bloom; Cardinal Desprez (Japanese), slightly incurved, crimson-lake, silvery reverse; M. E. A. Carrière (Japanese), white, with pink flush on the reverse, the petals slightly twisted; Bombardier (Japanese), rich crimson petals, with revolute margins; Miss M. A. Haggas, Violet Tomlin, and Sir James Whitehead (Japanese reflexed), dull lake purple.

There were two lots of blooms in the class for incurved varieties, Mr. E. Berry, Roehampton House Gardens, staging two dozen of even quality and moderate size:—Emily Dale, Alfred Salter, Refulgence, Mrs. Heale, Empress of India, Prince of Wales, Jeanne d'Arc, Golden Empress, John Salter and Beverley, were very neat examples.

Mr. W. Wildsmith, Heckfield Place Gardens, Winchfield, Hants, had a dozen very fine flowers, including Jeanne d'Arc, Princess of Wales, Empress of India, Golden Empress, and Barbara.

In the class for Japanese, there were several exhibitors, a grand lot of twelve heavy and bright flowers came from Mr. Wildsmith; Ralph Brocklebank, E. Molyneux, Madame J. Laing, Sarah Owen, Avalanche, Madame C. Audiguier, and Martha Harding, were all well represented.

Mr. R. F. Jameson, Hessle, had a dozen strong flowers of good substance, including La Boule d'Or, Sunflower, Mr. F. Jameson, Belle Paule, Madame J. Laing, and Monsieur Tarin.

Mr. W. Fyfe, gr. to Lord Wantage, Overstone Park, Northampton, contributed a fine lot of large blooms —Ed. Molyneux was specially good, and others were Madame C. Audiguier, Madame J. Laing, Sunflower, Alba fimbriata, Monsieur Freeman, Criterion, and R. Brocklebank.

A very finely coloured lot of full heavy blooms was that shown by Mr. E. Wills, gr. to Mrs. Pearce, The Firs, Bassett, Southampton, among which were Comte de Germiny, and La Boule d'Or (fine colours), and Japonais, Sarah Owen, Peter the Great, Madame de Sevin, Baronne de Prailly, Madame C. Audiguier, and Elaine.

Messrs. Wm. Clibran & Sons, Oldfield Nurseries, Altrincham, sent a number of large blooms in excellent condition. Sarah Owen, Bertha Flight, Madame C. Audiguier, Criterion, Thos. Stephenson, and Madame B. Pigny being the leading specimens.

From Mr. Pope, Highclere Castle Gardens, Newbury, came a few smallish neat flowers, Ed. Molyneux, Avalanche, Comte de Germiny, Elaine, Peter the Great, and Madame J. Laing being well shown.

Reflexed varieties were only shown by Mr. Wildsmith, whose twelve were excellent examples, of large size. Cullingfordi was very fine, and others included Cloth of Gold, Amy Furze, King of the Crimsons, and Peach and White Christine.

Messrs. Paul & Son, Old Nurseries, Cheshunt, were the sole exhibitors of twelve large Anemone-flowered varieties, having elegant and large examples of Sabine, Thorpe Junior, Nelson, Acquisition, Jeanne Marty, Souvenir de Madame Blandinières, and La Marguerite.

Pompons were only shown by Mr. C. Gibson, gr. to J. Wormald, Esq., Morden Park, Surrey, who had twelve large and fresh flowers, Black Douglas, President, Cendrillon Marabout, Prince of Orange, and Madame Hoste being the best.

In the class for twelve yellow incurved blooms, Mr. Molyneux, Swanmore Park Gardens, Bishop's Waltham, had a superb stand of Golden Empress, very even and well-formed blooms. Mr. E. Berry, in this class, showed Golden Empress and Emily Dale, the first-named being the better examples.

In the class for twelve white Japanese, Mr. Berry contributed excellent flowers of Avalanche, Maiden's Blush, and Mdlle. Lacroix; other lots being from Mr. J. Doughty, gr. to Mrs. Tomlin, Angley Park, Cranbrook, Kent, who had Elaine; and from Mr. F. Jameson, who sent Avalanche, Elaine, and F. Percy, fairly good blooms.

Mr. G. Burnett, Grange Gardens, Hillingdon, Uxbridge, showed a dozen solid and richly-coloured Roi des Japonais, as bronze Japanese, Val d'Andorre in the class for red or crimson Japanese, and Madame J. Laing and Mrs. C. Audiguier for lilac or pink Japanese, all being good even flowers, and not too large.

Mr. Parker, Impney Hall Gardens, Droitwich, sent a bunch of Chrysanthemums from the open, fine flowers, large and bright.

Various appliances were shown. Cups, &c., for exhibition came from Mr. Mercer, Childwell Hall, Liverpool, the Hull Chrysanthemum Society, Mr. Beckett, Aldenham House, Elstree, and Messrs. E. P. Dixon & Sons, Hull. The last-named also had the Jameson exhibition name-card holder, by which all the cards are held up at the back of the stand so as to be easily seen.

The following is a list of the varieties to which Certificates of Merit were awarded, with the name of the exhibitor:—

ESTABLISHED VARIETIES.

Incurved.—From Mr. E. Molyneux: Empress of India, Golden Empress of India, Queen of England, Golden Queen of England, John Salter, Alfred Salter, Lord Alcester, Princess of Wales, Mr. W. Shipman.

From Mr. W. Wildsmith: Lord Wolseley and Hero of Stoke Newington.

From Mr. C. J. Salter: Barbara.

From Mr. E. Berry: Mr. Brunlees.

Japanese. — From Mr. Molyneux: Madame C. Audiguier, Edwin Molyneux, Sunflower, Jeanne Delaux, Mdlle. Lacroix, and Madame Laing.

From Mr. Salter: L'Adorable, M. Astorg, and Mons. Freeman.

From Mr. E. Wills: Japonais, Criterion, Thunberg, and Bertha Flight.

From Mr. G. Burnett: Val d'Andorre, and Roi des Japonais.

From Mr. J. Doughty: Elaine.

From Mr. E. Berry: Maiden's Blush.

From Mr. W. Wildsmith: Ralph Brocklebank.

From Mr. Jameson: Belle Paule, and La Boule d'Or.

From Mr. Fyfe: Avalanche.

Reflexed.—From Mr. Molyneux: Phidias, and White Christine (Mrs. Forsyth).

From Mr. C. J. Salter: King of the Crimsons, William Earley, and Mrs. Mayes.

From Mr. W. Wildsmith: Cloth of Gold and Chevalier Domage.

Anemone-flowered.—From Mr. C. J. Salter: Miss Annie Lowe, Gluck, Lady Margaret, Grande Alvéole, La Marguerite, and Fabian de Mediana.

From Mr. Molyneux: Fleur de Marie, Empress, and Nelson.

From Messrs. Paul & Son: Jean Marty and Souvenir de Madame Blandinières.

From Mr. J. Parker: J. Thorpe Junior.

Pompons and Anemone Pompons.—From Mr. C. Gibson: Cendrillon, Prince of Orange, Marabout, Nellie Rainford, Black Douglas, Eléonore, Rosinante.

From Mr. Salter: Madame Martha, Astrea, Calliope, and Madame Sentir.

From Mr. Molyneux: Antonius, Mdlle. Elise Dordan, Toussaint Maurisot, Regulus and Briolis.

NEW VARIETIES.

From Messrs. H. Cannell & Sons: Miss M. A. Haggas and Violet Tomlin (incurved); M. Bernard, Etoile de Lyon, and M. E. A. Carrière (Japanese); Aurora and Souvenir de Londres (singles); Bombardier (decorative); Lune Fleuri (Pompon).

From Mr. R. Owen: Rose Owen and Lily Owen (singles); Thos. Stevenson (Japanese); Mrs. Judge Benedict (Anemone); Lune Fleuri (Pompon).

From Mr. C. Molyneux: Mrs. F. Jameson, Mons. Bernard, and Etoile de Lyon (Japanese); Admiral Symonds, Effie, and Souvenir de Londres (singles); Violet Tomlin and Miss M. A. Haggas (incurved); James Western (Japanese Anemone).

From Messrs. W. Clibran & Sons: Annie Clibran, L'Automne, and Thomas Stevenson (Japanese).

From Mr. R. F. Jameson: Stansted White and Mrs. F. Jameson (Japanese).

From Mr. T. S. Ware: Mrs. Alpheus Hardy (Japanese).

From Mr. G. Stevens: Violet Tomlin (incurved), Alice Stevens (Pompon).

NATIONAL CHRYSANTHEMUM.

October 30.—A meeting of this body took place at Anderton's Hotel, Fleet Street, on the above date. E. Saunderson, Esq., in the chair, and was largely attended by members. The minutes of the last meeting having been read, the Hon. Secretary brought up an *interim* report from the sub-committee appointed to devise a programme for carrying out the arrangements for the celebration of the Centenary of the Chrysanthemum in 1890, who recommended that the Society should hold a four days' display at the Royal Aquarium, in November, 1890; two of the days to be a competitive exhibition as usual, and two a decorative display; also that the sum of £200 be allotted for the purpose. The Hon. Secretary stated that the Directors of the Royal Aquarium would acquiesce in this arrangement. The report was unanimously adopted. It was resolved that on the occasion of the great show on November 11, the Hon. Secretary be empowered to defray a portion of the cost of cartage incurred in conveying plants shown in the specimen plant classes to the exhibition, as far as the funds would admit, and on the understanding that the sum given in any case should not exceed one-half of the cost. Five new members were elected. The Hon. Secretary reported a brisk sale of the Society's Catalogue; also that the committee of the ancient Society of York Florists had kindly invited the judges and others going to the Hull show to call at York on their way down, and see the exhibition there on the 21st, and join them at luncheon. To do this it will be necessary to leave King's Cross at 10.35 A.M.

The Hon. Secretary was instructed to convey the thanks of the Society to that of York for their invitation. Mr. Holmes stated that he had been authorised by the directors of the Royal Aquarium to carry out a series of monthly exhibitions at Westminster, and among them would be one for fruit, vegetables, &c.; and he suggested that the Society should offer prizes for October Chrysanthemums. This was agreed to, the sum to be set apart for the purpose to be named when the schedules of prizes are arranged.

The Hon. Secretary reported that he was in communication with Lord Brooke, M.P., the President of the Society, with a view of his presiding at the annual dinner; and, after some discussion, it was agreed that the arrangements of the dinner should be left to Mr. Holmes, on the understanding it takes place in December.

SCOTTISH HORTICULTURAL ASSOCIATION.

The ordinary monthly meeting of this Association was held on the 5th inst., in 5, St. Andrew Square, Edinburgh, Mr. Alex. Milne, Vice-President, in the chair. Mr. James Whitton, The Gardens, Glamis Castle, read a paper on "The Formation of Fruit Tree Borders," which we intend to give in an early issue.

Exhibits on the table comprised a stand of twelve handsome blooms of Chrysanthemums, from Mr. Grossart, Oswald House; an interesting reversion of Chrysanthemum Wm. Robinson to its parent, Bouquet Faite (?), and a much-admired bloom of C. Avalanche, from Mr. McMillan, Trinity Cottage; a handsome new seedling kidney Potato, named Scour Lapich, from Mr. A. Macintosh, Erchless Gardens, Inverness, recommended by the sender for mid-season crop, an opinion on the merits of which was withheld by the jurors till Mr. Dunn, who undertook to test its quality, should report thereon.

There were also a few very superior samples of Apples and Pears from Sir Archibald Dundas, Duffus House, Morayshire, including two splendid fruit of Grosse Calabasse Pear, the largest of which weighed 1 lb. 3 oz.; a handsome Duchess Pear, and two fruits of the Sinclair Pear, the origin of which is obscure, but which, resembling and equalling Beurré Sterckmanns in form and quality, yet earlier by a month in its period of use, it is, as pointed out by Mr. Dunn, valuable. The Apples of the exhibit were La Fameuse and Scarlet Golden Pippin, each very fine samples of their kind in size and colour. All these fruits were from the open air.

Mr. Dunn announced that he had received an intimation since the last meeting, that the Government of Nova Scotia had kindly resolved to send a collection of Apples to grace the forthcoming International Chrysanthemum Show. A vote of thanks to the chairman brought the meeting to a close.

The subject of the paper to be read at next meeting is "Reminiscences of Continental Nurseries," by Mr. James Wilson, jun., St. Andrews.

GOSPORT CHRYSANTHEMUM.

The season of the Chrysanthemum commenced on Thursday, October 31, at Gosport. This, the second show held in the Thorngate Hall, brought a capital lot of exhibits together, and the weather on the occasion being fine, the financial part of the affair will have been solacing to the Society. Cut blooms were excellent. Mr. A. Abrahams, gr. to T. H. Wilson, Esq., Hazelholt, Bishop's Waltham, won the 1st prize in the class for twenty-four. Mr. Gale, gr. to G. Cooke, Esq., Gosport, won the highest prize for eighteen Japanese. Mr. Gale was 1st, for eighteen incurved varieties; and Mr. F. Limburn, Gosport, was 2nd. Mr. Gale took 1st honours for twelve Japanese Anemone blooms.

COLONIAL NOTES.

THE CAPE.

Prof. Seeley, who has just returned from a scientific mission in that colony, urges the extension of the culture of Tobacco, the increased export of fruit, the necessity of taking measures to combat the drought, and for conserving and replacing the forests. The Professor pointed out, in a lecture at Cape Town, that by the denudation of the land of all its timber, the colonists are removing from the land that which furnishes the very life-blood of agriculture, namely, the water.

VEGETABLES.

BEET-ROOT.

I wish to call attention to a variety of vegetable, which, in this district is, I believe, but little known, although those who were fortunate enough to see the collections of Beet sent to the Royal Horticultural Conference at Chiswick, will have had an opportunity of noting several good varieties there.

Messrs. J. Veitch & Sons, and Messrs. Harrison & Sons, showed on that occasion the kind called Cheltenham Green Top, and one or two single dishes of the same came from private growers. This is a valuable variety of Beet, and scarcely any other is grown in the market gardens around Cheltenham. Those who have seen the good vegetables grown in that district, will come to the conclusion that it must be a good variety to have been cultivated in such large quantities. It is a moderate sized root, with a smallish top, and green leafed, as its name implies, and when boiled of a good colour. I prefer its colour to that of any others which I have grown. It is neither too coarse nor too small, as is the case with that good old variety Dell's crimson. Having the Cheltenham for several years, I can speak with confidence as to its good qualities. I should have grown it in larger quantities, but the seed was rather difficult to obtain. I believe it will, now that it is better known, be more largely grown. I may add, that I believe the Conference will do much good in years to come, by bringing into notice varieties of vegetables grown in different localities, which are superior to some others that are more widely known. I should like to have seen more kinds shown at the Conference from other places than were shown. The Northern growers did well; but the West of England was but poorly represented, considering how many good gardens there are in that part of the country. *G. Wythes, Syon House.*

LAW NOTES.

A SPIRÆA DISPUTE.

The plants sent out as Spiræa palmata elegans, which was lately the subject of a law suit, is not really palmata at all, but a worthless variety of venusta, and is about as miserable a thing as imagination can picture. Whoever has the effrontery wilfully to endeavour to palm off such rubbish under cover of a name so popular, deserves a far severer punishment than he is likely to get, as the season being lost, the damage to the unwary purchaser is irreparable. No doubt thousands of people are deceived in this way by a false name. *Charles Noble, Bagshot.*

[If the plant in question be what was sent out as palmata elegans about 1878, it is certainly not true palmata. A note on this plant will be found in the *Gard. Chron.* for 1878, p. 240, where an attempt was made to assign it to its origin. It was stated, originally, to be a hybrid between S. palmata and S. (Hoteia) japonica, but it bears no trace of any such origin. At the time we were disposed to refer it to S. digitata, but we also stated that those who had S. venusta need not trouble themselves to grow palmata elegans, for, as an ornamental plant, it is greatly inferior to it. The S. venusta of gardens is the same as S. lobata of Murray.

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending November 4.	Temperature. Accumulated. Above 42° for the Week.	Below 42° for the Week.	Above 42° difference from Mean since Jan. 1, 1889.	Below 42° difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (−) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 +	28	10	+ 163	+ 17	2 +	205	35.2	8	23
2	1 +	29	13	− 32	+ 12	2 +	173	23.8	15	29
3	2 +	34	3	− 31	− 11	2 −	160	22.2	25	27
4	1 +	40	3	− 45	+ 107	2 −	163	23.8	41	31
5	2 +	38	4	− 48	+ 58	2 −	154	24.7	32	29
6	2 +	50	0	+ 8	+ 60	3 +	154	23.5	34	31
7	2 +	33	4	+ 10	− 29	3 +	176	34.9	18	31
8	2 +	40	0	+ 9	− 17	1 +	165	27.7	19	30
9	1 +	48	0	− 122	+ 86	4 +	167	30.8	31	36
10	1 +	35	5	+ 28	− 52	6 +	197	33.6	22	26
11	0 av.	40	3	− 35	− 7	2 +	176	31.5	22	33
12	1 +	71	0	+ 82	− 16	4 +	175	25.4	36	41

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending November 4, is furnished from the Meteorological Office:—

"The *weather* has been in a changeable and unsettled condition very generally, with frequent falls of rain. Over the greater part of England, however, several intervals of bright sunshine have been experienced.

"The *temperature* has been from 1° to 2° above the mean in nearly all districts. The highest of the maxima were recorded at most stations on October 30, where they varied from 54° in 'Scotland, N.,' and 55° in 'Ireland, N.,' to 59° over eastern and southern England, and the 'Channel Islands.' The lowest of the minima, which were registered on rather irregular dates, ranged from 27° in 'England, S.W.' (at Llandovery), and 29° in 'Scotland, E.' and 'Ireland, S.,' to 37° in 'England, S.,' 39° in 'England, N.W.,' and to 47° in the 'Channel Islands.'

"The *rainfall* has been a little less than the mean over the central, eastern, and north-eastern parts of England, but more in all other places.

"*Bright sunshine* has been more prevalent than it was last week over England; but in Ireland and most parts of Scotland a decided decrease is shown. The percentage of the possible amount of duration ranged from 8 in 'Scotland, N.,' to 22 over Ireland, 34 in 'England, S.,' and 41 in 'England, E.' In the 'Channel Islands' the percentage was 36."

VARIORUM.

Attar of Roses.—It is stated that the crop in Bulgaria this season has been of very good quality, and the quantity is said to be about 15 per cent. in excess of last season's yield. The price of what are considered the leading brands has not yet been fixed, but it is considered that the quotations will be fully 1*s.* per ounce lower than last year. In connection with this subject, the following extract from a German paper will be of some interest. A correspondent says:—"I may perhaps be allowed in the general interest which has sprung up in the gardening world towards the obtaining of Rose-oil, to tell the readers of this paper of an observation which I made in Russia. A lady, who had lived some time in Bulgaria, attempted for several years here in Moscow to obtain from the petals of any sort of Roses—Teas, R. centifolia, R. gallica, R. rugosa, fl.-pl., &c.—a similar product to that of the Bulgarian Rose-oil. From the experiments it was proved that for obtaining the desired perfume R. rugosa, fl.-pl., called here 'Empress of the North,' is the most appropriate, and it is now yearly used for that purpose. It would be desirable to make some experiments with this variety also in Germany, and the more so as R. rugosa, fl.-pl., is pretty well distributed, and exceedingly hardy. Once it withstood here [Moscow] a temperature of 39° R. without any covering. It flowers very abundantly, and is easily propagated from its innumerable suckers."

The Pleasures of a Deer Forest.—A correspondent of an English society paper enumerates the pleasures of being the tenant of a Highland deer forest. He explains that the place costs him £10,000 a-year, in addition to no end of small sums, of which he grew tired of noting, and the pleasures which he obtained in return for this outlay were of the following character:—"For a couple of hours at a time I have walked with the waters of a running stream well over my boots. A suit of clothes has been done for in a day's wear. Twice or thrice I have sunk up to my chest in a moss. Once I fell over a precipice. Once when crossing a loch I fell overboard, and was not fished out till I was nearly drowned. On another occasion I was fired at by one of my own gillies, who said he mistook me for a 'beastie,' of what kind I do not know, but I fancy I had rather a narrow escape. *Per contra*, I have on five occasions brought down a good stag." *North British Agriculturist.*

Cryptomeria japonica.—On the road from Tôkio to Kofu, about 750 metres above sea-level I found in the autumn of 1874, on the right of the road, a Cryptomeria, which at 1½ metre high had a circumference of 9·41 metres. Specimens of from 6 to 7 metres circumference are frequent in Nikko, and other temple groves. They reach a height of 30 to 45 metres. In 1565 the missionary Almeyda visited the temple of Kasuga, near Nara. The way led through an avenue of Cryptomerias (Sugi) and Pines, "qui faisoient une fort belle symétrie, et dont les têtes se joignoient tellement que le soleil n'y pouvait percer." Single Cedars (Cryptomerias) measured "cinq brasses de circonference," or 8·12 metres according to modern measurement. He found the roof of the temple resting on ninety columns of Cryptomeria trunks, each of which measured 6 metres in circumference.* *J. J. Rein, in The Industries of Japan.*

Timber, timber, everywhere,
Whichever way we turn;
Firewood, firewood, lots of it,
But divil a bit will burn.
From "A Ramble in British Colombia," by J. A. Lees and W. J. Clutterbuck.

Markets.

COVENT GARDEN, November 7.

Market quiet. Kent Cobs very short, with a steady rise. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve ...	1 6–	7 0	Peaches, per doz. ...	4 0–	8 0
— Nova Scotia, brl.	8 0–	30 0	Pine-apples, Eng., lb.	1 6–	3 0
Cobs, per 100 lb. ...	140 0–	...	— St. Michael, each	2 0–	6 0
Grapes, per lb. ...	0 6–	2 6	Plums, ½-sieve ...	2 6–	5 0
Lemons, per case ...	21 0–	45 0			

Vegetables.—Average Retail Prices.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb. ...	0 9–	...	Mustard and Cress, punnet ...	0 4–	...
Beet, red, per dozen	1 0–	2 0	Onions, per bunch ...	0 5–	...
Carrots, per bunch ...	0 6–	...	Parsley, per bunch ...	0 4–	...
Cauliflowers, each ...	0 3–	...	Shallots, per lb. ...	0 6–	...
Celery, per bundle ...	1 6–	2 0	Spinach, per bushel ...	2 0–	...
Cucumbers, each ...	0 6–	0 9	Sprouts, per lb. ...	0 4–	...
Endive, per dozen ...	1 6–	...	Tomatos, per lb. ...	0 9–	...
Herbs, per bunch ...	0 4–	...	Turnips, per bunch, new	0 5–	...
Leeks, per bunch ...	0 3–	...			
Lettuce, per dozen ...	1 6–	...			
Mushrooms, punnet	1 6–	...			

Potato Market still quiet and no special demand for anything except the very best samples. Magnums and Imperators: Blacklands, 45*s.* to 55*s.* per ton; Lincolns, 50*s.* to 65*s.*; Yorks, 65*s.* to 80*s.*; and Kents, 70*s.* to 90*s.* *J. B. Thomas.*

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0–	18 0	Evergreens, in var., per dozen	6 0–	24 0
Aspidistria, doz. ...	18 0–	42 0	Ferns, in var., doz.	4 0–	18 0
— speci. plants, each	7 6–	10 6	Ficus elastica, each	1 6–	7 0
Asters, per dozen ...	4 0–	8 0	Foliage plants, various, each	2 0–	10 0
Begonias, dozen ...	4 0–	12 0	Hydrangea, per doz.	9 0–	18 0
Chrysanth., dozen ...	6 0–	15 0	Marguerites, doz. ...	6 0–	12 0
Cyperus, per dozen .	4 0–	12 0	Palms in var., each	2 6–	21 0
Dracæna terminalis, per dozen	30 0–	60 0	Pelargoniums, scarlet, per dozen ...	4 0–	6 0
— viridis, per doz.	12 0–	24 0	Solanums, per dozen	6 0–	12 0
Ericas, various, doz.	8 0–	18 0			
Euonymus, in var., per dozen	6 0–	18 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun. ...	2 0–	4 0	Maiden Hair Fern, 12 bun.	4 0–	9 0
Asters, English, bun.	4 0–	8 0	Mignonette, 12 bun.	2 0–	4 0
Bouvardias, per bun.	0 6–	0 9	Pelargoniums, 12 spr.	0 9–	1 6
Calla æthiopica, 12 bl.	3 0–	6 0	— scarlet, 12 spr....	0 4–	0 6
Camellias, 12 blooms	2 0–	4 0	Primulas, double, 12 sprays	1 0–	1 6
Carnations, 12 blms.	1 0–	2 0	Roses, Tea, per doz.	1 0–	3 0
Chrysanth., 12 bun.	3 0–	9 0	— coloured, dozen.	2 0–	4 0
Chrysanth., 12 blms.	0 6–	3 0	— red, per dozen ...	1 0–	2 0
Dahlias, 12 bun. ...	2 0–	4 0	— Safrano, dozen...	0 6–	1 0
Eucharis, per dozen	3 0–	4 0	Stephanotis, 12 spr.	3 0–	6 0
Gardenias, 12 blooms	2 0–	4 0	Tuberoses, 12 blms....	0 6–	1 0
Gladioli, 12 bun. ...	6 0–	12 0	Violets, 12 bun. ...	1 3–	2 0
— 12 sprays ...	1 0–	1 6	— French, bunch ...	1 6–	2 6
Heliotropes, 12 spr.	0 3–	0 6	— Parma, 12-bun...	3 0–	4 0
Lilac, white, Fr., bun.	6 0–	7 0			
Lilium, var., 12 bl....	2 0–	6 0			
Marguerites, 12 bun.	3 0–	6 0			

Orchid-bloom in variety.

* John Booth, of Klein Flottbeck, near Altona, mentions in his interesting report of the Forestry Exhibition in Edinburgh, 1884, that in the Japanese reports concerning the province of Kiushiu, it was stated that there were Cryptomeria groves in which single trees had a diameter of 27 feet. I should have at once substituted circumference for diameter had not the farther statement been made that they (Morimasa Sakei and his companions), to the number of twelve, once passed the night in a hollow trunk.

Seeds.

London: *Nov.* 6.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, write that there were but few buyers on to-day's seed market, with a small trade doing. Clover seeds of all kinds are this season unprecedentedly cheap, crops everywhere being abundant and of good quality. Owing to the unfavourable weather for thrashing, English offerings have, as yet, been on a limited scale. Lucerne this year is comparatively dear. Rye-grasses are neglected. There is no important change in bird-seeds. In Blue Peas the tendency is still upwards. Mustard and Rape seed keep firm.

Corn.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended November 2:—Wheat, 30*s.* 3*d.*; Barley, 31*s.* 3*d.*; Oats, 16*s.* 8*d.* For the corresponding period in 1888:—Wheat, 32*s.* 3*d.*; Barley, 28*s.* 10*d.*; Oats, 16*s.* 5*d.*

Fruits and Vegetables.

Spitalfields: *Nov.* 6.—English Apples, 3*s.* to 6*s.* 6*d.* per bushel; Pears, 1*s.* 6*d.* to 4*s.* per half-sieve; English Tomatos, 4*s.* to 5*s.* per 12 lb.; Foreign Tomatos, 9*d.* to 2*s.* per box; Cabbages, 1*s.* to 1*s.* 6*d.* per tally; Savoys, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Cauliflowers, 3*s.* to 6*s.* do.; Brussels Sprouts, 1*s.* 3*d.* to 1*s.* 6*d.* per half-sieve; Spinach, 6*d.* to 9*d.* per bushel; Greens, 1*s.* to 1*s.* 3*d.* per dozen bunches; Turnips, 1*s.* 3*d.* to 1*s.* 9*d.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; Parsley, 1*s.* 6*d.* to 2*s.* do.; Horseradish, 1*s.* to 1*s.* 4*d.* per bundle; Celery, 4*d.* to 8*d.* do.; Parsnips, 4*d.* to 8*d.* per score; Cos Lettuce, 6*d.* to 8*d.* do.; Leeks, 1*s.* 6*d.* to 2*s.* per dozen; Mustard and Cress, 1*s.* to 2*s.* per dozen baskets; Endive, 1*s.* to 1*s.* 6*d.* per dozen; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Beetroots, 4*d.* to 6*d.* do.; Carrots, 20*s.* to 35*s.* per ton; English Onions, 6*s.* 6*d.* to 7*s.* per cwt.; Belgian Onions, 5*s.* to 5*s.* 3*d.* per bag of 110 lb.; Dutch Onions, 5*s.* to 5*s.* 6*d.* do.; Spanish Onions, 5*s.* to 6*s.* per case.

Stratford: *Nov.* 5.—An excellent trade was done at this market during the past week at the undermentioned quotations:—Cabbages, 1*s.* 6*d.* to 3*s.* per tally; Savoys, 3*s.* to 4*s.* do.; Cauliflowers, 4*s.* to 4*s.* 6*d.* do.; Turnips, 30*s.* to 40*s.* per ton; Carrots (household), 34*s.* to 38*s.* do.; do. (cattle feeding), 25*s.* to 30*s.* do.; Mangels, 14*s.* to 17*s.* do.; Swedes, 15*s.* to 20*s.* do.; Onions, English, 133*s.* to 140*s.* do.; do. Dutch, 5*s.* 6*d.* to 6*s.* per bag; Apples, English, 2*s.* 6*d.* to 5*s.* per bushel; Pears, 4*s.* 6*d.* to 6*s.* do.; Celery, 6*d.* to 1*s.* per roll.

Potatos.

Borough and Spitalfields: *Nov.* 5. — Very little change in the trade, best samples meeting a fairly steady sale, and all other sorts being dull. Regents, 55*s.* to 75*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 45*s.* to 85*s.*; Imperators, 45*s.* to 70*s.* per ton.

Spitalfields: *Nov.* 6.—Quotations: Magnums, 45*s.* to 60*s.*; Regents, 55*s.* to 70*s.*; Champions, 50*s.* to 65*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 50*s.* to 70*s.*; Early Rose, 50*s.* to 55*s.* per ton.

Stratford: *Nov.* 5. — Quotations: Magnums, light, 58*s.* to 70*s.*; do., dark, 40*s.* to 60*s.*; Hebrons, 50*s.* to 70*s.*; Imperators, 45*s.* to 60*s.* per ton.

Hay.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime Clover (1887), 115*s.* to 126*s.*; new, 80*s.* to 98*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 100*s.*; inferior, 20*s.* to 50*s.* Straw, 20*s.* to 40*s.* per load.

Notices to Correspondents.

Intelligent Readers, *do* please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and not to the Editor. All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

☞ Correspondents sending plants or fruits so be named, or asking questions demanding time and research for their solution, must not expect in all cases to obtain an answer to their enquiries in the current week.

Anthracite Coal: *S. S.* Good for horticultural purposes. It requires a good draught, and not to be much poked about. It gives off great heat, burns slowly, and has the great advantage of making but little smoke, thus rendering it a good fuel for tubular and other kinds of boilers liable to foul.

Books: *F. L. Fruit Farming for Profit*, by G. Bunyard. This book is out of print, but it may yet be met with at second-hand book shops. *Hints on Vegetable and Fruit Farming*, by C. Whitehead, is somewhat similar but smaller in size. It was published by the Royal Agricultural Society of England, 12, Hanover Square, London. Price retail 1*s.*

Calceolarias: *G. P.* Cuttings of the half-shrubby kinds, as amplexicaulis, multiflora, &c., may be put into sandy loam in frames or hand-glasses. The cuttings should be put in 3 inches apart, so as to admit of a fair amount of growth without causing crowding. Some of these hard wooded kinds—as, for example, Prince of Orange, Sultan, Kentish Beauty, and salvifolia—make the best display if kept for one year in pots before employing them in the beds. Cuttings may be put in now into pots of sandy loam, with a surfacing of sand, and stood close together in hand-lights or frames; the former are better. No shade is required, but they should be placed behind a north or east wall. Pot them off in the spring, and do not put them into heat at any time. In very hard weather a little protection is necessary.

Chrysanthemum Insects: *J. S.* The two you name are those figured on p. 537. The upper one is that destructive of the bloom-buds. The other is still more minute, and is even more destructive, burying itself in the centre of the buds.

Chrysanthemum Lore: *G. C.* See our present and next issues for the information required.

French Paper: *Buz.* The *Revue Horticole*, price 1 franc. (Rue Jacob, 26, Paris.)

Fungus: *Barr & Son.* The dense cluster of Agarics from gravel walk is Agaricus (Clitocybe) decastes, Fr. Has been found two or three times in this country, always in very dense tufts. These are much compressed and deformed. *M. C. Cooke.*—*A. B. C.* The fungus on your Palm is Graphiola phœnicis. Too common.—*E. A. P.* The Mushroom you sent was putrid on arrival. If it is like the one you saw in Natal, we hope that one will remain at Natal.

Houses for Odontoglossums: *J. C. E.* Intermediate-house for O. citrosmum, when growing, and when in flower place it in the cool-house. O. Insleayi, O. cordatum, O. maculatum, and O. grande, in the cool-house. Cymbidium Lowi in the East India-house, or at the warmer end of the Cattleya-house.

Names of Fruits: *Letter lost, second lot.* 20 *Apples* (six being all that we undertake to name at one time. Do you really think it is the business of an Editor to name fruits or flowers for you? We look upon it as a matter of courtesy only, and one that we are glad to practise as far as we can, but our good nature should not be abused): 1, 12, Dutch Mignonne; 2, Dutch Codlin; 3, Kerry Pippin; 4, Cellini; 5, Hoary Morning; 7, Warner's King; 8, Scarlet Nonpareil; 11, Mère de Ménage; 13, King of the Pippins; 14, Golden Noble; 16, 18, Northern Greening; 17, London Pippin; 19, 22, Dumelow's Seedling; 21, Lemon Pippin; others not recognised. — *Cutbush & Sons.* Your Apple is not recognised.—*Broomford.* Round Winter Nonsuch. — *Hortus.* Pear Doyenné du Boussoch.—*G. Hillier.* Not recognised.—*Middlesex.* 1, King of the Pippins; 2, Yellow Ingestrie; 3, Blenheim Orange; 4, Beauty of Kent.—*T. E. H.* Belle des Bruxelles.—*J. L. R.* Rosemary Russet.—*Original Subscriber.* Fearn's Pippin.—*F. Almond*

Your Apple is a purely local sort, name not known. —*G. Howes.* 1, Royal Russet; 2, Scarlet Russet; 3, Claygate Pearmain; 4, Mank's Codlin; 5, Hawthornden.—*W. Fry.* 1, Warner's King; 2, Dumelow's Seedling; 3, Mank's Codlin; 4, Duck's-bill; 5, Loddington Seedling; 6, King of the Pippins. —*A. Hesten.* 3, Rhode Island Greening; the others are not recognised.—*J. E. E.* 1, Minshall Crab; 3, Glout Morçeau; 11, Franklin's Golden Pippin; 13, too small to be recognised; 14, Winter Hawthornden; 15, Old Nonpareil.—*E. L. B.* Court pendu Plat.—*F. G.* 2, Holland Pippin; 7, Schoolmaster; 8, Verulam; 9, Beurré Bachelier; 10, 11, Scarlet Nonpareil.—*J. W.* 1, Maréchal de la Cour; 2, Uvedale's St. Germain; 3, Alexandre Lambre; 4, Knight's Monarch; 5, not recognised; 6, Cox's Orange Pippin.—*C. C.* Calebasse grosse.

NAMES OF PLANTS: *Mungo Chapman.* The Rose from Japan is Rosa longifolia; the other plant, Aster novibelgii.—*J. E. J.* 1, Blechnum polypodioides; 2, Asplenium alatum; 3, Asplenium rhizophorum; 4, Aspidium vestitum; 5, Aspidium pungens; 6, send fertile frond; 7, Asplenium appendiculatum.—*C. W. P.* 1, Lastrea glabella; 2, probably Pteris quadriaurata, but no fertile frond; 3, probably Blechnum cartilagineum—only barren frond sent; 4, Lastrea atrovirens; 5, Lastrea Sieboldi.—*C. b.* Carnations we do not name, send the flowers to a specialist; 2, Nephrolepis hirsutula; 3, Pteris longifolia; 4, send specimen again when in flower.—*Camjee.* Catasetum tridentatum, *Bot. Mag.*, t. 2559.

SEED-PODS: *W. C.* The seed-pod is that of some Pæony. We do not find any flower in your package.—*E. P. D.* Seed-pod of a Pæony and berry of Viburnum opulus.

TOMATOS: *S. S.* The plants raised from seed sown in September will fruit in March, with careful attention. Do not over-pot, but keep them in 32's till after the new year comes in. See our Calendar for the Kitchen Garden in issue for November 2. Do not use much manure in the soil, which should be loam of rather retentive nature, made slightly porous by the addition of fine charcoal, sand, and leaf-mould. No stimulating manure will be required until the plants have filled their fruiting-pots—say in February or March—and then only in the shape of top-dressings and waterings. Train to a single stem.

CATALOGUES RECEIVED.

W. P. LAIRD & SINCLAIR, 73, Nethergate, Dundee—Ornamental Trees and Shrubs, Fruit Trees, &c.

BALTET BROTHERS, Pépinière de Croucels, Troyes, France—Trees, Shrubs, Roses, &c.

FRED. BURVENICH, PÈRE, Gentbrugge, Ghent, Belgium—Trees and Shrubs, Vegetable Seeds, &c.

V. LEMOINE & SONS, 134, Rue du Moutet, Nancy, France—Shrubs, New Plants, Gladioli, &c.

COOLING & SONS, Bath, Somerset — Roses, Fruit Trees.

WM. CUTBUSH & SONS, Highgate, London — General Catalogue.

C. PLATZ & SON, Erfurt, Germany — Novelties (Seeds).

ERNEST BENARY, Erfurt, Germany — Vegetable, Flower, Grass, Tree Seeds, &c. (Preliminary List).

FISHER, SON, & SIBRAY, Handsworth, Sheffield—Fruit, Forest, and Ornamental Trees.

DICKSONS (Limited), Chester — Fruit Trees, also Forest and Ornamental Trees.

DICKSONS & Co., 1, Waterloo Place, Edinburgh, N.B. —Forest Trees, Shrubs, &c.

EUG. VERDIER, 37, Rue Clisson, Paris—Roses.

JAMES BACKHOUSE & SON, The Nurseries, York—Roses.

KELWAY & SON, Langport, Somerset—Gladioli.

D. S. THOMSON & SONS, The Nurseries, Wimbledon —Roses, Fruit Trees, &c.

W. SMITH & SON, 18, Market Street, and 1 and 3, Haddon Street, Aberdeen — Trees, Shrubs, Roses, &c.

FRUIT TREE AND SHRUB NURSERY, Zoschen, near Merseburg, Germany—Wholesale List.

COMMUNICATIONS RECEIVED:—F. W. B.—T. W.—C. D.—W. B. H.—C. B. C.—N. E. B.—P. W.—D. T. F.—G. M., Paris.—W. G. S.—Society of Arts.—Institute of Civil Engineers.—Dr. E. Stockholm.—L. P.—Victoria University.—E. L.—The Society of Apothecaries.—W. R.—E. A., Paris.—C. B.—P. S.—Ernest Benary.—Ed. *Worcester Herald.*—J. W.—C. P. & Son.—Sutton & Sons.—T. C.—F. H.—W. S.—N. E. B.—R. A. R.—P. L. S.—R. J. L.—G. H.—E. J.—J. J. W.—H. W. W.—W. A. C.—G. M.—W. J. T.—W. H. A.—W. S.

FERNS — FERNS. — Trade offer. — Great Annual Sale of Surplus Stock cheap; 100,000 to select from, in 20 most saleable sorts; 10*s.* and 12*s.* per 100. Adiantums, Pteris, &c. Adiantum cuneatum and Pteris Mayii, 12*s.* per 100.
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PINUS AUSTRIACA, 3 to 4 feet, 20*s.*; 4 to 5 feet, 28*s.* per doz.
" LARICIO, 4 to 5 feet, 28*s.*; 5 to 6 feet, 36*s.* per dozen.
" SYLVESTRIS (Scotch Fir), 4 to 5 feet, 20*s.*; 5 to 6 feet, 25*s.* per dozen. From nursery rows, 2 to 3 feet, 35*s.*; 3 to 3½ feet, 50*s.* per 1000.
" INSIGNIS, 5 to 7 feet. 30*s.* per dozen.
" CEMBRA, 3 to 4 feet, 15*s.* per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, 12*s.* per dozen.
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THUJOPSIS DOLABRATA, 2 to 3 ft., 18*s.*; 3 to 4 ft., 24*s.* doz.
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Large Evergreens.
LAURELS, Common, colchicum, caucasicum, and rotundifolium, 3 to 4 feet, 12*s.*; 4 to 5 feet, 18*s.*; 5 to 6 feet, 24*s.* per dozen.
" Portugal, 2½ to 3 feet, 24*s.* per dozen.
TREE BOX, green and variegated, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* per dozen.
BERBERIS DARWINII, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* doz.
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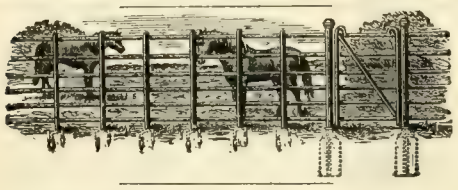
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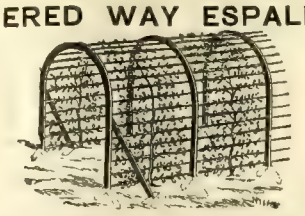
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WANTED, a Man and Wife, without encumbrance, as GARDENER and LAUNDRESS. Good references required. Wages 25*s.* per week, with house, coals, and gas inclusive.—Apply by letter, addressed S. HOLMAN, Cornwall House, Ealing, W.

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WANTED, a MUSHROOM, TOMATO, and CHRYSANTHEMUM GROWER. Every encouragement given to a thoroughly practical man.—State age, references, and wages required to TURNER BROS., Garston, Liverpool. Should like to hear from D. Reeves.

WANTED, a young MAN, used to Potting, Watering, and General Indoor Work, wages 15*s.*; also a good GENERAL NURSERY HAND, one who can Bud, Graft, Train, and do a little Packing, &c., wages 17*s.*—ROBERT GRAHAM, The Newmarket Nursery, Newmarket.

WANTED, a handy young MAN, for Nursery, In and Outdoors; also YOUTH accustomed to Packing. From the country preferred.—Apply, A. B., William Denman, 7, Catherine Street, Covent Garden, London, W.C.

Nursery and Seed Trade.

WANTED, as TRAVELLER, an active, steady, and thoroughly efficient young Man, with a good knowledge of both branches.—Address, stating age, experience, salary expected, with other particulars, TRAVELLER, *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

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SHOPMAN WANTED, in a Retail Seed Establishment (Provincial). Must be intelligent, active, and pushing.—Apply M. O., *Gardeners' Chronicle* Office, 41 Wellington Street, Strand, W.C.

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Seed Trade.

SAMUEL YATES is in WANT of an additional competent COUNTERMAN.—75, Shudehill, Manchester.

WANTED, for a Market Nursery, a steady, industrious MAN, used to Hot-water Fitting, Carpentering, &c.—Apply, with references, by letter only, to MARKET, J. W. Vickers, 5, Nicholas Lane, London, E.C.

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WANTED, a young LADY, London experience, and accustomed to Front Shop; must be a good hand at Bouquets, Wreaths, and Sprays.—W. LEWIS, 24, Triangle, Bournemouth.

GARDENING APPOINTMENTS.

MR. ABRAM SHILTON, of Rangemore Gardens, has been appointed Gardener to ROGER BASS, Esq., Newton House, Chester.

Mr. JAMES GODFREY, until lately Gardener at Ashwicke Hall, Chippenham, has been engaged as Gardener and Orchid Grower to Major-General E. S. BERKELEY, Spetchley House, Bitterne, Southampton.

Mr. JAMES BINNINGTON, late Foreman in the Gardens of H.R.H. the Duchess of ALBANY, Claremont, has been appointed Head Gardener to Lady BATEMAN, Brome Hall, Suffolk.

Mr. E. F. HAZELTON, late Foreman and Clerk at Trentham, has succeeded Mr. ROBERTS as Gardener to A. NICHOLSON, Esq., Highfield Hall, Leek, Staff.

Mr. DAVID HUGHES, for the last three and a-half years Foreman at Roby Hall Gardens, near Liverpool, has been engaged as Head Gardener to EDWARD MASSEY, Esq., Bamford Hall, Rochdale.

Mr. GEO. WARD has been engaged as Head Gardener to J. E. A. GWYNNE, Esq., Folkington Manor, Polegate, Sussex.

WANT PLACES.

Letters addressed "Poste Restante" to initials or to fictitious names are not forwarded, but are at once returned to the writers.

POSTAL ORDERS.—To Advertisers, Subscribers, and Others.—It is very important in remitting by Postal Order that it should be filled in payable at No. 42, DRURY LANE, to W. RICHARDS, as, unless the number of a Postal Order is known, and it has been made payable at a particular office, and to a particular person, it is impossible to prevent any person into whose hands it may fall from negotiating it.

N.B.—The best and safest means of Remitting is by POST-OFFICE MONEY ORDER.

NOTICE TO ADVERTISERS.—In many instances Remittances in Payment of Repeat Advertisements are received without name, address, or anything beyond the postmark on envelope by which to identify the sender; this in all cases causes a very great deal of trouble, and frequently the sender cannot be identified at all.

Advertisers are requested when Remitting to give their Names and Addresses, and also a Reference to the Advertisements which they wish repeated.

Gardeners, Foresters, and Farm Bailiffs.

LITTLE AND BALLANTYNE, The Queen's Nurserymen and Seedsmen, Carlisle, invite correspondence with Landed Proprietors, Agents, and others requiring the services of GARDENERS, FORESTERS, and FARM BAILIFFS. Their extensive business relations throughout the Kingdom enable them to distinguish men of good character and ability, such as they would be glad to recommend.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

Gardeners, Farm-Bailiffs, Foresters, &c.

DICKSONS, Royal Nurseries, Chester, *(Limited)*, are always in a position to RECOMMEND MEN of the *highest* respectability, and *thoroughly practical* at their business. All particulars on application.
Telegraphic and Postal Address—"DICKSONS, CHESTER."

HEAD GARDENERS.—At the present time I can recommend several highly respectable MEN, of known ability and first-class character.—THOS. BUTCHER, Seed Merchant, Croydon.

A RESPECTABLE GARDENER would like to Rent two or three Glass Houses for Tomatos, Grapes, Cucumbers, &c.; or would undertake to Grow for Proprietor.—B., 36, West Street, Grimsbury, Banbury.

PARTNER in a Small Nursery or Market Garden, by a young man with Small Capital. Twelve years' experience.—ROBERTS, 28, Sneyed Street, Tunstall, Staffordshire.

GARDENER (HEAD), where three or more are kept.—Excellent references, thirteen years' experience in large establishments. Five years in last situation; left through death.—J. WARD, 15, Mansfield Road, Nottingham.

GARDENER (HEAD).—Mr. COCKERSOLL, Stoke Rochford Gardens, Grantham, can with confidence recommend a first-class Gardener of twenty years' experience.—For particulars apply as above.

GARDENER (HEAD); age 37, married, one child.—G. A. GOWERS, The Gardens, Stoughton Grange, Leicester, is now open to treat with any Lady or Gentleman requiring a thoroughly practical man with twenty-three years' experience.

GARDENER (HEAD), where several more are kept.—Age 38; thirteen years in present situation. Has a good knowledge of Forcing Fruit, Flowers, and Vegetables; Orchids, Ferns, Kitchen and Flower Gardening; and the general requirements of a Large Establishment.—HORTUS, *West Sussex Gazette* Office, Arundel.

GARDENER (HEAD WORKING); age 38, married, no family.—A GENTLEMAN going abroad would thoroughly recommend; well experienced in all branches.—A. HARYETT, Oakfield, The Avenue, Gipsy Hill.

GARDENER (HEAD WORKING).—Married, no family; twelve years Head at Bray Court. Trustworthy and competent in all branches. First-class character.—J. MOORE, Holyport, Maidenhead.

GARDENER (HEAD WORKING).—No family; sixteen years' Gardener and Manager to the late Lady Needham. Highly recommended by the Executors.—ROBERT CREEDE, Datchet, Bucks.

GARDENER (HEAD WORKING).—Married; thoroughly practical in all branches, particularly Fruit, &c., under Glass. Abstainer.—J. W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

GARDENER (HEAD WORKING); age 29.—Mr. WEBSTER, Kenyon Hall Gardens, Manchester, will be pleased to recommend his Foreman, Isaac Roberts, to any Lady or Gentleman requiring the services of a thoroughly experienced and energetic man.

GARDENER (HEAD WORKING).—Age 33, married, no family; seventeen years' thorough practical experience in all branches of the profession; three years as Head. Highly recommended. Leaving through death.—MUSTOW, Swalcliffe Park, Banbury.

GARDENER (HEAD WORKING), where two or more are kept.—Age 37, unmarried; thoroughly experienced in all branches of Gardening. First-class references as to character and abilities.—J. BUTT, Balderton, Newark, Notts.

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GARDENER (UNDER).—Age 18; four and a half years' good character.—The GARDENER, Langford, Brixton Hill, S.W.

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GARDENER (UNDER), or help Gardener.—Age 20; leaves last place through death. Ten months' personal, and three years' previous character.—J. WILKINSON, Cuddesdon, Wheatley, Oxon.

GARDENER (UNDER), or GROOM and GARDENER.—Age 18; one and a half year's good character from last situation.—J. F., Merton Cottages, Canterbury.

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MANAGER, hardworking, first-class; understands Propagation and Cultivation of all kinds of Indoor Plants and Fruit Forcing. Especially good at Tea Roses, Cyclamen, Cytissus, Bouvardias, Ficus, Tree Carnations, Eucharis, Double Primulas, Ferns, and Bouquet Wreaths. Twenty years' experience. Good references.—FOREMAN, 41, Wellington Street, Strand, W.C.

To Nurserymen.

MANAGER, or GENERAL FOREMAN (Outdoors).—Thoroughly acquainted with the Cultivation and Value of Nursery Stock, Book-keeping and Correspondence, good Salesman; thirty years' experience in large Nurseries; good reference.—Particulars to G. C., 41, Larkfield Road, Richmond, Surrey.

To Nurserymen.

MANAGER, or FOREMAN.—Good Salesman. Highly recommended.—H., Messrs. Winfield & Son, Nurserymen, &c., Gloucester.

To Fruit Growers, &c.

MANAGER.—The Advertiser has very great experience in the Planting and Cultivation of Fruit and Market Garden Crops.—Address, EXPERIENCE, 35, Park Road, West Dulwich.

To Nurserymen.

GROUND FOREMAN, or MANAGER.—Advertiser seeks an appointment as above. Thorough practical knowledge of business. Highest references as to ability and character.—W. R. ELLIOT, King's Acre, Hereford.

To Head Gardeners.

FOREMAN, in a small establishment; age 23.—Advertiser can confidently recommend a man as above. Well versed in Vines, Stove and Greenhouse Plants, Tomatos, Cucumbers, &c.—REX, 41, Wellington Street, Strand, W.C.

FOREMAN, in the Houses in a good establishment.—Age 27; thirteen years' good experience in Fruits, Stove, Greenhouse Plants, especially Chrysanthemums, highly recommended.—E. ASHWELL, Brookman's Park, Hatfield, Herts.

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FOREMAN (WORKING).—Age 26; Grapes, Tomatos, Cucumbers, Cut Flowers, &c., for Market. Good references.—H. VOKES, 8, Beckett's Road, Tarring, Worthing.

PROPAGATOR and GROWER for Market.—Age 30; sixteen years' experience in the Cut Flower and Plant Trade.—P., Propagator, G. Mount's Rose and Exotic Nurseries, St. Dunstan's, Canterbury, Kent.

JOURNEYMAN (FIRST).—Mr. HUGHES, Eydon Hall Gardens, will be pleased to recommend a steady, persevering young man as above.

JOURNEYMAN, in the Houses, or Inside and Out.—Age 20; energetic and active. Good references from late employers.—G. MARLOW, Manor House Gardens, Richmond.

JOURNEYMAN.—Mr. WARD, Longford Castle, Salisbury, can recommend a strong and active young man as above, who has just finished an apprenticeship of two years in the Houses.

JOURNEYMAN, in the Houses.—Age 20; five years' experience. Four and a half years' good character from large establishment in all departments.—C. HOWES, 10, New Road, Barnet, Herts.

JOURNEYMAN, where Fruit, Flowers, and Plants, including Stove, Bulbs, and Orchids are Grown for Market. A practical place more in request than wages. Market or Private. Premium not objected to.—H. J., Abbis, Post-office, Streatham Common, S.W.

IMPROVER; age 19.—J. REID, Gaines Gardens, Worcester, can with confidence recommend a strong Lad. Two and a half years' experience Indoors and Out.

TO NURSERYMEN and GENTLEMEN.—Good Rose Grower, Indoor and Out. Also good Knifeman. Age 22.—J. JENNINGS, 2, Barrack Road, Hounslow Heath, Middlesex.

TO GENTLEMEN and NURSERYMEN.—Wanted, by a Youth (age 16), a situation in a Garden or Nursery. Two years in present place—principally Out-doors.—GEORGE THOMAS, Lynhales Gardens, Kington, Herefordshire.

To Nurserymen, Seedsmen, and Florists.

MANAGER, TRAVELLER, or HEAD SHOPMAN.—Age 30; sixteen years' experience in Seeds, Bulbs, &c.; six years in Landscape Gardening and Florist. Good Buyer, &c.—Full particulars on application to CYCAS, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TRAVELLER, SALESMAN, or GROWER, for Market or Private.—Thirty years' thorough practical experience; fourteen years' Covent Garden Flower Market experience.—M. P., Bath Road, Harlington, Middlesex.

SHOPMAN, TRAVELLER, or NURSERY FOREMAN.—Thoroughly practical; life experience in all branches. Life abstainer. Undeniable references.—H. A., Lutley & Brunt, 92, Paris Street, Exeter.

FLORIST or SEEDSMAN.—Recently disengaged. Several years' experience Buying and Selling. Thorough general knowledge of the Trade. Moderate salary.—BETA, Williams, Newsagent, Herne Hill Station, S.E.

SEED TRADE.—Advertiser is open for an engagement. Thorough knowledge of the Trade, both Wholesale and Retail. Eighteen years' experience. Business changing hands cause of leaving. Married, age 34.—X. Y. Z., *Gardeners' Chronicle* Office, 41, Wellington St., Strand, W.C.

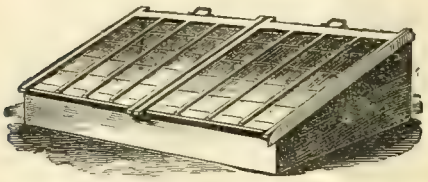
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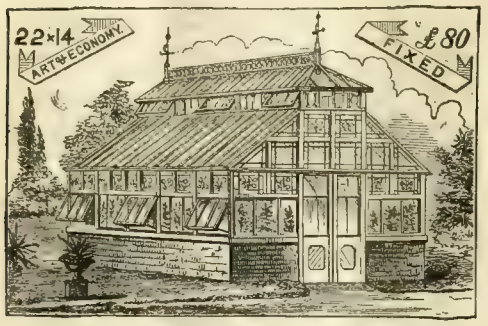
	Length.	Width.		
1 Light Frame,	4 ft.	by 6 ft.	Cash Prices, Carriage Paid.	£2 0 0
2 „ „	8 „	by 6 „		3 0 0
3 „ „	12 „	by 6 „		4 5 0
4 „ „	16 „	by 6 „		5 10 0
5 „ „	20 „	by 6 „		6 15 0
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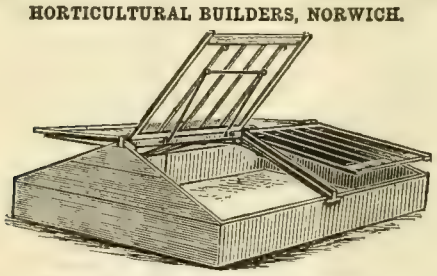
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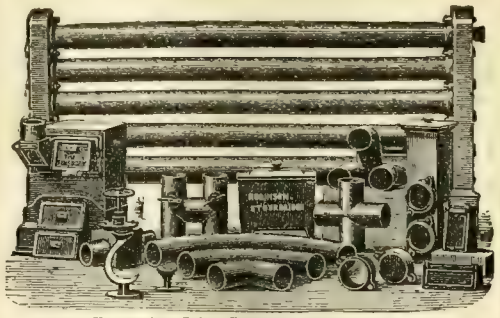
The illustration shows a Frame 8 feet by 6 feet. Made of good redwood deal, sides and ends 1½ inch thick, painted three coats of oil colour; lights 2 inches thick, glazed with 21-oz. sheet glass. Height of sides, 14 inches. Height at ridge, 32 inches. The lights are hinged and fitted with "Registered" Set-opes, which safely support them for ventilation, &c., and the hinges are so formed that the lights can be turned quite over, or taken off at pleasure.

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4 „ „	16 feet	by 6 feet ...		7 7 6
5 „ „	20 feet	by 6 feet ...		8 17 6
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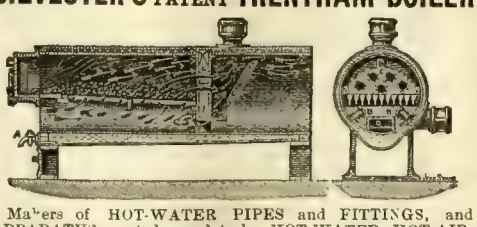
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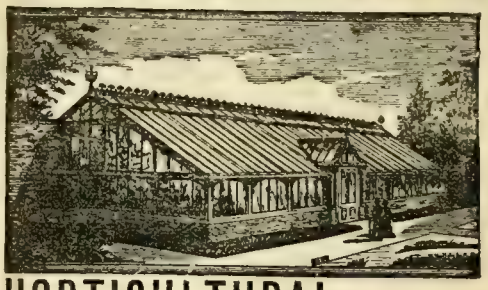
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, November 9, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2551.

No. 151.—Vol. VI. {Third Series.} SATURDAY, NOVEMBER 16, 1889. {Regt. as a Newspaper. / With Supplement.} {PRICE 3d. / Post-Free, 3½d.}

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
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Maresfield, near Uckfield, Sussex

GREAT CLEARANCE SALE of the first portion of the GENERAL NURSERY STOCK.

MESSRS. PROTHEROE AND MORRIS are instructed by Louisa Lady Shelley, of Maresfield Park, to SELL by AUCTION, on the Premises, the Piltdown Nursery, Maresfield, 2½ miles from Uckfield Station, L.B. & S.C.R., on TUESDAY and WEDNESDAY NEXT, November 19 and 20, at 12 o'Clock each day, the first and principal portion of valuable NURSERY STOCK, consisting of 3000 choice Border Shrubs, including many handsome specimen Coniferæ and Evergreens, 6000 Austrian Pines, 80,000 Spanish Chestnuts, Common Laurels, Green and Variegated Hollies, 1000 named Rhododendrons, 1000 Araucaria imbricata, 3000 Standard and Dwarf Roses, including a large number of Teas, 1000 bushy Golden Euonymus, 1500 Standard and Pyramidal Apples, good clean-grown trees; Herbaceous and other Plants.

May be viewed one week prior to the Sale. Catalogues had on the Premises; of M. SANDFORD, Esq., the Estate Office, Maresfield Park, near Uckfield; and of the Auctioneers and Estate Agents, 67 and 68, Cheapside, E.C.

N.B.—The well-known NURSERY is TO BE LET on very advantageous terms. Full particulars of the Auctioneers.

Wednesday Next.

200 AZALEA INDICA, PALMS, in variety; DRACÆNAS, and other Plants from Belgium; GREENHOUSE PLANTS, in variety; 100 lots of DAFFODILS, also first-class HYACINTHS, TULIPS, CROCUS, and other DUTCH FLOWER ROOTS, SPIRÆAS, LILIES, and miscellaneous BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 20, at half-past 11 o'Clock, without reserve.

On view morning of Sale, and Catalogues had.

Friday Next.

CATTLEYA MENDELII and C. MOSSIÆ.

For Sale, by order of Mr. G. T. White, without reserve.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 22, at half-past 12 o'Clock, without reserve, a further portion of his well-known stock of CATTLEYA MENDELII and C. MOSSIÆ, in sheath, and mostly unflowered, together with CYPRIPEDIUMS, and a quantity of COOL HOUSE ORCHIDS.

The Sale will also include about 200 lots of ESTABLISHED ORCHIDS, from various owners.

On view morning of Sale, and Catalogues had.

Penge, S.E.

Within a short distance of Penge and Kent House Stations, L. C. & D. Railway.

UNRESERVED SALE of the First Portion of general NURSERY STOCK, the Land being required for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Penge Nursery, Penge, S.E., on MONDAY and TUESDAY, November 25 and 26, at 12 o'Clock each day precisely, by order of Mr. E. B. Haynes, the First Portion of the well-grown NURSERY STOCK, comprising 5000 Lombardy Poplars, 10,000 Aucubas, 3000 Laurels, 6000 Privet, 3000 Box, 2000 Ivies in pots, 2000 Climbers, 1000 Limes, 30,000 Evergreens in variety, 500 Scarlet, Yellow, and Horse Chestnuts, 100 fine Weeping Ash, 1000 yards of Dutch Box Edging, 5000 Fruit Trees, Chrysanthemums, &c.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Reading.

2¼ miles from the Reading railway station.

IMPORTANT SALE of FRUIT TREES and ROSES, by order of Mr. Cooper, to clear the ground.

To Gentlemen, Market Gardeners and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Tilbert Plantation, Bath Road, Reading, adjoining the "Horn and Castle" Inn, on TUESDAY, November 26, at 12 o'Clock precisely, 700 APPLES of sorts, 750 PEARS of sorts, 50 trained and Bush PEACHES, 800 DAMSONS, 300 WALNUTS, 1000 NUTS of sorts, 1000 Standard and Dwarf ROSES, 200 LILACS, 500 CHESTNUTS, 10 to 16 ft., and a quantity of LIMES, SYCAMORE, ASH, SYRINGAS, &c.

May now be viewed. Catalogues had on the premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Orchids in Flower.—Special Sale.

CYPRIPEDIUMS.

MESSRS. PROTHEROE AND MORRIS desire to announce that their NEXT SPECIAL SALE of ORCHIDS in FLOWER will take place on FRIDAY, November 29, for which they will be glad to RECEIVE ENTRIES AS EARLY AS POSSIBLE.

The Sale will include a few Special CYPRIPEDIUMS, from a Private Collection, comprising C. PAVONIANUM, C. DELICATULUM, C. FAIRRIEANUM, C. MORGANIÆ, and others.

Auction Rooms and Offices, 67 and 68, Cheapside, London, E.C.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Monday Next. (Sale No. 8040.)

Springfield, Dulwich, near Herne Hill Station.

Entrance to Sale in the Burbage Road.

MR. J. C. STEVENS will SELL by AUCTION, on the Premises as above, on MONDAY NEXT, November 18, at half-past 12 o'Clock precisely, without the least reserve, the Collection of Established ORCHIDS and STOVE and GREENHOUSE PLANTS, formed by the late J. Gregory Crace, Esq.; also a fine lot of ORCHIDS in FLOWER and BUD.

On view the Saturday prior, from 10 till 4, and morning of Sale. Catalogues had on the Premises, and of the Auctioneer, 38, King Street, Covent Garden, W.C.

Wednesday and Saturday Next.

Pyramid and Dwarf-trained FRUIT TREES, comprising choice sorts, named Standard and Dwarf ROSES, BORDER PLANTS in great variety; CONIFERS, SHRUBS, and EVERGREENS, GLADIOLI, LILIUMS, &c.

MR. J. C. STEVENS will include the above in his SALES by AUCTION, of Dutch BULBS, on WEDNESDAY and SATURDAY NEXT, November 20 and 23. Sales commence at half-past 12 o'Clock precisely.

On view mornings of Sale, and Catalogues had.

Thursday Next, November 21.

SPECIAL SALE of DUTCH BULBS, and LILIES from Japan.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 21, at half-past 12 o'Clock precisely, a large Consignment of BULBS from Holland, specially lotted to suit the Trade and Private Buyers, comprising choice named Hyacinths, Tulips, Crocuses, Narcissus, Roman Hyacinths, Roman and Paper-white Narcissus for forcing. Also grand importations from Japan, in splendid condition, comprising 10,000 Lilium auratum, L. auratum varieties, L. speciosum rubrum, and L. album, L. longiflorum, L. Kramierii, &c.

On view morning of Sale, and Catalogues had.

To Nurserymen and Others.

WANTED, near Hammersmith Station, accommodation for HOUSING a few VINES in Pots, and a few SMALLER PLANTS.

C. D., 10, High Holborn, W.C.

WANTED, HOUSE and SHOP suitable for Florist and Seedsman. Rent moderate (provincial town preferred). Particulars to

WM. ASPLAND, 28, Carnac Street, West Dulwich, Surrey.

WANTED, TO RENT, or BUY, within 15 miles of London, about 2 Acres of LAND, for Nursery Purposes, with or without Glass.—Full particulars to B. E., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Parlours, Furnished.

WANTED, TWO large Furnished PARLOURS, with a good-sized Conservatory adjoining, where Grapes might be grown.—Single young man; no Board; very little trouble. Near Hammersmith Station preferred.—Address C. D., 10, High Holborn, W.C.

FOR DISPOSAL, CUT FLOWER GROWING BUSINESS, 50 miles from London, doing a fair trade; 350 feet run of Glass, one-third of an acre of Land. Stock about £150.

M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Edgware Road, N.W.

LEASEHOLD PROPERTY for SALE, of nearly Half an Acre, having a frontage of 86 feet, by a depth of 140 feet, with 9-room Dwelling-house, and 3 large Glasshouses heated. Lease 87 years. Ground-rent, £30. Price £850.

Full particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

London, N.W.

FOR SALE, Capital FLORIST BUSINESS, with 13 Glasshouses and Pits, all heated; Zinc erection of Stable, Coach-houses, and Potting Sheds; six-room Dwelling-House and Conservatory. Lease about 76 years. Ground Rent £54. Price, including Stock, £1500. Open to an offer.

Further particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

To Nurserymen and Florists, London, W.

TO BE SOLD, a first-class NURSERY, within seven miles of Covent Garden, comprising about one acre of Land with eight large Greenhouses thereon, all well stocked; lease sixteen years. Terms moderate. For particulars apply to W. E., 130, Percy Road, Shepherd's Bush.

Florist.

FOR IMMEDIATE DISPOSAL, as a going concern, the Goodwill, Stock, Fixtures, and Plant of a FLORIST and NURSERY BUSINESS, in South London, within 2 miles of Covent Garden. Greenhouses well heated, and about ½ acre Ground. In present hands upwards of nine years. Rent £10 per annum, with stipulations. Price, all at £100.

Apply to LILY, *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Borough High Street.

FOR SALE, a FRUIT, FLOWER, and SEED BUSINESS, in this most important thoroughfare. Commanding Shop, large Basement, Living-room and Bedroom. Lease 20 years to run. Rent £175. Premium for lease, stock, fixtures, improvements, furniture, &c., £350.

Apply to Messrs. FURZE AND ALDRIDGE, Business Agents, 1, Railway Buildings, Norwood Junction.

To Nurserymen, Seedsmen, and Florists.

TO BE SOLD, by Private Treaty, a first-class NURSERY, well stocked; 7 Hothouses, about 2 Acres of Land, and lock-up Shop in Market-place.

For particulars, apply to GRAHAM AND MADELEY, Valuers, Burton-on-Trent.

To Florists and Practical Gardeners.

FOR IMMEDIATE DISPOSAL, SEED and FLORIST'S BUSINESS in Scotland. Apply by letter to FLORIST, 41, Wellington Street, Strand, W.C.

NURSERYMEN and FLORISTS: large fashionable town. Handsome and prominent Conservatory, Gardens, &c. Moderate rental. Price for good stock and four large, well-built and heated houses, £800. Excellent opportunity for practical man desirous of obtaining a high-class business.

Apply personally (or stamp), B. POMFRET, Business Agent, High Street, Tunbridge Wells.

TO LET, a Small, Compact Nursery. Seven Houses, well heated. Low Rent. Stock, £85, or offer; particulars by letter to

A. B., 161, High Road, Lee, London, S.E.

TO BE LET, on Lease, a well-established FLORIST NURSERY, with good Dwelling-house, 8 Rooms, and Cellars; 7 Glasshouses, Pits, &c.; Outbuildings, Stabling, and Orchard. In one of the most thriving manufacturing towns in the Midlands.

Full particulars, apply, J. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Gardeners, &c.

TO LET, a nice compact FRUIT FARM and MARKET GARDEN, consisting of 5 acres, at Sherburn in Elmet, half an hour's ride by Rail to Leeds. Good Dwelling-house, consisting of Dining, Drawing, Breakfast Room, and Kitchen, Bath-room, Pantry, Coal-house, &c., on ground floor; 4 Bed-rooms and Servants-room, Wash-house, Coach-house, 2-stall Stable, Pigstyes, Poultry-houses, Greenhouse, Pits, Frames, large Orchard, scores of Apple, Plum, and Pear Trees; about 1600 Gooseberry and Currant Trees; an acre of Strawberries; nearly an acre of Raspberries in good bearing condition. To a steady respectable person with good references, the proprietor would let at a very reasonable rent. Apply to WILLIAM TAYLOR, Saville House, Princes Square, Harrogate

PROTHEROE AND MORRIS, HORTICULTURAL MARKET GARDEN and ESTATE AUCTIONEERS and VALUERS, 67 and 68, Cheapside, London, E.C., and at Leytonstone, E. Monthly Horticultural Register had on application.

To Farmers, Dairymen, Poultry Keepers, Nurserymen, Florists, Market Gardeners, &c.

MR. BERNARD WILSON, F.R.H.S., F.R.C.S., AGRICULTURAL, HORTICULTURAL and ESTATE AGENT, 25, Wellington Street, Covent Garden, London, W.C. N.B.—Register for Farm Bailiffs, Nursery Foremen, and Gardeners seeking Situations.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

Landscape Gardening.

OUR THOMAS H. MAWSON advises on all classes of Work under the above heading; also Rock Building, General Estate Improvements, Planting, &c.
See *Gardeners' Chronicle*, No. 146, p. 412.
Address, MAWSON BROTHERS, Nurserymen, Windermere.

Southend Local Board.

TENDERS ARE INVITED for the SUPPLY and DELIVERY at Southend of 200 PLANE TREES (large leaved variety), and 200 BLACK ITALIAN POPLAR TREES, each Tree to be 14 feet in height.
Further particulars may be obtained by application to Mr. P. DODD, Surveyor to the Board.
Tenders to be sent in not later than November 19, endorsed "Tender for Trees," and addressed to the Chairman of the Board.
By order of the Board, WILLIAM GREGSON, Clerk.
Southend, Essex.—November 7, 1889.

ANTHONY WATERER invites an inspection from intending Planters to the following, well-grown:—
ABIES DOUGLASII, Colorado variety, 4 to 6 feet.
CEDRUS ATLANTICA, 4 to 6 feet.
" GLAUCA, 3 to 7 feet.
" LEBANI (Cedar of Lebanon), 4 to 8 feet.
CUPRESSUS LAWSONIANA ERECTA VIRIDIS, 4 to 8 feet.
" LUTEA, 4 to 6 feet.
JUNIPERUS CHINENSIS AUREA, 3 to 8 feet.
" VIRGINIANA GLAUCA, 5 to 7 feet.
PICEA CONCOLOR, 2, 3, 4, 5, and 6 feet.
" GRANDIS, 4 to 8 feet.
" LASIOCARPA, 3, 4, 5, 6, to 8 feet.
" MAGNIFICA, 3 to 5 feet.
" PUNGENS GLAUCA, 1½ to 3 feet.
PINUS AUSTRIACA, 3, 4, 5, 6, to 7 feet.
RETINOSPORA PISIFERA AUREA, 3 to 6 feet.
" PLUMOSA AUREA, 6 to 8 feet.
THUIOPSIS BOREALIS, 4 to 6 feet.
" DOLABRATA, 3 to 7 feet.
THUIA LOBBII, 4, 5, 6, and 7 feet.
" OCCIDENTALIS, 4 to 5 feet.
" " LUTEA, 3 to 6 feet.
YEWS, Common, 3, 4, and 5 feet.
" Golden, of all sizes, up to 10 feet.
We have a large quantity of Pyramids, Globes, and Standards, in point of variety and size unequalled.
" Golden Seedlings, 3, 4, 5, 6, and 7 feet.
" Irish, 5 to 10 feet.
" " Golden, 3 to 6 feet.
AUCUBA JAPONICA, 2½ to 4 feet.
BAMBUSA METAKE, fine Clumps, 4 to 7 feet.
BOX, Green and Variegated, 3, 4, 5, up to 8 feet.
HOLLIES, Green, 4, 5, 6, 8, up to 10 feet.
" ALTACLARENSE.
" HODGINS.
" LAURIFOLIA.
" MYRTIFOLIA.
" SCOTTICA.
} 3, 4, 5, up to 10 feet.
" Yellow-berried, and other sorts.
" Variegated, of sorts, 3, 4, 5, up to 10 feet.
" Golden Queen, 4, 5, 6, 7, up to 10 feet.
" Silver Queen, 4 to 10 feet.
" Weeping Perrys, on straight stems, with heads of 10 to 15 years' growth.
" New Golden Weeping, a large quantity of beautiful plants.
Knap Hill Nursery, Woking, Surrey.

Special Cheap Offer.

ISAAC MATTHEWS AND SONS have to offer 200,000 very fine plants of RHODODENDRON for forcing, Cunningham's White, Jacksonii, Caucasicum pictum, in sizes varying from 1 to 3 feet, at very low prices.
PONTICUM RHODODENDRON, from 3 to 6 inches, and intermediate sizes up to 4 feet, about 800,000; Seedling Hybrids, in sizes from 4 to 6 inches to 3 feet, about 400,000. All fine, bushy, well-rooted stuff.
HOLLIES, Common LAURELS, Portugal LAURELS, English YEWS, CUPRESSUS RETINOSPORA, AZALEAS, and other sorts of Surplus Nursery Stock too numerous to mention, at very reduced prices. 800,000 strong 4-yr. and 5-yr. THORN QUICK.
For prices and particulars apply to the Nurseries, Milton and Wetley Moor, Stoke-on-Trent.
CATALOGUES free on application.

J. E. DIXON'S "PRESIDENT CARNOT" BRUSSELS SPROUTS.

J. E. D. will be able to supply this extraordinary fine strain at 1*s.* per packet, for season 1890. The following testimonial (one of many similar) has been received from—
Mr. GEORGE SUMMERS, *Gardener to the* Earl of Scarbrough:—
"DEAR SIR,—I have grown your President Carnot Brussels Sprouts by the side of several other well-known varieties, and have come to the conclusion that it is the hardiest and best variety grown."
London Wholesale Agents:—HURST AND SON, 152, Houndsditch, E.; COOPER, TABER AND CO. (Limited), 90, Southwark Street, Borough, S.E.
JOHN ETHERINGTON DIXON (second son of the late Edmund Philip Dixon, Seed Merchant, Hull), Seedsman, 21 and 23, Lord Street, Gainsborough.

SHARPE'S VICTOR POTATO.—This valuable Early Potato can be supplied true at 2*s.* per stone of 14 lb. by—
JOHN ETHERINGTON DIXON, 21 and 23, Lord Street, Gainsborough. Cash with order.

FOREST TREES.—Ash, 1 to 2 feet, 13*s.* per 1000; do., 2 to 3 feet, 17*s.* per 1000; Beech, 1½ foot, 14*s.* per 1000; 2 feet, 16*s.*; 2½ feet, 18*s.*; 2½ to 3 feet, 20*s.*; 3 to 4 feet, 24*s.* per 1000; Horse Chestnuts, 2 feet, 20*s.* per 1000; Sweet Chestnuts, 1½ to 2½ feet, 18*s.* per 1000; 3 to 4 feet, 24*s.* per 1000; Larch, 15 to 24 inches, 18*s.* per 1000; 1½ to 2 feet, 20*s.* per 1000; 2 to 2½ feet, 26*s.* per 1000; Spruce Fir, 1 to 1½ feet, 12*s.* per 1000; 1½ to 2 feet, 14*s.*; 2½ to 3 feet, 16*s.* per 1000; Scotch Fir, 2-yr. transplanted, 12*s.* per 1000; 2 to 2½ feet, 15*s.*; 2½ to 3 feet, 20*s.* per 1000; Hazels, 1½ feet, 20*s.* per 1000; Pinus austriaca, 2-yr., 3-yr. transplanted, 15*s.* per 1000; Black Thorns, 2 feet, 22*s.* per 1000; Sycamore, 1 to 2 feet, 13*s.* per 1000; 2 to 2½ feet, 16*s.* per 1000; 7 to 8 feet, fine, 12*s.* per 100; Elm, Wych, 5 to 6 feet, 8*s.* per 100.
GARLIES MITCHELL, Nurseryman, Stranraer.

PLANTING SEASON.
HARDILY-GROWN
FOREST, FRUIT,
& ALL OTHER
TREES & PLANTS,
Evergreens, Roses, &c.
NURSERIES 400 ACRES.
Largest & Finest Stocks in Europe.
INSPECTION EARNESTLY INVITED.
PRICED CATALOGUES GRATIS & POST FREE.
ESTIMATES & ALL PARTICULARS ON APPLICATION.
DICKSONS
(LIMITED),
The Nurseries,
CHESTER.
Address for Letters & Telegrams— Dicksons Chester.

SPECIAL NOTICE.

HENRY ECKFORD, Wem, Salop, begs to state that owing to the short crop of SWEET PEA EMPRESS OF INDIA, **it cannot be offered this season,** and to add that his Price LIST of Culinary and Sweet Peas has been Posted to the Trade. Any one who has not received it will oblige by applying as above.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*
None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.
WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.



FRUIT TREES
For Market and Private Growers.
ORNAMENTAL TREES, SHRUBS, ETC.
Descriptive CATALOGUES Post-free.
J. CHEAL & SONS
Crawley, Sussex.



FOREST TREES.
Adapted for Profitable Planting, Shelter, Game, or Ornament.
One of the largest, hardiest, healthy, and most select stocks in Europe.
INSPECTION INVITED.
CATALOGUES Free, and any information given on application to
LITTLE & BALLANTYNE,
THE ROYAL NURSERIES
(By Appointment),
CARLISLE.

CONIFERS and SHRUBS.—Abies Douglasii, 4 to 5 ft., 50*s.* per 100; 6 to 7 ft., 70*s.* per 100; Araucaria imbricata, 2 to 2½ ft., 20*s.* per doz.; 3 to 3½ ft. 36*s.* per doz.; 4 ft., 48*s.* per doz.; Cupressus Lawsoniana, 2 ft., 25*s.* per 100; 3 to 3½ ft., 32*s.* per 100; 5 ft., 50*s.* per 100; Cupressus erecta viridis, 1½ to 2 ft., 30*s.* per 100; 3 ft., 40*s.* per 100; Picea Nordmanniana, 2 to 2½ ft., 50*s.* per 100; 3 ft., 12*s.* per doz.; Retinospora plumosa, 1½ ft., 25*s* per 100; 3 to 3½ ft., fine, 50*s.* per 100; R. squarrosa, 1½ to 2 ft., 32*s.* per 100; Thuia Lobbii, 3 to 4 ft., 30*s.* per 100; 4 to 5 ft., 50*s.* per 100; T. dolabrata, 2 ft., 30*s.* per 100; 4 ft., extra, 36*s.* per doz.; Berberis Aquifolium, 2 ft., 12*s.* per 100; Box trees, 2 to 3 ft., 20*s.* per 100; Japan Box, 12 inch, 12*s.* per 100; Cotoneaster Simonsii, 3 to 4 ft., 16*s.* per 100; Sea Buckthorn, 12 to 15 inch, 8*s.* per 100; 2 to 3 ft., 16*s.* per 100; Dogwood, 2 to 3 ft., 12*s.* per 100; Escallonia macrantha, pots, strong, 24*s.* per 100; Laurels, common, 2 to 3 ft., 12*s.* per 100; L. Colchiaca, 3 to 3½ ft., 20*s.* per 100; L. caucasicum, 3 to 3½ ft., 20*s.* per 100; L. rotundifolia, 2 ft., 16*s.* per 100; Rhododendron ponticum, 1½ to 2 ft., 30*s.* per 100; 2 to 2½ ft., 40*s.* per 100; 4 ft. buds, 100*s.* per 100; R. hybrida, 2 to 2½ ft., 60*s.* per 100; 4 ft., 120*s.* per 100. Special prices per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

H. I. HARDY, F.R.H.S., Stour Valley Nurseries, Bures, Suffolk, offers the following:—
PRIMULA SINENSIS FIMBRIATA, Seed, very finest selected, from beautifully fringed large compact flowers, pure white, rosy-morn, carmine, purple-blush, in separate colours, 80*s.* per ounce; mixed, 70*s.* per ounce.
" Plants, large and strong, out of 60-pots, to bloom in spring, mixed, 10*s.* per 100.
" " out of stores, to bloom in spring, mixed, 6*s.* per 100.
PRIMROSE, Hardy's new hybrids, novelties, very choice, about 30 colours, from pure white to dark maroon, strong plants, 5*s.* per 100.
PRIMROSE POLYANTHUS, Hardy's new novelties, about 8 splendid colours, make fine trusses, 45*s.* per 1000.
POLYANTHUS, finest selected, gold laced, show flowers, 5*s.* per 100, 45*s.* per 1000.
VIOLA CORNUTA, White Virgin and Queen of Blues, 5*s.* per 100.
LETTUCE, strong plants, Hardy's "Northern King Cos," stands hardest winter and come very early, 5*s.* per 1000.
CABBAGE PLANTS, Enfield Market, strong plants, 2*s.* 6*d.* 1000.
" Red Pickling, strong plants, 3*s* 6*d.* per 1000.
Cash with order. Package free. Extra Plants for carriage.

Special Offer of Large Well-grown Evergreens and CONIFERS, frequently transplanted, standing singly, and every plant a specimen, offered by
WILLIAM WOOD AND SON,
The Nurseries, Maresfield, Uckfield, Sussex.
Single plants supplied if required at the dozen price.

Coniferæ.

ABIES DOUGLASII, 5 to 6 ft., 18*s.*; 6 to 7 ft., 24*s.* per dozen.
" " GLAUCA, very fine, 5 to 6 feet, 24*s.* per dozen.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15*s.*; 5 to 6 feet, 18*s.*; 6 to 7 feet, 24*s.* per dozen.
CUPRESSUS LAWSONIANA, 6 feet, 18*s.*; 6 to 7 feet, 24*s.*; 7 to 8 feet, 30*s.*; 8 to 10 feet, 40*s.* per dozen.
" LAWSONIANA ERECTA VIRIDIS, extra fine, 4 feet, 42*s.*; 5 feet, 60*s.* per dozen.
PICEA PINSAPO, 2½ to 3 feet, 30*s.*; 3 to 4 feet, 42*s.* per dozen.
" PECTINATA (Silver Fir), 3 to 4 feet, 18*s.*; 4 to 5 feet, 22*s.* per dozen.
PINUS AUSTRIACA, 3 to 4 feet, 20*s.*; 4 to 5 feet, 28*s.* per doz.
" LARICIO, 4 to 5 feet, 28*s.*; 5 to 6 feet, 36*s.* per dozen.
" SYLVESTRIS (Scotch Fir), 4 to 5 feet, 20*s.*; 5 to 6 feet, 25*s.* per dozen. From nursery rows, 2 to 3 feet, 35*s.*; 3 to 3½ feet, 50*s.* per 1000.
" INSIGNIS, 5 to 7 feet, 30*s.* per dozen.
" CEMBRA, 3 to 4 feet, 15*s.* per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, 12*s.* per dozen.
RETINOSPORA PLUMOSA, 5 feet, 20*s.*; 6 feet, 24*s.* per dozen.
" " AUREA, 3 feet, fine, 20*s.* per dozen.
THUJOPSIS DOLABRATA, 2 to 3 ft., 18*s.*; 3 to 4 ft., 24*s.* doz.
" BOREALIS, 4 to 5 feet, very fine, 30*s.* per dozen.
TAXUS ELEGANTISSIMA, 1½ to 2 feet, 20*s.* per dozen.
THUIA LOBBII, 4 to 5 ft., 20*s.*; 5 to 6 ft., 30*s.*; 6 to 7 ft., 36*s.*

Large Evergreens.

LAURELS, Common, colchicum, caucasicum, and rotundifolium, 3 to 4 feet, 12*s.*; 4 to 5 feet, 18*s.*; 5 to 6 feet, 24*s.* per dozen.
" Portugal, 2½ to 3 feet, 24*s.* per dozen.
TREE BOX, green and variegated, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* per dozen.
BERBERIS DARWINII, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* doz.
LAURUSTINUS, 1½ to 2 feet, 10*s.*; 2 to 2½ feet, 15*s.* per dozen.
GRISLINIA LITTORALIS, 1 to 1½ ft., 10*s.*; 1½ to 2 ft., 15*s.* doz.
OLEARIA HAASTII, 1½ to 2 feet, 9*s.* per dozen, 60*s.* per 100.
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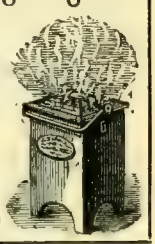
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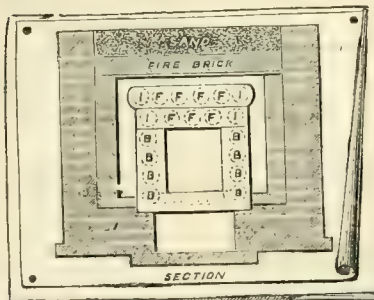
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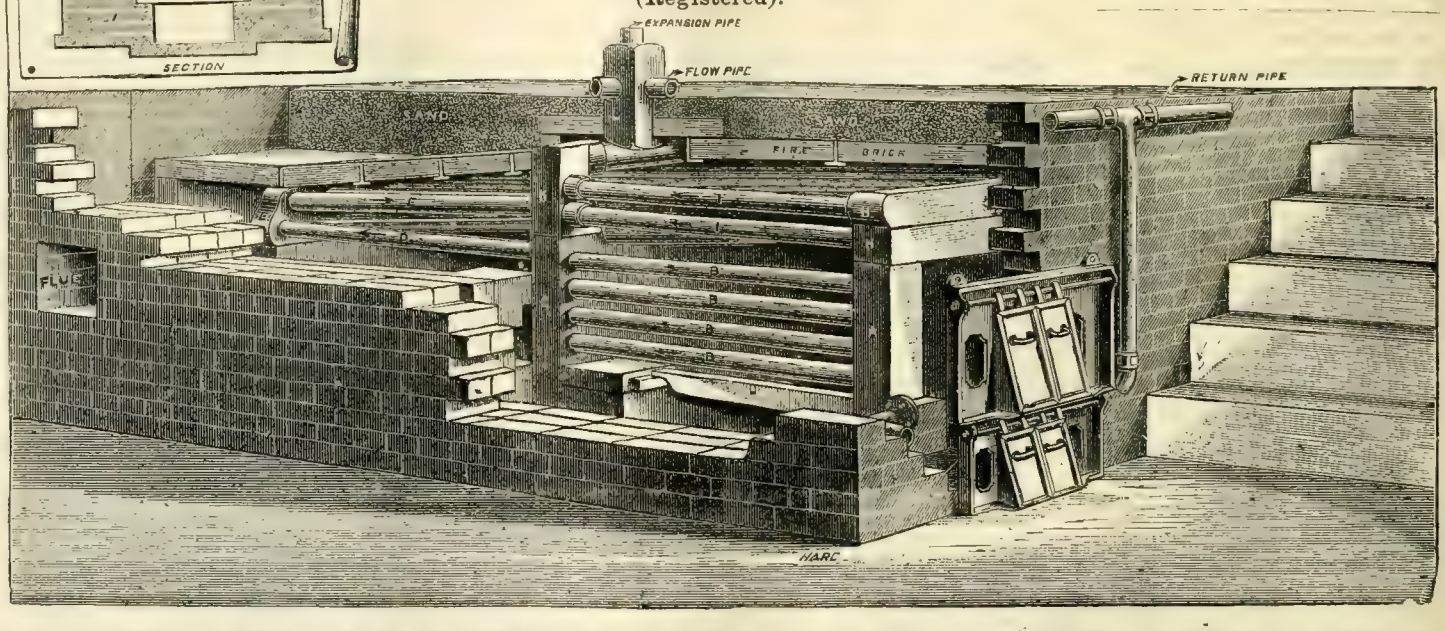
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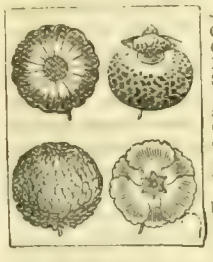


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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 16, 1889.

THE HISTORY OF THE CHRYSANTHEMUM.

BY W. B. HEMSLEY, F.R.S.

(*Continued from p.* 523.)

CHRYSANTHEMUMS RAISED IN ENGLAND AND ON THE CONTINENT, ABOUT 1830.

AS we have ascertained, previous to this date, only imported Chinese varieties and a few unimportant sports were in cultivation in Europe; but about this time some of the florists of France and England began to raise new varieties, both from seed, as we are assured, and from selected sports. Judging from the evidence of such authorities as Robert Fortune and John Salter, many of the most distinct new varieties were propagated from sports, and it seems probable that more were obtained in this way than from seed. Raisers naturally kept their counsel on this point. From the constant intercrossing and cultivation during thousands of years in China—this is the estimate of such authorities as Bretschneider and Maximowicz—the constitution of the Chrysanthemum had reached such an unsettled and plastic condition, that it was continually reverting in one direction or another, and producing the most extraordinary combinations of form and colour. Fortune, the introducer of the Chusan Daisy, and the remarkable Japanese strain of varieties, dilates on this singular phenomenon in many of his writings, and in more that one place in the *Gardeners' Chronicle*. Anticipating a little some points in this history, I will make one or two extracts from Fortune on this point, because, as already intimated, sporting, either vegetatively or from uncrossed seed, seem to have played a most important part in the production of new varieties in Europe, where greater diversities have developed than in the distant eastern home of the Chrysanthemum, in spite of the fact that, in Fortune's time at least, this was the universally favourite flower wherever he travelled, both in China and Japan. Writing on the introduction of the Japanese Chrysanthemums, Fortune says:—

"I wish to put on record some curious facts relating to the new varieties of Japanese Chrysanthemums, raised by Mr. Salter and others, from plants introduced into England by me during my visit to Japan, in 1860 and 1861. In the autumn of 1860 I saw, for the first time, those peculiar forms of the flower which are cultivated in Japanese gardens, and was much struck with the effect they produced as ornamental plants. At Yedo, the capital of the Empire, where the finest kinds are grown, I procured about thirty different varieties. Many of them had their blossoms most curiously and remarkably formed; the colours were varied, brilliant, and in some instances very unusual, and altogether they were quite distinct from any of the varieties I had met with in China. . . . There were many varieties in cultivation which I did not attempt to bring away, but selecting only the best, I brought them over from Japan to Shanghai, in China. Here it was necessary to leave them in charge of a Chinese gardener, while I went north, to explore the country about Peking. During my absence in the north the autumnal rains had been unusually heavy, and on my return I found that many of the Chrysanthemums had damped off, and many of the finest of those I had selected were thus lost to my collection. About a dozen or fifteen kinds, however, were found alive, and were introduced into England. . . . And now I come to the most curious part of my story. Mr. Salter, of Hammersmith, having procured seed from one, or, at the most, from only two varieties of those introduced by me, has raised a large number of new kinds, not only differing in colour, and in form also, from the plant or plants from which he obtained the seeds, but identical with the varieties now cultivated in Japan, and which I lost on the coming home. This result, moreover, in my opinion, has not been obtained by hybridising, for the simple reason that the pollen of the kinds now produced could not be obtained in Europe. It would appear, therefore, that in so far as the Chrysanthemum is concerned, if we are in possession of one variety only we may make it reproduce all the varieties in cultivation from whence it came, or at least varieties so like them in form and colour of the flowers as not to be distinguished from them. In fact, flowers will be produced, not only different in colour from the parent, which is but a small matter, but entirely different in form also.

"It is a well-known fact that individual plants of the Chinese Chrysanthemum sport, as it is called, in an extraordinary manner; that a plant will sometimes throw up a stem producing flowers of quite a different colour from its own, and that the new variety may be perpetuated by propagation."

On the same subject I quote the following paragraph from a "leader" in the *Gardeners' Chronicle* (1863, p. 1107) :—

"Some of the varieties of Chrysanthemum sport in a most remarkable manner . . . The well-known and favourite kind with blush-coloured blossoms, raised by Mr. Salter, of Hammersmith, and named Queen of England, has thrown out several distinct kinds in this way. Its first sport was of a rosy-pink colour, and shortly afterwards another branch produced yellow flowers, and is now known in collections as the Golden Queen of England. This prolific kind has produced several other varieties in the same curious manner, one of which has flowers of a pure white colour, while in another instance they are pencilled rose. These changes have not been confined to the flowers alone, for varieties with variegated leaves have also been produced by the plant we have just named. The sorts named Christine and Julie Grisi are remarkable for producing sports in the same way. Cedo Nulli, one of the most beautiful among the Pompons, may also be named as another example which has the same peculiarity as those already mentioned. It has thrown off, in one instance a kind with yellow flowers, and in another, a lilac sort has been produced. Many other instances might be brought forward."

In the same article there is a reference to the lately revived speculation, regarding a blue Chrysanthemum as one of the possible productions of the future. When we consider what has been effected with the China Aster, we may yet believe that such a thing is within the range of probabilities.

To return to the actual raising of new varieties; Smith and Clarke of Jersey were among the most successful of the early raisers, and their novelties were largely brought out by Chandler & Son, of Vauxhall. Following them were the Salters, father and son, of Versailles, and subsequently of the Versailles nursery at Hammersmith. John Salter wrote a history (1865), of his favourite flower, and contributed articles on the same subject to various horticultural publications, and thus preserved to us many interesting facts which might otherwise have been lost. From him we learn that seed was first saved in the south of France in 1830, and that the credit of raising the first seedlings is due to a Chevalier Bernet, of Toulouse. Amongst the most highly esteemed of the varieties raised by him were: Maréchal Duroc, Insigne, Christine, and Chevalier Domage. The first genuine English seedlings, we are informed by the same authority, were raised in Norfolk by Mr. Short and Mr. Freestone, about 1835. In 1836, there appeared in Harrison's *Floricultural Cabinet*, a coloured plate representing three varieties of Chrysanthemums—a yellow, a rose, and a crimson, the two last being described as Wheeler's hybrids raised in this country. They are of moderate size and unequal in ornamental character to some of those figured by Sabine. In the same volume is a classified list of varieties cultivated by J. Martin, gardener to J. S. Poulter, M.P., of Winchester. It contains fifty-nine varieties, concluding with a small brown half-double Japanese kind, which he conceived to be a distinct species, owing to its very small leaves and flowers. This was more likely a variety of C. indicum. In the same publication for 1838, there are figures of two varieties raised by Freestone, one of which, Minerva, is represented as having the petals edged with blue! but is not otherwise remarkable.

Haworth was the first to attempt a classified arrangement of these early Chinese double Chrysanthemums. His classification appeared in the ninth volume of Loudon's *Gardeners' Magazine*, in the first volume of Paxton's *Magazine of Botany*, and in the first volume of Harrison's *Floricultural Cabinet*. He divided them into what he termed Ranunculus-flowered, incurved Ranunculus-flowered, China-Aster-flowered, Marigold-flowered, and tassel-flowered. As a matter of fact, this classification was a little premature, for, indeed, there was really little to classify.

In the *Gardeners' Chronicle* for 1841, there is an account of Chandler's collection, containing varieties raised in Jersey, Versailles, and Norfolk; and it is stated as a novelty that many of the small gardens in the streets near the nursery were beautifully embellished with flowering Chrysanthemums. Passing on to the year 1848, there appears a coloured figure of an Anemone-flowered variety called Nancy de Lermet, white, tinged with blue! Varieties of this class had been in cultivation several years, but this is the earliest figure I have found.

The Origin of the Pompons.

Two years previously (in 1846) Robert Fortune introduced the small-flowered Chrysanthemum, which he called the Chusan Daisy, of which there is a specimen in the Kew Herbarium, and another variety named minimum, from which sprang all the Pompon race. Fortune himself says that at that time Chrysanthemums in England were far superior to those of China, and he could find nothing worthy of being introduced except the varieties mentioned. In England, however, they met with scant favour at first, though it was otherwise in France, where they soon gave birth to many beautiful varieties. Harrison's *Floricultural Cabinet* for 1850 contains a good coloured plate, representing seven pretty varieties of this class, raised by a Paris nurseryman named Lebois. They vary from white and yellow to crimson and lilac; but I must not dwell on their merits, and can only refer to another plate of handsome varieties, chiefly by the same raiser, in the volume for 1852.

In 1851, coloured figures of Annie Salter, a large yellow reflexed variety, and the rose Pompon Pouledetto, were published in the *Florist*, with an article by Alfred Salter, who, among other things, says that the last exhibition at Stoke Newington must have astonished those who visited it for the first time; and even such as had marked the annual progress were hardly prepared for so great an improvement. Some blooms of Queen of England measured more than 6 inches across.

Notwithstanding all my efforts to the contrary, this paper is growing to an undesirable length, and I have only space left to refer to a few of the most noteworthy published figures of the principal classes of Chrysanthemum.

Turning to the *Florist* of 1861, we find Salter's Calliope and Diana, and Ingram's Little Gem—all Pompons. The first is an Anemone-flowered variety, with a large golden disk and a deep rosy-red short ray of about two rows of flowers. The same volume contains figures of the large incurved dark crimson Rifleman, and the beautiful buff and yellow Pandora, raised by Messrs. Smith & Clarke, of Jersey. In the volume for 1862 are figured the spheroidal incurved varieties, Lady H. St. Clair (white), Duchess of Wellington (rosy-lilac), and General Slade (yellow and copper-red). In 1864, Princess of Wales (white and lilac), and Prince Alfred (orange-red and yellow), were figured; but since that date the Chrysanthemum was wholly neglected in the *Florist*. Firefly, Viola, and Lizzie Holmes (*Floral Magazine*, 1864, plate 186), are fine examples of the Pompon class—the first, Anemone-flowered. The white-flowered Pompon, with white-edged leaves, is figured in the same serial, pl. 239 (1865). A new type, named the Duchess of Edinburgh, is depicted in the second series of the *Floral Magazine*, pl. 155 (1875). The heads are nearly 9 inches in diameter when the long drooping ray-flowers are spread out, and the tubular disc-flowers are much elongated; it is reddish-lilac, tinged with yellow in the centre. Associated with it is the beautiful reflexed Purple King. Triomphe du Nord (1876, pl. 199) is a singular Japanese maroon variety, with short, twisted, entangled flowers, revealing here and there their yellow under-surface. Plate 307 (1878) represents a yellow (Fulton), and a rosy-purple (Fulgore) variety of the same class. The very deep orange, Mrs. Bateman (*Floral Magaziae*, 1881, pl. 442), apart from its ornamental character, is interesting, as having originated in a sport, the particulars of which are given in an article, by Mr. W. Greenaway, accompanying the plate.

I will conclude this part with a few more words concerning the

Japanese Chrysanthemums,

introduced by Fortune in 1862. From their singular and picturesque character they caused quite a sensation, though florists generally did not share the admiration artists professed for them. Fortune himself foresaw and foretold their reception in this country.

Salter writes:—"In 1862 Mr. Fortune introduced several Japanese varieties, some of which were spotted and striped, others were of fantastic forms, called Dragons, and one was a beautifully fringed white flower, having the appearance of a Japanese Pink rather than of a Chrysanthemum." Fortune himself says of them:—"One had petals like long thick hairs, of a red colour, but tipped with yellow, looking like the fringe of a shawl or curtain; another had broad white petals, striped with red, like a Carnation or Camellia; whilst others were remarkable for their great size and brilliant colouring." Several of the most remarkable forms have been figured in the *Gardeners' Chronicle* from time to time, and references to these figures will be found in a succeeding paragraph on the principal modifications of the Chrysanthemum.

As samples of the English raised varieties of the Japanese type or types, I may refer to Red Dragon and Leopard, *Floral Magazine*, 1868, plate 380; James Salter and Hero of Magdala, 1869, plate 422; Garnet and Jane Salter, 1870, plate 518; and Sol and Sultan, 1871, plate 474.

One of the most striking and distinct, though not one of the most elegant of varieties introduced by Fortune, is figured in the *Flore des Serres et des Jardins*

de l'Europe, xv., plate 1574. The broad, acute ray-flowers are reduced to a single series, and are of a deep red, blotched with white. It is a very stiff odd-looking thing altogether.

The coloured figures of Chrysanthemums in the Japanese work, *Phonzou Zoufou*, cited at the end of this paper, embrace a considerable range of variety, though not so great a range as could be brought together in this country, and the extremes of the fantastic forms known as Japanese are wanting. There are the variety known as Striatum, several with exceedingly narrow flowers, and the "single" form with small pink rays, which may or may not be a wild form of C. morifolium (sinense). There is also single and double C. indicum, and a red-brown one that might be the "Chusan Daisy."

(To be continued.)



Fig. 77.—Adiantum reginæ.

ADIANTUMS.

This genus includes such a number of beautiful and widely distinct species that there seems little room for additions in the way of garden varieties; yet some varieties of garden origin are not only distinct, but are valuable acquisitions, especially as decorative plants. The accompanying illustration (fig. 77), A. reginæ, represents one of these. This is a variety of A. scutum (Ghiesbreghtii), and is somewhat intermediate between this and A. Victoriæ (another variety of the same parentage). A. reginæ has the taller, spreading habit of scutum, with the broad, fresh, green pinnulés of Victoriæ. It is of free growth, and of good substance, forming a bold and effective plant. This variety, for which a First-class Certificate was awarded by the Floral Committee of the Royal Horticultural Society about two years ago, originated with Mr. H. B. May. Of other garden varieties, A. elegans is one of the most popular, and is now grown to some extent in preference to the old favourite, A. cuneatum, from which it differs in being of a more spreading habit, and having rather larger fronds, which are of a light shade of green, and when grown in a light open position, it has that yellowish shade which is now so indispensable in Maidenhair Fern for market work. A. fragrantissimum is another very pretty variety, with rather large spreading fronds; the pinnules are deeply cut, and irregular in size, the ultimate ones being larger. A. Waltoni diffusum resembles the above, but is more finely divided, and is perhaps the more desirable variety.

TONGUES IN TREES.

(Continued from p. 439.)

The Daphne and Syringa are the metamorphosed maidens who fled from the wooing of Apollo and Pan. The Andromeda, found somewhat rarely in English peat bogs, owes its name to the delicate fancy of Linnæus, who discovered it blooming lonely on a barren, rocky isle, like the daughter of Cepheus chained to her sea-washed cliff. The yellow Carline Thistle is named after Charles the Great, who, praying for the removal of a pestilence which was decimating his army, saw in vision an angel pointing out this plant as a heaven-sent cure. The Herb-Robert introduces us to mediæval times, having cured a disease endured by Robert Duke of Normandy, still known in Germany as *Ruprechts-Plage*. The Filbert glorifies the horticultural skill of one King Philibert. The Treacle-mustard, a Crucifer resembling Wallflower, was an ingredient in the *Orvietan*, or Venice Treacle, compounded by Wayland Smith to treat the poison-sickness of the Earl of Sussex. The word treacle is corrupted from the Greek *theriacum*, "belonging to wild beasts," whose blood formed part of the antidote. It was made up by the physicians of Mithridates, King of Pontus, and is in some parts of England known as Mithridate Mustard. The Flower de Luce, or Fleur de Lys, is the flower of King Clovis, or Louis, figured on a shield brought down from heaven to Clovis when fighting against the Saracens, and afterwards assumed as a royal device by Louis VII. It is probably a white Iris. Every child can associate the Rose, Shamrock, Thistle, Leek; the Planta Genista of Anjou, the York and Lancaster Roses, the Orange of the Stadtholders; and is familiar with the Oaks of Rufus and of Boscobel, and with the Druidic legends of the Mistleto. The parasitic habit of this last has given it a high place in northern mythologies. The reverence felt for it by the Celtic races was confined to specimens growing on the Oak. Such cases are very rare, although authenticated from two places in Herefordshire—Eastnor Park (see (Fig. in *Gardners' Chronicle*, July 27, 1878, p. 121) and Tedston Delamere; the usual nidus being on the Apple, Hawthorn, Poplar; less commonly on the Lime, Sycamore, Ash, Willow, Acacia. It was held in abhorrence by the Scandinavians as the agent employed by the murderer of Baldur, the Christ of their historic creed. The gods had charmed him against all weapons made from trees which grow out of the ground, or metals hidden in the earth; the Mistleto belonged to neither class; and with a sharpened Mistleto bough the dæmon Loki wrought his death.

Tantum Religio potuit suadere!

Abundant strange superstitions are connected often unaccountably, with common plants. The Rowan and Elder are lucky; their shelter protects from lightning in a storm; pieces of their wood carried about the person are a charm against evil spirits. If the stem of an Ash—a case from Somersetshire was cited by the newspapers within the last year—be forced apart, and a ruptured child passed through the aperture, its malady will be for ever healed; if a hole be bored in its wood, a living shrew mouse inserted, and the hole plugged up with clay, contact with the tree will cure bewitched human beings or cattle. Happy is he who lights upon a double Ash leaf, a double Hazel nut, a fourfold leaf of Clover—good fortune will attend his going out and coming in. In the New World an ear of red Indian corn, in the Old World a white Heather plant, betoken happy love. "Our dear Victoria," says the Queen, in her *Leaves from the Highlands*—it reads piteously now—" was this day (September 29, 1855) engaged to Prince Frederick William of Prussia. During our ride this afternoon he picked a piece of white Heather which he gave to her; and this enabled him to make an allusion to his hopes and wishes, which led to this happy conclusion." Meat pierced with a skewer of the Spindle-tree will not become corrupt. If bees swarm upon a dead Elm bough, death menaces the nearest dwelling; the same calamity is imminent if (tell it not in Gath), a Primrose be brought into a house. A Killarney trout can be broiled only on a fire fed by Arbutus boughs. In the West of England, rain follows on the kindling of Bracken. A sprig of Borage mixed with drink elevates and cheers the spirits. "*Ego Boragium fero Coragium*," says an old Latin proverb, honoured unwittingly to-day by the presence of the flower in cider-cup or Badminton. If St. John's Wort be gathered by a fasting maiden on St. John's Eve in the dark, and fixed with a lump of clay to her chamber wall, its freshness on the following morning indicates her speedy marriage; if it withers, she will die before the year is out. The rare Fern, known as Moonwort, is said to have the faculty of attracting iron; men treading on it find the nails from their boots withdrawn; a woodpecker incommoded in nest-building by a large nail fastened in the tree, was observed to apply a frond of Moonwort to the nail, which forthwith fell to the ground. The growth of Wheat delivers from the devils who infest the fields. Says the *Avesta*:—

When the Corn grows, then the demons hiss;
When the shoots sprout, then the demons cough;
When the stalks rise, then the demons weep;
When the ears grow, then the demons fly.

The beautiful origin of the Maize is known to all readers of *Hiawatha*. The Tea plant sprang from the self-mutilation of a Buddhist saint. He had sworn never to sleep; and once, worn out by prayer and toil, he broke his vow. Waking, he cut off his eyelids and flung them on the ground; from their blood as it sank into the soil grew the herb whose infusion should be for ever a specific against sleepiness.

The Apple plays its part in the fables of almost every race. It was the forbidden fruit of Eden, was watched by dragons in the garden of the Hesperides, formed the groves of the blessed isle of Avalon, conveyed the poison to Snowflake, was pierced by the arrow of Tell. To this day, it receives in the cider districts exceptional respect. The Devonshire women carry bowls of wassail into the orchards, and sprinkle a few drops upon each tree, with the words:—

"Old Apple tree, health to thee!
We wassaile thee and drink to thee;
Well to bear hats full, well to bear caps full,
Three-bushel bags full."

The practice is carefully confined to January 17; and a like feeling as to dates is widely prevalent. In many parts of England, the labourers will plant Potatos only on Good Friday, Turnips only on St. Margaret's Day. Here and there rivers are still sprinkled with flowers on Holy Thursday—a relic of the Roman Fontinalia:—

The shepherds at their festivals
Carol her goodness loud in rustic lays.
And throw sweet garland wreaths into her streams,
Of Pansies, Pinks, and gaudy Daffodils.

At Oxford, May-day is ushered in not only by the singing of the famous hymn on Magdalen Tower, but by flowers and garlands, Jacks-in-the-Green and blowing of horns by the children, who are thus unconsciously celebrating the ritual of the goddess Flora. *W. Tuckwell.*

(To be continued.)

New or Noteworthy Plants.

ADIANTUM PARADISEÆ, *Baker, n. sp.**

This new Adiantum has been sent to the *Gardeners' Chronicle* by Mr. William Juby, for the last twenty-four years gardener to J. E. Wood, Esq., of Grahamstown, Cape Colony. It was found in the mountains in the district of Bedford, by Miss Paradise, and is named after that lady at Mr. Juby's request. Of the numerous new forms nearly allied to A. æthiopicum, venustum, and cuneatum, its nearest ally is the Himalayan A. Wattii, Baker, in *Journ. Linn. Soc.*, vol. xviii., p. 381, tab. 14 A, figs. 1—2.

General habit of A. æthiopicum, cuneatum, and venustum. Stipe and rachis slender, naked, glabrous, brown-black. Frond deltoid, tripinnate, glabrous, half-foot long by nearly as broad; lower pinnæ largest, deltoid, unequal-sized, cut away on the lower-side at the base, conspicuously petioled; ultimate segments rhomboid, a quarter to one-third of an inch long and broad, cuneate and entire in the lower half or more, irregularly rounded, and sparingly crenate at the apex. Sori, one to three to a segment, oblong, broadly, shallowly reniform, one-twelfth to one-sixth of an inch long. Indusium broad, glabrous, persistent. *J. G. Baker, Herbarium, Kew.*

Bulbophyllum fallax, *Rolfe, n. sp.*

One of the most remarkable species of Bulbophyllum which I have seen for a long time has recently been forwarded to Kew, for determination, by Messrs. Seeger & Tropp, of 112, Lordship Lane, East Dulwich. It was imported by them from Assam, and as it appears quite distinct from anything hitherto described, I propose for it the above name, on account of certain peculiarities to be presently pointed out. Two of its characters seem to me quite anomalous, and I do not remember to have seen or read of them in any other species of the genus. First may be mentioned that the column has two pairs of acute teeth, one standing behind the other, whereas other species have only one pair, situated at the apex of the column. The second peculiarity is the presence of a pair of small fleshy bracteoles, at the angles formed by the dorsal and lateral sepals. These arise from the apex of the ovary, and are external to the sepals. Very few Bulbophyllums are in much request with cultivators, but this is really an elegant little plant, and its colours as brilliant as those of certain Orchids which are set much store by. The arrangement of the flowers on the inflorescence is very remarkable. The slender scape rises nearly erect for about 4 inches, until the flowering portion is reached, when there is a sharp bend, and the upper portion arches over. The flowers are distichously arranged, though they are so sharply secund as to hang pendulous in a single row underneath the rachis. They appear disepalous, but this arises from the fact that the two lateral sepals are very narrow, and completely joined in one body, which closely resembles the dorsal sepal in appearance. The flowering portion of the raceme measures 4 inches, and there are twenty flowers, each one horizontally suspended; thus the dorsal sepal alternates with the lateral pair of the next flower all the way up the raceme, and the peculiar lips are, of course, directed right and left also. The whole inflorescence is so deceptive in appearance, until closely examined—although each flower is three quarters of an inch long—as to justify the name given. Other characters are as follows:—Pseudobulbs ovoid-tetragonal, scarcely half an inch long, approximate. Leaf solitary, linear-oblong, subacute, 1½ inch long, 3 to 4 lines broad. Bracts lanceolate-ovate, acute, 2 lines long, subsecund. Sepals narrowly linear, acute, striped with dark maroon-purple on a lighter ground. Petals ovate, obtuse, beautifully ciliate, 1½ to 2 lines long, bright maroon-purple. Lip with apical half ligulate, obtuse, basal half gradually widening backwards, the margins subconnivent, base cordate by a pair of rounded auricles, colour maroon-purple. In the middle is a sharp double curve, formed by the lip first doubling back suddenly upon itself, and then immediately afterwards bending forward again, the apex not being quite parallel with the base. The lip itself is of a remarkable and very unusual shape; and, as if the above were not sufficient anomalous characters to be combined in a single species, the apical pair of column-teeth are themselves bidentate. *R. A. Rolfe.*

* *Adiantum Paradiseæ*, Baker, n. sp.—Stipitibus rachibusque nigro-castaneis nudis nitidis; frondibus deltoideis tripinnatis, pinnis infimis maximis conspicue petiolatis inæquilateraliter deltoideis, segmentis ultimis laxe dispositis petiolatis dimidio inferiori cuneatis sursum irregulariter rotundatis parce crenatis; soris ad segmentum 1—3 oblongis leviter reniformibus; indusio lato persistente.

BRITISH APPLES.

I feel intensely patriotic [insular?] when I pen this heading. I feel as intensely indignant when I look upon the barrels of Apples consigned to our dealers by the outsider, even though he be a Canadian or Australian colonist. There are no such Apples in the world as those grown in Britain—at least, there ought not to be; but we do not do our best in Apple production, and therefore the Canadians beat us at our own game. I am not indignant because these foreign fruits come to us, to the exclusion of our own from our home markets. The fact is, had we as good Apples as we might have, the Canadian competition would be very materially reduced; but so long as we have few home-grown Apples, we may well be thankful for what Canada sends us. It is best to grow our own if we can, next best to buy where we can when we have none. It is worst of all, to have none at home, and to be unable to buy elsewhere. Now, our nurserymen get plenty of wonderfully fine fruits from their small trees. The multiplication of small-tree plantations all over the kingdom presents one means of counterbalancing the Canadian importations. Dwarf bush-tree culture seems to be specially fitted for this country, because our summers are rather short, and small trees perform their work quicker in swelling fruits, because nearer the soil. The planting on the Paradise stock of a million of maidens of the best kinds for winter keeping, and productive of fine showy samples, would soon give to our markets an abundant supply of fruit, whilst it would also give some regularly for consumption in the poorer households, in cottage gardens, and in allotments. Throughout our market orchards, nine-tenths of the trees are early sorts, the fruits pulled and run into market from the trees, so that by the end of October hardly a bushel is left unsold. The growers say it is of no use to grow for winter supply, as the Canadians are then in, and knock our fruits out altogether. That is, of course, because our keeping kinds from orchard trees generally are too poor in quality and appearance; they lack size and colour, which are essential to profitable sale. What is to be done? Cut off the heads of healthy old trees of worthless kinds, and regraft with better sorts; grub out old gnarled trees useless to regraft, and replace by young trees of good keeping kinds; whilst with old trees of good sorts, but needing renovation, fork off the top spit of soil, replace with some manure and fresh soil, cut trenches round the roots on one side only, to a depth of 3 feet, and fill in with fresh soil, serving the other side half the same way two years later, and giving the heads great relief by hard thinning. These remedies, whilst checking cropping for a couple of years, will be productive of wonders in the end.

How to improve Old Orchards.

A great deal may be done to help old trees by giving plenty of moisture and mild stimulants, especially during the summer. Orchards of standard trees planted on gravel, especially those having a little south or west fall, might be helped by means of sewage used to irrigate the surface from time to time, especially attracting roots to the surface, in search of the excellent food thus furnished. How much can be done to help forty-year-old Blenheim Pippin trees I had striking evidence of the other day. A retired tradesman at Feltham sent for me to see his grand crop of Blenheims. He has some half-dozen tall, overhanging trees in his garden, partly on grass, which having been three years since hard thinned, have also since been aided by the constant application to the roots of all house slops, including even greasy water, or the washings of the dishes. Note the result. Last year a good crop; this year a much finer one, the fruits generally being a superb sample, as fine as the most ardent admirer of Apples could desire. As they laid in his store, I thought I had never seen a more suggestive sight so far as British Apples are concerned, or one more pleasing. There is nothing special in the soil or situation. The trees seem to owe all they have done to thinning and plenty of watering, and if we had several thousands of acres of such trees which could be conveniently flooded occasionally with our now too largely wasted sewage, the problem of supplying our market with home-grown Apples would be solved. That trees should do so well forty years old, and they will—if cared for—be still good forty years hence, shows the wisdom of planting for the future as well as for to-day. Another illustration of the effects of renovation in an old orchard was shown me the other day at Castle Hill Gardens, Englefield Green, where Mr. W. Swan, formerly of Fallowfield, is now gardener. Here, on a grass run for poultry of all kinds, is a large number of old trees, some lop-sided, and almost stunted in appearance, yet carrying wonderful crops of fine fruit. One tree, oddly enough, bears on one half one year, and on the other half the next. The kind is of a conical, rosy-cheeked character, handsome, and good, the fruits the size of large Kings. The fruiting half, bearing probably six or seven bushels of Apples, was the most wonderful crop I ever saw in my life for the extent of the tree covered. What a picture it would have made! But nearly

every tree was fruiting, or had fruited abundantly, and Norfolk Beaufin on two trees looked like red Quarrendens for colour, and very fine are they. The geese running in the orchard are fond of Apples, and have been detected reaching up to the low boughs of one of these Beaufin trees, shaking them to 'cause the fruits to fall, and then eating them—not such big geese after all. The poultry manure the soil, and keep down insects. Three years ago, trenches 5 feet from the stems were opened, half-way round the trees, and filled with fresh soil and manure. That has had a grand renovating effect, and the other halves will be served the same as time permits. Here are two examples of what can be done in the way of improving old orchards. The same sort of thing needs to be done universally for old trees, and myriads of young ones should be planted, and then Apples will be plentiful enough. *A. D.*

CATASETUMS.

In consequence of my note upon the female flower of Catasetum Bungerothi, published in these columns in April last (see vol. v., p. 461), I have received a very interesting letter from Mr. Rand, of Brazil, concerning this genus. Thinking his observations may be interesting to Orchid cultivators in general, I have given below pretty full extracts from his letter, from which I gather that he has a very large collection of this genus, including many undescribed species. He states that Catasetum has been a favourite genus with him "for many years, and I suppose I have the largest collection of species in the world. I have been collecting them from every quarter, studying them and trying to reduce them to some order, but I need hardly say that, thus far, my success has not been flattering; no sooner had I, by a long series of observations, formulated a rule, than some member of the family developed a seeming eccentricity which completely overturned my theory. However, there are a few facts which, thus far, I have no reason to doubt. One of these is the constancy of Catasetum macrocarpum or C. tridentatum; it is here one of our commonest Orchids, and I have seen thousands of plants and flowers; although there are many varieties, differing in size, colouring, and even somewhat in form, the tridentate character is fixed, and it produces its characteristic male and female flowers, the former in semi-drooping spikes, often of great size, the latter very few on an erect spike, but never both sexes on the same spike, as far as my very extended observation goes. The female flowers are here called 'Monkey-cups'; they are of great substance, dry, as hard as bone, and often retain their bright colour for a long time. This species I have never seen run into any other. As Mr. Rolfe remarks, the female flowers of some of the Myanthus somewhat resemble the female of C. tridentatum, but they are never one-third of the size, and cannot be confounded by anyone who has for any time observed these two groups. There is a very large, peculiar, and handsome bee here, whose special mission appears to be the fertilisation of C. tridentatum. When it is in bloom, this bee appears in great numbers, but is never seen at any other time. This morning I saw one looking at a plant of C. tridentatum which was only in bud, but after a while, becoming satisfied that his attentions were premature, he engaged in a desperate flirtation with a fine spike of a species of the Monacanthus section.

"In the Myanthus group there seems to be some constancy, but the female flowers, which are always in erect spikes, are very few. Indeed, my observation tends to show, that in Catasetums of all groups, the proportion of male flowers to female is more than a thousand to one. In this group I have occasionally seen both male and female flowers on the same spike. I have quite a number of probably undescribed species of this section, from the far River Purus, some of which are very handsome.

"Of the Monacanthus group, which is, in many respects, very distinct, I am not as yet prepared to venture an opinion, farther than that, as far as I have observed, it never sports into any of the other groups. Its geographical range is very extensive, and though found from the Amazon to the Upper Purus, and both north and south down to the coast, it is not exclusively Amazonian."

"The Gnomus group is also generally constant. Some of the varieties of this are of immense size. I have seen plants larger than a half-bushel basket, and spikes of bloom 4 feet long covered with flowers. The female flower is very distinct, but not very large or showy."

Observations such as these are valuable and interesting, and it is much to be deplored that those who have the opportunity of making them do not more frequently do so, as many things which now have to be conjectured or half guessed at, and so leaving matters in a state of uncertainty, would then become sure stepping-stones to the onward progress of science.

Mr. Rand informs me that all the species of Catasetum are known as "Pacova-Paulistas" in the Para province; and it would appear probable that there are several forms that we are at present unacquainted with, for he mentions a group with most remarkable flowers that are very beautiful, the colours of the different species being bright yellow, rich wine-colour, or purple, none of which, he says, appear to be described, and are very rare. Another group he describes as having "close pendulous spikes, like a bunch of unthinned Grapes, with colours much like those of the Guinea-hen flower, Fritillaria mealeagris." And there is "another group from the Upper Amazon with immense spreading flowers, often 3 to 4 inches in diameter, in long pendulous spikes; colours of the male black, yellow, and green, with the lip heavily fringed, making the most demon-looking flower possible. The female rich yellow and green, large, and very beautiful, and at the first glance one would take it for a Cypripedium. It is very scarce." Can this be C. Christianum, or some allied species?

It would seem that C. Bungerothi must have a rather extensive range, as Mr. Rand states that he has the yellow-flowered variety (var. aureum) from the Amazon region, but does not know from what locality. Curiously enough he had had the plant for several years, but it did not flower until just about the time Mr. Bungeroth sent the typical form to Mr. Linden. C. galeritum and C. pulchrum, Mr. Rand informs me, are also discoveries of his; but he does not mention their localities. C. Garnettianum, however, he states to be a native of the River Purus; but of this and C. galeritum he has not yet seen the female flower.

Concerning C. discolor, figured in *Lindenia*, pl. 38, which is stated to come from Pernambuco, Mr. Rand writes as follows:—"I have to-day in bloom the same plant from the Upper Amazon, and, what I have never seen before in a Catasetum, the flower-spike is directly from the middle of the apex of the pseudobulb, which is not fully matured, the foliage below being fresh and bright." The original C. discolor came from Demerara, and the plant figured in *Lindenia* seems to be the true plant, so that it probably has a wide distribution. There is, however, a plant figured in the *Botanical Magazine* on t. 3708 as Monachanthus fimbriatus, which came from Pernambuco, and is either a variety of C. discolor, or the female of an allied species, as is, perhaps, more probable.

One fact mentioned by Mr. Rand is very interesting, and fully confirms the view held by Darwin, and now well-known to be the case, that with the majority of Orchids cross-fertilisation is, in various ways, fully provided for, and self-fertilisation often rendered impossible. Mr. Rand states "that the male and female flowers, when on separate spikes, are never, so far as my observation of years tends to show, in bloom on the same plant at the same time. This goes to show that fertilisation of a plant by its own pollen is impossible."

At Kew, however, in October of last year, a plant flowered which produced on one side of the pseudobulb a spike of male flowers, and on the other side of the same pseudobulb a spike of female flowers, the flowers on both spikes being expanded at the same time. It was described in these columns, vol. iv., p. 473 (1888), as C. fuliginosum; but in vol. v., p. 394 (1889) was corrected to C. Darwinianum. A coloured drawing of the plant was made, and is now preserved in the Kew Herbarium, together with the specimen. Recently Mr. F. Sander, of St. Albans, had a plant of C. Bungerothi in bloom on which there were two spikes of flowers, one of which bore expanded female flowers, whilst the other, with male flowers, was not yet open.

Cultivation.

In the very interesting account Mr. Veitch has given of the "Cultivation of Orchids, Past and Present," lately published in the *Journal of the Royal Horticultural Society*, mention is made of difficulties which attend the cultivation of certain Orchids, and that there must be some condition or conditions under which they exist in nature that, through want of knowledge, are not sufficiently taken into account in their management under cultivation. In the discussion which followed the reading of Mr. Veitch's paper, Sir Trevor Lawrence said, with regard to the cultivation of Catasetums, that "he thought the difficulties were almost entirely unsurmountable, especially in the matter of providing them in the winter with a warm, dry, and bright atmosphere." I have frequently urged, in past years, that for the proper cultivation of plants the conditions under which they exist in nature should be imitated as closely as possible, and that where a plant is found not to succeed well under cultivation, every item of information that can be obtained relative to its natural state of existence, should be taken into account, and acted upon as closely as circumstances will permit. For such an opinion I have often been laughed at, and told that "we can grow them better than they grow in their own country," but it is quite evident, from the remarks of such eminent cultivators as those above alluded to, that the gardener has still something to learn in respect to the cultivation of certain plants; and with regard to Catasetums in particular, Mr. Rand makes a remark, which, whilst it seems to show the cause of failure in the cultivation of these plants, only lands the cultivator in another practical difficulty. Mr. Rand writes as follows concerning their cultivation in Brazil: "These plants are generally impatient of cultivation if grown on dead material; on blocks especially they soon dwindle and die. The only way to keep them is to grow them on trees, live wood. Not knowing this, I at first lost many which, as yet, I have not found again, and of which I have no preserved specimens."

There is something very curious in this, and which would repay a little investigation. We all know that they grow on trees (for the most part at least), in their native habitats, but as they are epiphytes and not parasites, it would appear that they ought to grow just as well on blocks, &c., provided the other conditions remain the same. But there in Brazil, where hot-water apparatus is unnecessary, and where the plants may be considered as surrounded by their natural atmospheric conditions, as regards temperature, moisture, shade, and ventilation; yet, according to Mr. Rand, they still require to be provided with living wood to grow upon. This is a point that would be liable to escape the notice of most cultivators, and if this is really the secret of failure in cultivating Catasetums (for certainly many of them do die out after a few years, although formerly they used to be very successfully cultivated with Mr. Wilson Saunders, at Reigate), it is worth inquiring into, since if it be so, there must be some closer connection between the life of the Catasetum and that of the trees on which it grows than has been suspected, or even thought of; what that connection is remains to be found out. There is, however, a great practical difficulty in growing them on trees, but they might be tried on tropical shrubs.

Concerning the genus Cycnoches, Mr. Rand writes as follows:—"Some from the river Purus are wonderful. I have seen pseudobulbs 4 feet high, and larger than any Cyrtopodium, with racemes of fifty to o e

hundred deliciously-scented flowers, the male resembling C. Egertoni (but probably an undescribed species), over 18 inches long. The female flowers immense, looking as if carved out of polished ivory, and both on the same plant at the same time. The female flowers are only three to five in number, but lasting six weeks in beauty, whereas the male flowers only last about ten days."

To finish up, Mr. Rand relates the following amusing episode relating to Catasetums. He writes:—"Some time ago a man brought me flowers of a desirable species, and finding it grew in the woods near his house, I told him he might bring me a lot. In a few days he appeared with two farinha baskets (about half a bushel) full of the pseudobulbs, all cut, trimmed, and cleaned, looking somewhat like a lot of small Cucumbers ready for pickling. He was exceedingly disgusted when I refused to buy Catasetums as a vegetable at any price! This may seem incomprehensible to you, but the pseudobulbs are full of a viscid juice, which shoemakers sometimes use instead of wax, and in Eastern Peru I have seen them used to seal letters instead of mucilage."

This viscid and slimy nature of the protoplasm and cell contents seems to be peculiarly characteristic of bulbous manocotyledons; in Dicotyledons it is much less common, being in that class principally represented by plants with milky juice, which is of a different nature. *N. E. Brown, Herbarium, Kew.*

Trees and Shrubs.

PYRUS TORMINALIS.

This strong-growing tree, with smooth leaves and fruits, and whitish blossom in umbels, is well-adapted for planting in gardens and pleasure-grounds, and at the edges of plantations. The seeds, which are borne in brown leather-coloured berries—which are not particularly handsome to look at, nor good eating in the raw state—make a very passable jam or marmalade, still not so good as that made from the fruits of Sorbus domestica, which latter may be eaten raw when they are bletted. These and other species of Sorbus, when once planted, propagate themselves by means of suckers and seeds, and the young plants do well as undergrowth where the top shade is not too dense, and is that of deciduous trees. They may be cut at intervals of a few years, like Chestnut and Ash in copses; or the plants may be cut to a given height, and maintained at that height by annual clipping, if it should not be considered desirable to let the tops grow up into the heads of overhanging trees.

SORBUS AUCUPARIA, and S. AMERICANA.

Everyone knows the Mountain Ash of Europe and Northern Asia, with its Cauliflower-like heads of white blooms, succeeded by scarlet fruits, which in seasons following warm autumns are really glorious objects in the garden, till the blackbirds and thrushes have devoured the fruits. There are several forms of the plant, as S. a. pendula, with hanging branches; S. a xanthocarpa, with yellow fruits; S. a. asplenifolia, with still more divided leaves; and a form with variegated leaves is also met with.

Sorbus americana, which comes from North America, has feathered leaves, with from five to seventeen divisions, long, and lanceolate, toothed at the edges. The buds are smooth, sticky, and the flowers are smaller than S. aucuparia, and also later. The berries are of the size of Peppercorns. A desirable tree. *F. M.*

BENTHAMIA FRAGIFERA.

A large tree of the Strawberry-fruited Benthamia has fruited freely in the Botanical Gardens, Birmingham, and of which I send you foliage and fruit; the latter not so well coloured now, as they are the last of the crop, and have been ripened under the shade of the foliage. In Curtis's *Botanical Magazine* for 1852 there is a coloured plate of the fruit and foliage of this plant, together with the following notes:—"A hardy shrub, no doubt, as Dr. Lindley designates this handsome plant; but it is only in the milder regions of the South-west of England and Ireland that we are privileged to see it flowering copiously, and bearing its beautiful looking fruit in the open air. . . . Dr. Wallich, who discovered it on Chandaghiry, in Nepaul, speaks of the tree as of the size of an Apple tree, and covered with yellow heads of scentless blooms in June." It was about this time of the year that it bloomed here, and the tree has borne a good crop of fruit for the first time this year. Mr. Latham has grown this specimen on from a small plant. *Visitor.*

Mr. Rashleigh also sends us from Cornwall ripe fruits of this singular shrub. A figure will be found at p. 728, 1880.

PYRUS PRUNIFOLIA.

This tree-like shrub is valuable for garden effects in summer, on account of its blood-red, scarlet, and sometimes blackish fruits, and in autumn for the beautiful tints its foliage assumes. The shrub grows either in bush form—that is, several stems springing from the root—or as a standard worked on the Crab stock, when it will reach, in good soil, a height of 25 feet. The leaves are long, oval in form, and abruptly pointed; the undersides in the young state being hairy; flowers white; fruit the size of a Walnut. The tree is met with in gardens under the names of P. sibirica, P. polonica, P. hybrida, and P. græca. *F. M.*

PTERIS CRETICA NOBILIS.

The accompanying illustration (fig. 78, p. 561) represents one of the most distinct of the numerous crested varieties of this useful Fern. It is dense and compact in habit, growing from about a foot to 18 inches high. The fronds stand up well; the pinnæ are short, and broadly crested, and of a bright fresh green colour. This variety originated with Mr. H. B. May, of Edmonton, who has also selected several other very pretty crested forms from among the numerous seedlings raised at his nursery. There are several other crested varieties of P. cretica, but they are not so numerous as those of Pteris serrulata, from which they differ in being of more erect growth. These, as well as the normal form, are very extensively grown for market work; in fact, P. cretica may be regarded as the most popular of all the Pterises, and is probably grown in larger quantities than any other Fern. Of the varieties with simple fronds P. c. Ouverardi is a valuable form. This has larger fronds than the type, and makes a bold and effective plant for decorative purposes. The variegated variety, P. c. albo-lineata, is another useful Pteris. There are some crested forms of this, P. c. Mayii being the best. This has been so often alluded to that it does not need any further recommendation. All the above varieties may be obtained from spores, and it is remarkable how little variation is found in large batches of seedlings. Of course they do vary to some extent, and occasionally a distinct variety occurs.

Orchid Notes and Gleanings.

CATTLEYA HARDYANA, *Williams.*

Several supposed natural hybrids between Cattleya Dowiana aurea and C. labiata Warscewiczii, or C. gigas, as it is usually called, have appeared in collections, and to them the name of C. Hardyana has been applied. Judging from descriptions, they are not all identical in colour, and perhaps some of them have the parentage inverted; but we are fortunate in knowing which is the original C. Hardyana, as a splendid portrait is given at t. 231 of the *Orchid Album*, from the original plant. It was from this that my knowledge of the plant was derived, until the other day, when a splendid raceme was sent by Mr. W. Holmes, gr. to G. Hardy Esq., of Pickering Lodge, Timperley, Cheshire, and from the original plant—the one originally described, figured, and also certificated by the Royal Horticultural Society. The colours are superb. Sepals and petals of a beautiful lilac-rose, the former faintly mottled, the latter veined with light yellow; disc of lip veined like C. Dowiana aurea, the apical half of the front lobe brilliant crimson-purple, and behind this a large clear yellow blotch on either side. I now think the plant noted by me at p. 493, on November 2 last, must be a hybrid derived from the same two parents, though so very different from the present one. This difference can well be expressed by saying that in C. Hardyana the labiata characters preponderate, while in the other, those of C. Dowiana are far the most strongly marked. Perhaps a case of reversed parentage, on which point evidence from our leading hybridists would be welcome.

LÆLIO-CATTLEYA × VICTORIA, *Rolfe.*

A fine raceme of this beautiful hybrid has been sent to Kew by Baron Schroder, of The Dell, Egham, Surrey, through Messrs. James Veitch & Sons, by whom it was raised. Previously it was only known to me by the short published description. Its parents are Lælia crispa and Lælio-Cattleya × Dominiana, the latter I suspect being the pollen parent. It is a grand thing, as would naturally be inferred from its name and parentage. The flowers are very large, the sepals and petals pale rosy-lilac in colour; about intermediate between those of its two parents. The lip has much of the character of the pollen parent, both in shape and colour. The front lobe is elliptical in shape, very much crisped, and of an intense rich purple, with somewhat darker nerves, and the margin shading off into violet. The disc is of a reddish-maroon colour, shading off into orange, and with white margins. The pollinia, as would naturally be expected, are very unequal. I have no notes of the vegetative organs of the plant, but suspect that they are more or less intermediate in character between those of its two parents.

OBERONIA ENSIFORMIS, *Lindl.*

The species of Oberonia are very rarely seen in gardens, and in spite of their remarkable habit and curious structure, must be placed under the heading of botanical orchids. Two of them, however, have found a place in the pages of the *Botanical Magazine*, and the present species is one of them, though under a different name from the one given above. A specimen has now flowered in the collection of Mr. W. Bull, at Chelsea, and has been sent to Kew for determination, with the information that it was imported from Assam. The plant bears longish, cylindrical spikes of small, orange-coloured flowers, very densely arranged, the petals and lip with minutely fringed margins. It is figured at t. 5056 of the *Botanical Magazine* as O. acaulis, Griff., but that species has proved to be distinct, and the one figured to belong to O. ensiformis, of Lindley. The name given in the "List of Garden Orchids" in these columns (October 22, 1881, p. 527), must therefore be altered as above. *R. A. Rolfe.*

HARDY FLORISTS' FLOWERS.

Auriculas have not had a very good time of it during the last six weeks. One of the best southern growers, writing to me recently, said that two-thirds of his plants had thrown up trusses of bloom, and that the remainder showed signs of doing the same; and my own are much like them; and no method of culture seems to alter it. The most vexatious part of it is, that none of these late autumn-flowering plants will give first-rate trusses when we want them to be at their best in April next year. A grower personally unknown to me wrote last week inquiring what he ought to do with his Auriculas, which were freely throwing up their trusses. Should he pinch them off? They must be removed; but there is much danger in doing so by snapping the stems through, as the broken part remaining may rot down, and carry destruction into the centre of the plant. The right way is to rub off the flower-buds from the top of the stem; in this way it does not rot, but gradually becomes yellow, dries up, and may then be pulled out. It may seem to some a trivial thing

describe how a flower-stem ought to be removed, it it is not so to those who may have paid a uinea and a half for a plant, and know that ey may endanger its life by wrong practices.

The atmosphere is excessively moist at this ason; further, the outer leaves continue to ecay; and if constant attention be not given to emove them as they decay, a valuable plant may uffer from this cause. Water no plants unless they re really dry at the roots; be careful not to stop it ver, and admit all the air possible at all times to he plants. In cold dense fogs, shut the frames up lose until the fogs pass away. We go over the lants as often as we can to remove decaying eaves, stir the surface-soil in the pots, and brush ff green-fly.



Fig. 78.—Pteris cretica nobilis. (see p. 560.)

Carnations, &c.

We potted up our collection of Carnations and Picotees during the last week in September, and the first in October; in the course of three or four weeks many of the leaves decay, and numbers of weeds grow in the pots, so we are now looking over the whole collection, cleaning them, and where any of the plants are infested with greenfly, dipping overhead in soft-soapy water. We grow and flower annually many hundreds of seedlings; these are all strong established plants now, and they do not require any attention except to keep them free from weeds, and also at this season especially to watch for slugs.

Before planting Carnations on new ground likely to contain wireworms, I would advise taking thick slices of Carrots into which a pointed stick should be inserted, and then the slices should be buried 2 or 3 inches deep in the earth, at intervals of 1 foot. The bait may be examined twice a week and the worms destroyed. When no more wireworms are found, the Carnations may be planted. Some persons plant out their Carnations and Picotees at this season, others pot them now and plant out in the spring. In wet clayey soils I should prefer spring planting, and would also dig plenty of mortar rubbish into the soil. Wet does more harm to the Carnation than frost.

The Pink

is a lovely garden flower, hardier than the Carnation, and flowers about a month earlier. I like to see the Pinks planted out early in October, as they have a good chance to get hold of the ground before sharp frosts set in. It is very annoying to see the plants thrown out of the ground, when sharp frosts are followed by thaws and sometimes heavy rains. This does not happen to well-established plants. It is necessary to look over the plants at intervals during the winter, and to press into the ground any that may be thrown out; also see that the enemies which attack the Carnation are not also making havoc with the Pinks. It is a good plan to have the space of ground upon which the Pinks are planted raised above the ground level, and made a trifle higher in the middle than at the sides, thus effectually preventing water standing round the base of the plants. This class of plants seems to do best on soils which are clayey; but with the addition of mortar rubbish, leaf-mould, or road-scrapings, to keep it open. The forcing Pinks require propagating much earlier in the season. We put in the Pink pipings in June or July; but the varieties for forcing are put in under glass in March or April. They are planted in the open garden in May, and produce great tufts of foliage by the end of September, when they are taken up and planted in 6 or 7-inch pots, according to their size. All of them should now be stored in cold frames, the earliest of them to be placed in the forcing-house about the middle of December; but at that early season they must not be forced in too great heat; it is better that they should be brought on very slowly until the days lengthen after Christmas. The plants started a month or two later always give the best results. *J. Douglas.*

Nursery Notes.

MR. CYPHER'S NURSERIES, CHELTENHAM.

Scarcely any man has become so famous within the past twenty-five years as a cultivator and exhibitor of plants generally as Mr. Cypher. Not content with an occasional display of his remarkable productions, he travels with them in all parts of the country, especially in the spring and summer months, and a glance at the report of the horticultural exhibitions as they occur, shows that he must possess one of the finest collections of exhibition plants in the country; and, although some of the specimens are fully fifty years old, they still exhibit a freshness and vigour often wanting in young specimens, betokening the great skill and patience in cultivation.

Crotons are found in great variety, and consisted of angustifolius, still regarded as one of the best; Countess, Sunset, Warrenii, Queen Victoria, mutabilis, Thomsoni, and others. These are grown in a temperature of nearly 90°, their heads being close up to the glass, therefore in the fullest sunshine, the air being in a state of semi-saturation in the growing season.

Giant specimens of Bougainvillea glabra, Clerodendrons, Anthuriums, a valuable collection, and among which were noticed a magnificent variety named Cypher, having a spathe brilliant in colour, and of remarkable size and substance. Among Allamandas, A. magnifica is quite distinct, and an improvement upon A. nobilis, but rather paler in colour, and possessing more uniformity in its flowers than that variety, while the white spots at the top of the tube are more distinct; and, should it prove equally free, it will certainly occupy a front place among these plants.

In the Orchid-houses are numerous plants, which, in other hands, are deemed unmanageable or difficult, notably Dendrobium Bensoniæ, respecting which the general opinion is that it will only produce flowers on imported plants, and rarely if ever afterwards, but which here grows and blooms freely. Some two or three years ago a consignment of very small pieces of this plant was received, the longest growths of which were only 3 inches in length; in the following year this length was trebled, and this present season the stems are fully 18 inches long. The plants occupy pans about 2 inches across, and are suspended to the rafters, and considerable importance is attached to these small pans for this species, inasmuch as the contents dry up quicker after being watered, and thereby the little amount of soil is kept in sweet condition. Dendrobium Bensoniæ delights in plenty of moisture when growing, and makes roots freely, the latter fact frequently being the cause of a larger pan being given them than is beneficial. Mr. Cypher is of opinion that too much root room is not needful, and that the soil becomes sour about the roots quickly, and the plants decline in health when such is afforded them. D. bigibbum was largely represented in the collection. It is one of the best for winter use. D. Dearii is much prized for free-flowering, and the enduring qualities of its flower.

D. Ainsworthi was also in splendid condition, as were plants of D. formosum on blocks and in pans. D. Leechianum and D. rhodostoma—the latter a very continuous bloomer, were also growing freely.

In one of the stoves, Oncidium Jonesianum was making fine growths, and others showing flower, and for which a long-continued season of rest and a quick season of growth is considered to be the best treatment. The Cattleya-house was crowded with large and small healthy specimens, but a fine plant, however, of C. Gaskelliana was going over—it had had thirty-four spikes of its charming flowers; and other smaller plants still carried flowers. Other species in flower were C. Loddigesii, C. speciosissima, and several plants of the fragrant C. eldorado alba, one of the prettiest of the genus.

On the western side of the Cattleya-house, suspended from the roof, were plants of Lælia anceps alba, many of them showing flower, and all rooting well. These had previously been grown in the Mexican-house, but were evidently improved by the change.

In the Mexican-house were noticeable fine plants of Cypripedium Sedeni superba, having fourteen spikes of flowers; a large batch of Odontoglossum grande, Epidendrum vitellinum, which had been flowering since May; Oncidium recurvum, and scores of other Orchids. Even the large Camellia-house had a share of the Orchids, for here I noted Oncidium Marshallianum, O. varicosum, O. Forbesii, with Cattleya citrina in quantity. *J.*

Plant Notes.

CEREUS TRIANGULARIS.

Like many other species of the genus, the above opens its flowers during that part of the day when the majority of garden visitors are absent, hence the name of Night-flowering Cacti. This being the case, it is only a privileged few who are fortunate enough to see them in all their splendour, and thereby are capable of forming an opinion as to their beauty. But they are worth that slight amount of exertion of going to visit them during the night, or just before daybreak. It is a well-marked species, and not easily mistaken when once seen, its largish triangular rambling stems, throwing out many adventitious roots, isolate it from the rest, making it easily recognisable. The stems reach almost an indefinite length, and possess a few short stiff spines springing from the abortive buds. It is very floriferous (twelve flowers have expanded in one night on a single plant), and scarcely fails to produce a rich crop of flowers, and sometimes two, during the year. The petals are white, consisting of some three rows, the sepals are of an amber colour, the lower ones being of a bronzy green. Measuring some of the flowers when fully open, I found them to exceed a foot in diameter; the length, taken from the base, about the same. Cuttings propagate easily by taking off pieces of the stem, from 1 to 2 feet in length; these, if potted and kept dry, will root in due season, and soon make specimens for flowering.

Our plants are in 14-inch pots, and in this way they take up but little space, their wants can be readily attended to, and it also checks the growth. When planted out, a good drained situation should be made, and the space in which it is to be accommodated pocketed off by a few bricks. They should be trained to a back wall, or fastened to a trellis, where they will receive an abundance of sunlight. By grafting other members of the family upon a good-sized plant, it is possible to have something to look forward to at various times of the year. The following have been found to succeed well, worked on to this species: — Phyllocacti, Cereus flagelliformis, and Epiphyllums. Amongst some of the most worthy that deserve cultivating, we might mention C. grandiflorus, a large flowering, pure white species, rather slow in growth, West Indies; C. nycticalus, white, Mexico; C. Macdonaldiæ, a very desirable plant; and C. speciosissimus. *W. Harrow, Botanic Garden, Cambridge.*

Chimaphila maculata.

This plant, known as the spotted Wintergreen, is a handsome subject for rockeries, the compact marbled foliage being particularly attractive during the winter months. Both this and its near ally, C. umbellata, have the reputation of being difficult to cultivate; but provided a shady situation and a proper soil in which to grow, and we have had them do very well. Our choice of a position is one facing north, sheltered on all sides, and the soil, which must be deep, consists of peat and sphagnum, equal parts, the surface covered with flat stones, to prevent evaporation. C. maculata is the handsomest in leaf; and which is dark green, marbled with white, It rarely exceeds 6 inches in height, compact growing, and most suitable for edges of bog beds. C. umbellata is a larger and more robust species, the leaves in whorls, dark shiny green, and very effective. Both are natives of America, producing their large reddish flowers throughout the summer.

THE GENUS KNIPHOFIA.

[See Supplementary Sheet.]

Having devoted special attention to these handsome plants for several years past, and having got together a collection of about forty of the best known species and varieties, I send you notes on some of the species and varieties which have bloomed, or will bloom, for me during the summer and autumn:—

1. K. præcox (true).—An apparently scarce and most distinct plant, of almost caulescent habit of growth; very strong-growing and hardy, and blooming during the month of May.

2. K. recurvata (Deleuil, of Marseilles).—Often sold under the name of præcox, but blooming about a month later, or during the month of June.

3. K. Uvaria floribunda (from Deleuil).—A very pretty and free-blooming form, blooming during June.

4. K. hybrida, Otto Mann.—A most beautiful, early-flowering hybrid, raised by W. Pfitzer, of Stuttgart, and with a distinct and peculiarly-shaped, elongated, oval head of light-coloured flowers.

5, 6, 7. Wilhelm Pfitzer, Henry Cannell, and Victor Lemoine.—Three fine large, bold, spiked hybrids, all raised and sent out to W. Pfitzer, of Stuttgart.

8. K. nobilis.—A fine hybrid, raised many years ago, by Herr Max Leichtlin, of Baden-Baden.

9. K. Saundersi, another fine hybrid from the same garden.

10. K. nobilis pallida.—A most beautiful lighter coloured form of No. 8, sent to me from a northern Irish nursery, but with whose origin I am not acquainted.

11. K. spectabilis.—A fine free blooming form of K. uvaria, sent to me by M. Krelage, of Haarlem.

12. K. hybrida Metzchyi.—A distinct and beautiful hybrid form, I believe, of German origin, but sent to be by M. Krelage, and showing the distinguishing characteristics of K. Leichtlini and K. comosa, between which it is probably a cross.

13. K. aurantiaca.—A fine deep orange-flowered form, from M. Krelage of Haarlem.

14. K. hybrida La Perle.—A most beautiful and distinct hybrid, raised by Herr Max Leichtlin.

15. K. hybrida Sceptre d'Or.—A beautiful and distinct hybrid of unfortunately somewhat delicate habit, and with flowers of the peculiar shade known as old gold, from the same raiser.

16. K. hybrida Canari.—Another most distinct hybrid from the same garden, with pale straw-coloured flowers.

17. K. hybrida Le Géant.—Another fine tall-growing but somewhat dull-coloured hybrid from the same garden.

18. K. hybrida John Waterer.—A most distinct form of, I believe, German origin, sent to me by W. Hans, of Herrnhut, Saxony, with peculiarly open flower scape, all showing colour at once, and almost, if not quite, identical with a form sent me many years ago under the erroneous name of Carnosa (which arose from the indistinct writing of a distinguished botanist), but which I have grown and distributed to friends under the provisional name of K. longicapa, from the unusual length of its fine flower heads.

19. K. hybrida John Benary.—A fine hybrid with deep sealing-wax-red flowers, and open spike raised, I believe, in Germany.

20. K. Burchelli.—A most distinct and brilliant-hued form, somewhat difficult to establish, sent to me from Kew, but with whose origin I am not acquainted.

21. K. Leichtlini distachya.—A most distinct and beautiful tall-growing form of the deciduous type form known as K. Leichtlini, raised and sent to me by Herr Max Leichtlin, of Baden-Baden, and often producing a second or supplementary flower-spike at base of the main flower-head; this is a vigorous grower and free bloomer, and should be in every collection.

22. K. hybrida corallina (from Deleuil, of Marseilles).—A most distinct and beautiful hybrid raised by the French nurseryman, from whom I received my plant, and the result of a cross effected by him between K. Macowani and K. aloides. This is a most bright and free blooming form, and must not be confounded with another hybrid of the same name, and, I believe, of German origin, which I have seen in flower at Kew, and consider quite distinct, although slightly inferior in brightness of colour.

23. K. Macowani.—A most beautiful dwarf growing species from the Cape, of most free blooming habit, but unfortunately delicate and hard to keep, a fine strong tuft of it having died in my garden last autumn, without any apparent cause after blooming most profusely and beautifully.

24. K. maxima globosa.—A fine globular-headed and very late blooming form, originating, I believe, as a chance seedling in the nursery of Mr. R. Smith, of Worcester.

25. K. grandis.—Another fine and very late blooming variety, closely allied to the last-named, of which it is probably one of the parents. This does not bloom till quite the end of the season, between October and November, according to situation and soil.

26. K. Leichtlini aurea.—A pretty light coloured form of the type raised and sent out last year by Herr Leichtlin.

27. K. natalensis.—This species produces a loose straggling scape of small dull pale brown flowers, and is I consider, horticulturally, quite worthless, and merely worth growing in botanic gardens as a distinct species.

The most distinct and handsome member of this family as far as foliage is concerned, is most undoubtedly K. Northiana, with large broad light green leaves, resembling those of one of the Agaves; the flower, however, is pale green, shading off to white, and horticulturally quite worthless, and merely of botanical interest. As a direct and interesting contrast to the last-named species, may be mentioned the curious little grassy-leaved Madagascar species, K. pallidiflora, with small spikes of white flowers somewhat resembling those of the Lily of the Valley, of this, which flowered at Kew for the first time last year, a figure is, I believe, in course of preparation for publication in the *Botanical Magazine.*

Another distinct and interesting species is K. comosa, which is like K. Leichtlini, also deciduous, and seems somewhat difficult to bloom, for though I have grown it for three years, and from its vigorous foliage it seems quite healthy, it has as yet shown no sign of flower. It has, however, bloomed well at Baden-Baden, and has been used by Herr Max Leichtlin in several of his cross-fertilisations from which he has raised so many beautiful varieties. *W. E. Gumbleton, Bellgrove, Queenstown, Co. Cork.*

Hybrid Kniphofias.

The hybrid Kniphofias I have raised this year are unlike in form and colour from anything hitherto seen. In colour they range from straw-yellow to blood-red, going through deep yellow, orange, and scarlet; in form they produce differently shaped spikes, some narrow, cylindrical, others ovoid; some having stamina protruding nearly an inch, others less so. I was enabled to raise these magnificent

crosses by having a complete collection, and using the Abyssinian K. comosa and Leichtlinii to cross with the species from the Cape. Other horticulturists have also tried their hands, but they crossed only the Cape species one with another, and thus they could not produce very distinct plants, though it is true that M. Deleuil's corallina× is a fine plant. My first success was K. Leichtlinii distachya×, and the hybrids which were sent out by M. Godefroy Lèbeuf; but those I now have raised are marked beauties. Whether it will be possible to get hybrids from the Madagascarian K. pallidiflora remains to be seen. Its flowers are pure white, but it is a small plant. There is, however, a wide field open to the hybridist, for apart from K. Northiæ and K. caulescens which may be tried, some other forms from Natal have reached Europe, and which may produce new forms. I suppose we shall not have to wait long till the gigantic K. andongensis will show its magnificent dimensions. *Max. Leichtlin, Baden Baden.*

Cultivation.—Kniphofias are Liliaceous plants, but instead of having fleshy leaves, they are furnished with long wavy grass-like leaves,which in the stronger growing species reach a length under cultivation of 7 feet. From the base of the leaves a tall scape is thrown up, surmounted with a rispe of pink,scarlet and orange coloured, and yellow flowers of many varying shades of colour. They are natives of Abyssinia and the Cape of Good Hope, but strange to say, they and their hybrids have been proved hardy in all the milder parts of Great Britain, and in Ireland, where the climate is generally suited to them. The name with which Tritoma is synonymous recalls the services of Dr. Kniphof of Erfurt, 1704—1763. The genus contains about fourteen species.

The more robust of the species and hybrids make excellent masses in the mixed border, or by themselves on the turf, delighting in a warm, deep, well-drained soil, and plenty of water in summer and autumn. Liquid manure is likewise of benefit if given early in the season—that is, before the bloom spikes appear; but its application should not be deferred till then, or repeated after these have shown themselves, or very late tender growth will result.

When these plants are grown on the lawn, where they look well in groups of three, five, or more, the grass should be kept clear of the plants; in fact each plant should be the centre of a circle of 2 feet to 3 feet in diameter, according to its size. By so doing the ground becomes warmer and better aerated than is possible when it is turf-covered, and manurial waterings may be given without causing rank growth in the surrounding turf-grasses.

Elevated on mounds, either single or grouped, is a good way to grow the plants in large gardens, and if an imposing-looking Pampas Grass or Arundo Donax be planted amongst them, the effect is still better.

Our illustration of K. caulescens is taken from a photograph obligingly communicated by Mr. Tillett of Sprowston, near Norwich.

Plants and Their Culture.

The Greenhouse.—Careful attention must be paid to the airing and watering of the plants; and, owing to the increased atmospheric moisture in the house and outside, much less water will be required by them; but if water be afforded, it should be freely. Watering ought to be done early in the day, so that the moisture and drip from the plants shall be dried up before closing time. Any plants recently potted should be placed at the warmer end of the house, and out of the reach of draughts. The ventilators must be used with judgment during frosty mornings, or when cold winds prevail; temperature 40° to 45° during the night in cold weather, allowing a rise of 7° to 10° during the day, and letting a little heat in the pipes during the morning, to dispel damp; and removing all decayed leaves, and keeping a sharp watch for mildew.

New Holland plants will need close attention in the matter of mildew, and flowers-of-sulphur should be dusted over affected plants. Give all plants as much space as is possible. Most of the Chrysanthemums are now in the conservatory, or in a separate house, where they will obtain more air than in the greenhouse. Late-flowering varieties should be supplied with some kind of fertiliser, to increase the size of blooms, and prolong their season. Many greenhouse plants are benefited by having a higher temperature maintained than that given above, and it will be necessary to grow these late flowerers in a separate house.

Bouvardias claim the first place at this season, and should have a temperature of 55° at night, and 10° higher in the daytime, with a free circulation of air. We ventilate our plants during the night, and give them abundantly of clear, weak liquid manure, which has a small quantity of soot stirred into it. Succession plants are placed in a frame in a 10° lower night temperature; they had been in the open air to the last moment that it was safe.

Early flowering Cinerarias may have a little more warmth than that of the ordinary greenhouse to bring them into bloom, and greenfly must be destroyed by fumigation. The zonal Pelargoniums for the winter bloom will require a pit kept at about 55° to grow them well, and get them to produce bloom abundantly. They should be kept near the glass, and watered sometimes with weak liquid manure. The flowers will last a long time when cut, if the petals are fixed with gum before being set up.

Azaleas now losing some of their leaves will need a slight dewing over on fine mornings if in a dry house, and thrips got rid of by syringing with tobacco water and soft soap. All tying of these plants should now be finished,decayed sticks being carefully removed from the soil. Azaleas for cutting are usually kept in shape by the process of cutting off the flowers, and only strong shoots will require ties.

Herbaceous Calceolarias will require a shift before they get pot-bound, or aphis will obtain a hold on them; and, as a precaution, they should be dipped in weak tobacco water a few hours before potting them. A large shift should not be given. Turfy loam should be used for potting, say three parts of it to one of leaf mould, a little decayed manure and coarse sand, and employing a larger proportion of loam and less leaf mould as the plants increase in size.

Mignonette sown early for autumn flowers will have filled their pots with roots, and will take liquid manure freely. Stand the plants close to the glass; those plants intended for a later supply of flowers may be repotted, using some old plaster broken finely in the compost. Lilium lancifolium and L. auratum requiring larger pots may also be shifted. Most of the lancifoliums will have filled their pots with new roots, and these roots must be carefully preserved. Place the pots in a cold frame, giving just sufficient water till new growth is made to keep them moist, and using good loam in the compost. *Geo. Wythes, Syon House, Brentford.*

The Flower Garden.

The Flower Beds.—These should be in their winter garb, and all small shrubs, Sedums, spring flowering plants and bulbs, if not planted, should have immediate attention. When the quantity of plants be short, then make use of them accordingly, only plant something to cover the bare earth. Cocoa fibre refuse is really indispensable where spring flowering plants and bulbs are employed, and it looks well at all times. In one of our flower borders is a series of long narrow beds, which would now be bare but for a wide edging of Sedum glaucum that will remain the whole winter, and the centres are filled with small Golden Yews, and cocoa fibre covers the soil. This instance shows how useful the material is where perfect neatness is desired.

Planting Shrubs, &c.—We could not have had better weather for this kind of work than that which has prevailed of late, and as this is the best season to plant, those who have such work to do should lose no opportunity of getting it completed. Roses transplant now better than at any other season, and I have remarked that in a severe winter there are fewer deaths amongst recently transplanted Roses than amongst established plants. The reason of this, I think, is that the check the plants get by removal matures the wood. I mention this circumstance to encourage the inexperienced to plant now and onwards to December. By the application of a little long litter or bracken, there really is no risk, and the plants may be expected to flower well the next season; whilst those planted in spring, make only a bad attempt at doing so.

Evergreen Shrubs may be successfully removed at east six months out of the twelve, still, there is a best time, and in my opinion that time is during October and November, if weather conditions and soil are favourable, and next to these months February and March. [And even later. Ed.] Shrubs transplanted at the latter period need more attention to be given to mulching and watering during dry weather, than do autumn planted, and on this account my advice is to plant now, and not only shrubs but trees of every kind. The tints of deciduous subjects this autumn were more beautiful hereabouts than has been the case for many years past. The regret was natural that comparatively so few are planted now-a-days, apart from avenue and street trees, which features have certainly much increased. I question whether a newly laid out place of any extent, could be found, where deciduous trees have been used to the same extent as evergreen, and yet, what a wealth of beauty there is to be found amongst the Oaks, Chestnuts, Maples, Catalpas, the Oriental Plane, and the Tulip-tree, whose dying foliage is of a golden colour. For contrast with those of lighter tints, there was the deep coppery-bronze of the purple Beech, and the brighter purple of Prunus Pissardi, a shrub but little known, though worthy of conspicuous positions in pleasure-grounds. I close by saying, plant at the present season, and, where space admits of it, plant deciduous trees in at least as large numbers as evergreens.

General Work.—The clearing up of falling leaves, the rolling of lawns, levelling and relaying of turf, and as soon as all the leaves have fallen and are cleared away, there should be a final sweep over the lawn, and then repeated rollings, which do more towards the production of a fine close sward than any artificial manurial dressings which can be given. During mild weather, bedding plants in pits and frames should have full exposure, and precautions should be taken to prevent losses by mildew by the free use of flowers-of-sulphur on its appearance. *W. Wildsmith, Heckfield Place, Hants.*

The Hardy Fruit Garden.

Fruit-tree Planting.—Whilst fine weather lasts, the planting of all kinds of fruit trees may be pushed on, so that the greater part may be finished within the present month. If the soil be of a sticky, clayey nature, some fine earth should be scattered among the roots, even if only a shovelful of leaf-mould or sifted potting-shed refuse. When selecting a site for orchards of mixed fruits, the ground should be sheltered from the west, north, and east by rising ground or plantations of timber trees. If Damsons are planted, these should occupy exposed sides, and may be planted sufficiently close to be of themselves a shelter for the interior of the orchard. Farleigh Prolific is the Damson most preferred in Kent, then the Blue Prolific. All newly-planted standards must at once be afforded some kind of temporary fastening, to prevent wind-rocking, &c.; but the proper staking of the trees should be left until the late winter, so as to allow of the soil settling.

Cordons.—These and bush-trained fruits produce the finest fruit, and it is from such that the fine examples seen at exhibitions come. Cordons, if meant to be trained horizontally, should be planted from 10 inches to 1 foot distant from the walks, and if 14 inches from the ground, they form a suitable margin. Large showy varieties of fruits should be selected to plant in such positions in preference to those which are small; but before planting, a stout iron wire should be stretched along the line intended to be planted, and made fast at each end of the required height, using iron supports for the purpose, and others of a similar kind at intervals, and at one of the ends a *raidisseur* should be fixed that the wire may be tightened. Double horizontal-trained cordons should be planted 10 feet apart, and single ones at 6 to 8 feet. Bushes may be planted at intervals all round the vegetable quarters, at a reasonable distance from the walk, and not so near to each other as to form a thicket when they have been planted a few years. The following are the names of a few choice showy kinds:—Alexander, Beauty of Kent, Belle Dubois, Ecklinville Seedling, Warner's King, Hollandbury, King of Tomkin's County, Mère de Ménage, Peasgood's Nonsuch, Potts' Seedling, Stirling Castle, Betty Geeson, Stone's, Tower of Glamis, and Hawthornden. *H. Markham, Mereworth Castle, Maidstone.*

APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

TUESDAY,	Nov. 19	Cardiff (two days). Eastbourne (two days). Green Street (two days). Hartlepool (two days). Liverpool Horticultural (two days). Manchester (two days). Oxford. Twickenham (two days). Watford (two days). Winchester (two days).
WEDNESDAY,	Nov. 20	Bedford (two days). Birmingham (two days). Bristol (two days). Rugby (two days). Southgate (two days). Wimbledon (two days). York Florists' (three days).
THURSDAY,	Nov. 21	Hull and National Chrysanthemum, in conjunction (two days). Scottish Horticultural (two days).
FRIDAY,	Nov. 22	Chorley (two days). Stockport (two days).
SATURDAY,	Nov. 23	—Batley.

SALES

MONDAY,	Nov. 18	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms. Nursery Stock, at the Eltham Nursery, by Protheroe & Morris (three days).
TUESDAY,	Nov. 19	Greenhouse Plants, Roses, &c., at the City Auction Rooms, by Protheroe & Morris. Clearance of Nursery Stock, at the Piltdown Nurseries, Maresfield, by Protheroe & Morris (two days). Lilium auratum, at Protheroe & Morris' Rooms.
WEDNESDAY,	Nov. 20	Roses, Fruit Trees, Shrubs, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms. Plants, Bulbs, &c., at Protheroe & Morris' Rooms.
THURSDAY,	Nov. 21	10,000 Lilium auratum, &c., from Japan, Dutch Bulbs, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	Nov. 22	Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	Nov. 23	Roses, Fruit Trees, Border Plants, Shrubs, Bulbs, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—41°.7.

Railway Rates.

THE opening of the case on behalf of the London and North-Western Railway Company by Mr. POPE, Q.C., was interesting, inasmuch as it disclosed for the first time the contentions which will be sought to be made good by the railway companies. It dealt not only with the history of railway companies as common carriers, but also with the question of terminal charges, and the principle on which they are sought to be charged. We shall, at the proper time, call the attention of our readers to the latter subject, but at present we will only refer to the historical branch of the subject. There are upwards of 900 Acts of Parliament which deal with the existing classifications and maximum rates, and the object of the proceedings under the Railway and Canal Traffic Act of 1888 is to consolidate them. It will, therefore, be seen that the questions which have necessitated so much recourse to Acts of Parliament must have been such as have from time to time considerably increased in importance as the railway systems of the United Kingdom have developed. Whether the inquiry now being held will have the desired effect of creating a uniform scheme for the control of the 976 railway companies with their total mileage of 19,578 miles, and total capital of 846 millions, remains to be seen, but for the sake of traders we hope it will.

When railway companies were in their infancy, it is contended that they were not intended to be common carriers to whom the traders could as of right appeal, but they were merely the owners of the road, and as such were entitled (according to the earlier Acts of Parliament) to charge a rate for the use of their road. Originally the bargain for the conveyance of merchandise was made with the firms of carriers, such as CHAPLIN & HORNE or PICKFORD'S, who paid the railway companies for the use of their railway, and made what charges for their services as carriers (without any restraint as to maximum charges) that they could obtain from the general public. Subsequent Acts of Parliament provided for the railway companies becoming common carriers of such goods as they chose, but of none others. Hence it is that in the classifications hitherto used by the railway companies, contain, comparatively speaking, but few articles of commerce in respect of which the public could demand the conveyance by the railway companies as common carriers. It is true other articles of commerce were carried by the railway companies, but in respect of these they could dictate their own terms. This state of things continued up to the passing of the Railway and Canal Traffic Act of 1854, which cast upon railway companies the additional liability of providing reasonable facilities for the receiving and forwarding of merchandise for which they were not previously responsible; but it would appear from the judgment of the Court of Appeal in a case of DIXON *v.* the Great Northern Railway Company, that railway companies were nevertheless not compelled to be common carriers if they did not choose to accept that responsibility, although they were bound to supply the facilities before mentioned.

It would serve no useful purpose if we were to trace the gradual increase of responsibility placed on the railway companies by the various Acts of Parliament obtained by them. Suffice it to say, that every special Act of Parliament, subsequent to the Act of 1854, incorporated the clauses of that Act with reference to the right of railway companies to become common carriers of merchandise. It is now contended by the companies that these powers are not compulsory, but merely optional, and that if they preferred to revert to the old system, they could do so. They place the matter rather on the ground of expediency; that it is preferable, as far as possible, that common carrying should be performed by one agency, and that it is to the common interests of both railway companies and traders that this should be done, and that such agency should be allowed a fair and reasonable profit on the work done. With this view, they have submitted their revised classifications and schedules of maximum charges, and they claim that they have included in such classifications every known description of merchandise. When these classifications and schedules have been settled by the tribunal now sitting, they will have the same force as an Act of Parliament; and, apart from any other consideration, traders will have the satisfaction of knowing that they, at all events, have a classification and schedule of charges which consolidates all others which have been in force since the commencement of railway interests. For this alone they will no doubt be grateful.

CHRYSANTHEMUM MRS. ALPHEUS HARDY.—Owing to an unfortunate accident whilst in the press, and which it was impossible to rectify at the time, the woodcut of the above novelty was broken into two pieces, so that a considerable number of the later-struck copies appear with a faulty engraving.

LINNEAN SOCIETY.—At the evening meeting to be held on the 21st inst., at 8 P.M., the following papers will be read: —1, "External Anatomical Characters Indicating Sex in Chrysalids, and Development of the Azygos oviduct and its Accessory Organs in Vanessa Io," by Prof. W. HATCHETT JACKSON, F.L.S.; 2, "Anatomy of Lepidoptera," by Mr. EDW. B. POULTON, F.L.S.; 3, "Lepidoptera of Ichang, N. China," by Mr. John H. LEECH, F.L.S.

"KEW BULLETIN."—The November number contains the Phylloxera regulations at the Cape, already alluded to in these columns; an article on the collection and preservation of fleshy fungi, by Dr. COOKE; notes on the Oil-Palm (Elaeis guineensis) in Labuan, in which the unfortunate consequences of a "solution of continuity," or change of policy, when a new governor is appointed, are commented on. The Oil-Palm was introduced into Labuan several years ago with successful results, but the trees under a new *régime* were grubbed up, and the work has to be begun again.

GARDENERS' ORPHAN FUND.—The concert recently held in the Vestry Hall, Chiswick, in aid of the above admirable Fund, resulted in a sum of about £11, and to which the Chiswick Gardeners' Mutual Improvement Society has added a further sum, so as to bring it up to £12. Mention should be made of Mr. J. BARRY, of the Royal Horticultural Society, who has been made a life member of the Gardeners' Orphan Fund, in recognition of his having disposed of the greatest number of concert admission tickets.

BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—At the meeting of this Society, held on the 12th inst., Mr. J. UDALE, Elford Hall Gardens, Tamworth, gave a most interesting paper on "Select Annuals for Stove and Greenhouse," and the following plants were specially named, viz.:—Thunbergia alata and varieties, advocating a natural growth without sticks, either for pots or baskets, and to sow the seed in shallow boxes in light sandy soil; Martynia fragrans, sowing from February to April, sown in light soil, and covered to an inch in depth and placed in a warm-house; Celosia pyramidalis plumosus varieties, grown in good loam, cow manure leaf-soil, and sand; Torenia asiatica, a stove perennial, but accommodating itself to annual treatment T. Ballioni, and T. Fournieri, both stove annuals requiring soil of a porous nature, very good drainage, and the precaution not to water them too much. Other annuals named were Didiscus cœruleus, Browallia elata, a lovely bright blue warm-house annual, too little grown; Nierembergia gracilis, a well-known pretty drooping plant; Balsams, in variety; Mignonette in variety, and Zea japonica variegata (the variegated Maize) was recommended for its ornamental character. Messrs. COOPER and SPINKS, who remarked that unless the seedling plants throw the shoots from the seed leaves, good pyramidal plants are seldom obtained. Mr. HUGHES, who stated that a gardener's great difficulty was in producing seed of a first-class strain. Mr. HARRIS asked Mr. UDALE if he recommended the removal of the early blooms, as many made a point of doing, and Mr. UDALE replied that he did not advocate it. Mr. CROOK gave some practical hints as to the culture of the Mignonette.

NEW PUBLIC GARDEN IN LONDON.—The Duke of WESTMINSTER on Saturday the 9th inst., threw open to the public a garden in Duke Street, Grosvenor Square, laid out by him on part of his estate from which old worn-out tenements had been removed. It comprises a little more than one-third of an acre, and consists of turf planted with Plane trees, and is furnished with broad asphalted paths. In the gardens are several seats, including a covered seat in the centre. At the eastern end is a drinking fountain, accessible both from the garden and from the pavement of Duke Street. This open space is part of a general scheme of improvement which



GROUP OF TRITOMA CAULESCENS.

embraces also the erection, by the Improved Industrial Dwellings Company, under building leases from the Duke, of large blocks of working-class dwellings, which will accommodate some hundreds more persons than the improvement will have displaced.

Presentation to Mr. Ernest Benary.—On Sunday last, the 10th inst., this well-known German seed merchant completed the 70th year of his age, and the 50th year of his connection with the large business carried on at Erfurt. His two sons made their father a present of an album containing the portraits of many of those in the United Kingdom who had done business with him for years past. Some of the leading seed firms in this country took advantage of the occasion to present Mr. Ernest Benary with a congratulatory address as follows:—"Dear Sir,—We, whose names are appended, having enjoyed the pleasure of personal friendship and acquaintance with you, and had business transactions with your firm for many years past, desire to offer you our hearty congratulations on attaining your seventieth birthday. We desire to express on behalf of a numerous body of friends and correspondents in the United Kingdom, the great respect and esteem in which you are held, and our high sense of the honourable manner in which you have conducted the business commenced by you fifty years ago. Though you have reached the age which is regarded as the allotted space of human life, we trust you will be spared for years to come in health and strength to enjoy in honoured old age the continued friendship of ——." This was signed by the representatives of twenty-one houses of business. The address was encircled by a very richly illuminated gold border, relieved with floriated scrolls in beautifully toned and harmonized tints of red and blue; the Arms of England and Germany in oval shields, surmounted the address, and to correspond with this, at the bottom was an hour-glass enwreathed with ivy, typifying age encircled by friendship. At the sides were two prettily-bordered panels, with the dates November 10, 1819, and November 10, 1889. The designing throughout was most artistic, the colours employed being perfectly harmonized, and the result worthily maintaining the reputation of the eminent firm of Messrs. R. & S. Garraud & Co., the Crown Jewellers of the Haymarket, London, who executed the work. A telegram was received from Mr. John Benary, of Erfurt, on the evening of the 10th inst., expressing the high gratification the receipt of the address had afforded his father.

The Chiswick Chrysanthemum Show and Conference on the 5th and 6th inst.—The following Certificates of Merit to appliances were awarded:—To Mr. F. Jameson, for a spring cup-raiser, and for a name-holder; and to Mr. Harland, for a cup-raiser.

Scottish Meteorological Society.—The *Journal* for the year 1888 contains a valuable paper on the Management of ships in hurricanes in the Southern Indian Ocean, and on the Temperature of the surface of the sea on the east coast of Scotland. Mr. Dickson has an interesting paper on the weather folk-lore of Scottish fishermen, in the course of which he mentions that the negroes in the United States have a proverb to the effect that "if de sun git up very early in the morning, and go to bed before he git up, it's a sign it rains before soon (*sic*)"! The allusion is to a period of light in very early morning, followed by a short period of darkness before actual day-break. The usual tabular record of meteorological observations in various parts of Scotland is given.

The Black Hamburgh has long asserted its position as the gardener's Grape, and as a further proof of its power of adaptation and staying powers, we note that Mr. W. Gollan, the Director of the Saharunpur Botanic Garden says, that it is the only variety that ripens fair-sized bunches, and is an "all-round good variety," being also the only English hot-house Grape recommended for general cultivation in Italy.

Orchids at John Laing & Sons' Nurseries, Forest Hill, S.E.—Those of our readers who live in the neighbourhood of London will be interested to know that the undermentioned species and varieties of Orchids are now in flower at the above nurseries:—Cattleya exoniensis (true); C. Bowringeana; Cypripedium Harrisianum (fine); C. Haynaldianum; C. insigne; C. i. albo-marginata; C. i. sylhetense; C. Sedeni; Dendrobium Jamesianum; Masdevallia candida; M. Veitchi; Oncidium Forbesii; O. ornithorhynchum; O. tigrinum; O. Wentworthianum; Odontoglossum Alexandræ; O. constrictum; O. fragrans; O. grande; O. Insleayii; O. Œrstedi majus.

"Fruit-Farm Review."—We note the publication of the first issue of this Journal, devoted to the interest of fruit and flower-culture from a commercial point of view. The paper is well got up, and the articles are interesting, and to the point.

The Clyde Disaster.—In addition to the lists of subscriptions already published in these columns, the following sums have been given or promised, bringing up the total to upwards of £363.

	£	s.	d.
Arthur Baxter, Esq., Hutton	1	1	0
Mr. J. Woolford, Reading	0	2	6
Jos. S. Hurst, Esq., Ripon	2	2	0
Mr. T. Paterson, Reading	0	2	6
Geo. Wood, Esq. ...	0	10	6
Reginald Young, Esq.	1	1	0
H. Greenfield, Esq. ...	10	0	0
Mr. T. Todman ...	1	1	0
Mr. Geo. Marriott ...	1	1	0
Mr. G. T. White ...	1	1	0
G. B.	0	5	0
Mr. Jos. Bates, Oxford Market, Oxford ...	1	1	0
Mr. C. Canham ...	0	10	6
Tommy	0	5	0
G. H. Baxter, Esq., Hutton	1	1	0
Mr. Chas. Woolford, Birmingham ...	0	10	6
Messrs. Crocker, Sons, & Co.	1	1	0
F. G. Arbuthnot, Esq.	1	1	0
G. C. Raphael, Esq. ...	10	0	0
Jas. Buchanan, Esq., Edinburgh	5	5	0
— Ryder, Esq., Streatham Hill	1	1	0

L'Orchidéenne.—The thirteenth meeting of the Society took place on Sunday, the 10th inst., in the central pavilion of L'Horticulture Internationale at Brussels. The President, M. G. Warocqué, showed a specimen of Vanda Lowii 2.50 m. in height, with fifty-three leaves, four flower-spikes 3.50 m. long, bearing 147 flowers of large size; Cattleya maxima var. Malouana, and Odontoglossum crispum var. Madame Lucien Linden. Mr. Wallaert showed Miltonia Blunti var. Lubbersiana. M. de la Devansaye sent a flower-spike of the rare Vanda suavis Hrubyana. Count de Bousies sent Cypripedium Harrisianum with fifty flowers. Other exhibitors were MM. Linden, Van Imschoot, Hye-Leysen, Mitaux, Vervaet & Co., Peeters and Block.

A First-class Diploma of Honour was awarded to Odontoglossum sp., shown by M. Hye-Leysen.

First-class Certificates of Merit to Odontoglossum crispum var. Madame Lucien Linden, and to Cattleya maxima var. Malouana, from M. Warocqué; and to an Odontoglossum shown by M. J. Hye-Leysen.

Second-class Certificates of Merit were awarded to Miltonia Blunti var. Lubbersiana, shown by M. Wallaert; Odontoglossum madrense, by M. Linden; Cattleya labiata rubra, by Mr. Peeters; Odontoglossum Coradinei, by Madame Block; and to Oncidium Warocqueanum, shown by Mr. Peeters.

First-class Cultural Certificates were awarded to M. Vanda Lowi, shown by M. Warocqué, by acclamation; and to Cypripedium Harrisianum, by M. le Comte de Bousies.

Seed Harvest of 1889.—Messrs. J. Carter & Co., in their report, state that Peas are generally scarcer this year than last. The English crop is extremely short, and American and New Zealand advices are of a similar character. Broad Beans are a full crop, but good, bright level samples are not plentiful; Runner Beans, notwithstanding the mild autumn, do not promise to be above the average. The Onion crop is practically a failure, both in England and on the Continent. Cabbage seed will prove a short crop, and the Carrot seed crop will come out short, the wet weather that has attended the ripening of the seed being very destructive. The Potato crop, notwithstanding the ravages of disease amongst certain sorts in some districts, promises to be a very good one generally, and moderate prices may be expected to rule for a considerable time.

A New Park for London.—The northern suburbs of London will shortly be enriched by a fine park, munificently presented, as was stated by Lord Rosebery at the London County Council on Tuesday last, by Sir Sydney H. Waterlow. In a letter addressed to the Council, the donor remarked:—

"On the southern slope of Highgate Hill, in the parish of St. Pancras, I own an estate of nearly 29 acres in extent, which was for many years my own home. This property, if judiciously laid out, would, I think, make an excellent public park for the north of London. The grounds are undulating, well-timbered with Oaks, old Cedars of Lebanon, and many other well-grown trees and shrubs. There is also 1½ acre of ornamental water, supplied from natural springs. The land is freehold, with the exception of 2¾ acres held on a long lease, of which 35½ years are unexpired. It is bounded almost entirely by public roads, and a public footpath."

The land is near to the estate of another benefactor of London—Lady Burdett-Coutts.

Stock-taking: October.—In the Returns of the Board of Trade for September, the "decrease" column in the "summary" table was a blank; in the returns for last month there are two items of decrease to note—one in food (§ II.), the other in metals. Our usual extracts from the table noted are as follows:—

	1888.	1889.	Difference.
	£.	£.	£.
Total value of imports	35,022,135	38,195,166	+3,173,031
§II.—(A.) Articles of food and drink—duty free	12,359,622	11,663,979	—695,643
(B.) — do., dutiable	2,805,500	3,232,272	+426,772
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	4,883,044	6,773,803	+1,890,759
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	4,157,309	4,735,798	+578,489
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,119,560	1,352,033	+232,473

So much for the "imports from foreign countries and British possessions." As it would be almost unconstitutional to omit mention of chemicals, we may observe that they loom very large for October. Annexed are the usual excerpts from the general tables in connection with fruits, Potatos, &c.:—

		1888.	1889.	Difference
§ II. Fruit:—				
Apples, raw ...	... bush.	779,572	684,812	—94,760
Unenumerated, raw ...	,,	709,549	409,638	—299,911
Onions	,,	586,331	525,608	—60,723
Potatos	cwt.	61,311	17,694	—43,617
Vegetables, raw, unenumerated	Value	£51,166	£49,758	—£1,408

The grower at home may note with satisfaction that "minus has it" in the above selection.

Hammersmith Horticultural Society.—The annual exhibition of this suburban society took place on the 12th inst., and proved to be a very creditable affair. The group of Chrysanthemums which gained 1st prize was contributed by Mr. C. Padley, gr. to R. L. Cosh, Esq., Rupert House, Chiswick. A very fine bank of plants not for competition was sent by Mr. M. T. May, gr. to the Marquis

of Bute, Chiswick House. A beautiful non-competitive group of Orchids in flower was shown by the President of the Society, F. G. Tautz, Esq., gardener Mr. J. C. Cowley. Primulas in admirable condition were shown by Mr. Robert Aitken, gr. to J. J. Ford, Esq., Park Side; while fruit was well shown by Mr. John Addison, gr. to Mrs. Lloyd, Merton Lodge, Chiswick.

Nepenthes Burkeii.—In our recent description of this interesting and attractive novelty, see p. 492, fig. 69, we stated that it was obtained from Borneo. Messrs. Veitch have since discovered that this statement was incorrect, and that the plant was really introduced by Burke from the Philippine Islands.

Scottish Horticultural Association (*November* 5).—In our last issue we alluded to a paper on "Fruit Tree Borders," read by Mr. Wheeton, and of which the following is a *resumé*:—He criticised the prevailing practice of making fruit borders, condemned it as being costly, unsatisfactory, and inadequate in result, and consequently restrictive of progress in the extension of fruit-growing. He recommended a simpler method of making borders, which, while he did not claim for it that it was new, or practised exclusively by himself, was, he considered, more economical, durable, and satisfactory. This consisted in laying the turf layer on layer, grass side down, as cut from the field fresh, and without chopping, or other preparatory treatment, adding between each layer crushed bones, charcoal, or such other material as was considered necessary in the case. A border made in this way, he contended, was more perfect and durable in its mechanical condition, and was, therefore, more receptive of benefit from manurial surface applications, when they became necessary. In the discussion which followed, in which Messrs. Dunn, Carmichael, McKenzie, Davidson, and others, took part, it was held that the question of costly preparation and composts was a great bar to the extension of fruit growing in this country; and the opinion was general, that, given a fairly favourable soil for fruit culture, sufficiently drained, and annual surface dressings, were more rational than the expensive preliminaries generally recommended and practised.

The Birmingham Chrysanthemum Exhibition will take place on November 20 and 21, when the following large prizes will be competed for, open to all:—For forty-eight blooms, twenty-four incurved, and twenty-four Japanese, distinct: 1st prize, £25; 2nd prize, £15; 3rd prize, £7; 4th prize, £4; 5th prize, £2; 6th prize, £1 10*s*. These prizes are offered in commemoration of the Centenary of the Chrysanthemum.

Vriesea mariæ ×.—A specimen of this handsome hybrid was shown at the Chrysanthemum Conference at Chiswick last week, where its merits were somewhat overshadowed by the profusion of aspiring Composites. The plant in question is, however, so handsome, that it is sure to make its way, and therefore we deem it of interest to our readers to call attention to the coloured figure that occurs in the last number of the *Journal of the National Horticultural Society of France*. According to the account given by M. Duchartre, the plant was raised by M. Albert Truffaut out of V. psittacina var. brachystachys by the pollen of V. Barillet. The object of the cross was to unite in one type the elegant inflorescence of the female parent and the rapidity and freedom of growth characteristic of the male. This result has been obtained. The hybrid has flowered two years only after germination, and has retained the brilliant colouring of V. brachystachys. The leaves are tufted, and from their centre uprises a flat dagger-like spike of densely-packed boat-shaped bracts, each one crimson at the base, golden-yellow at the free ends, and protecting a yellow flower. Incidentally, M. Duchartre tells us that we should write Vriesea not Vriesia, in which point we concur, and further expresses his opinion that it is desirable to retain Vriesea as distinct from Tillandsia, under which latter genus it is placed by Bentham and Hooker and Baker. While expressing no opinion on the botanical question, there is no doubt that, for horticultural purposes, it is more convenient to retain the genus Vriesea as Lindley constituted it.

SCHOOL BOTANICAL GARDENS.*

The following paper, based upon the writer's experience in the construction of certain school botanical Gardens, is brought before the British Association chiefly with the view to call attention to the readiness with which such gardens may be constructed at a very slight cost. Reference is also briefly made to the practical study of botany as a form of education which may be adopted with advantage in the training of even the youngest children. The educational value of such objective study of elementary science is urged; certain recent criticisms of our present methods of teaching, made by Professor Huxley and others, being instanced in proof that serious defects exist in our generally didactic system of education.

Notes upon the methods of practical study, and references to the literature of this subject, are also given; but it is rather the author's aim to bring forward details which shall encourage the construction of gardens as aids to teaching, where it is already engaged in, than to insist anew upon the value of any study of elementary science.

* A paper read before the British Association at Newcastle-on-Tyne, by Mr. P. Sewell.

The garden to which we would first call attention in detail is a small one laid out two years ago, in a boarding school (Merchiston Castle), near Edinburgh. The whole area of this garden (fig. 79) is not more than 70 by 60 feet, and its plan is the simplest possible, viz., regular rows of beds, 4 feet in width, separated from one another by narrow gravel walks.* The whole garden is shut off by close iron railings from a cricket practice-ground, of which, originally, it formed a part. At one end is a small general collection of rock plants, where alpine rarities (among them Edelweiss and Linnæa) were this year flourishing. The whole garden last July was one gay mass of flowers; over 100 out of the 150 or more species with which it was originally stocked were in bloom. Although such profusion was highly attractive, Mr. W. J. Mabbott, B.Sc., the Science Master at the school, considers that sixty to one hundred plants are quite sufficient for such a garden, and that a larger number entails a needless amount of labour upon those boys who have been appointed curators. Of course the points to be gained are, that there shall be a considerable supply for class purposes of the few types especially studied, and also that flowers representing the various orders shall be forthcoming at different times of the year. The types of the different natural orders should be species which have as little tendency to variation as is possible.

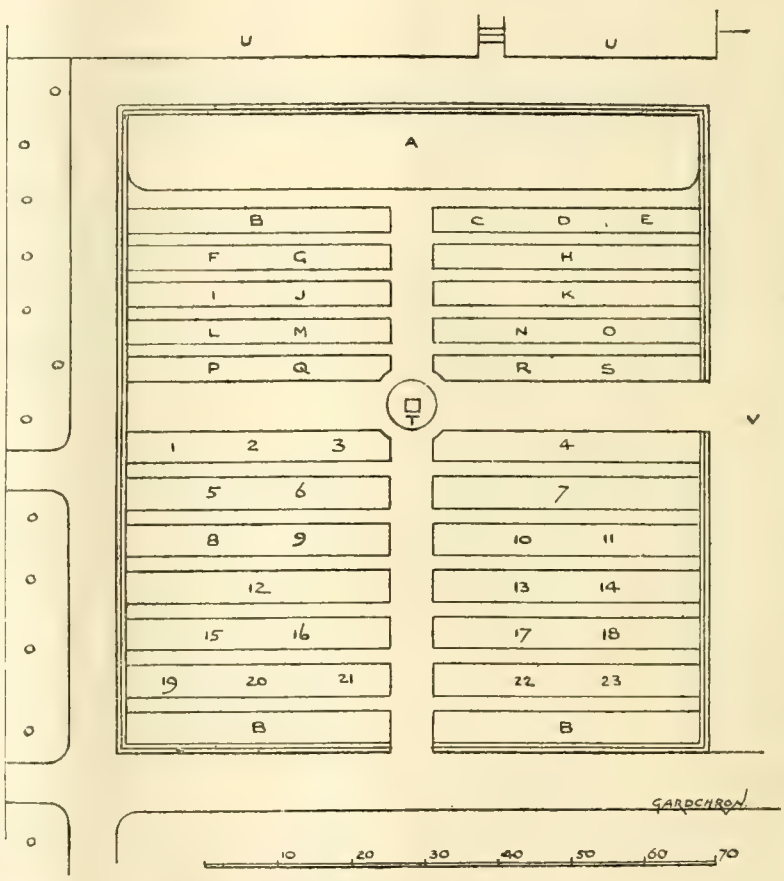


Fig. 79.—Plan of Merchiston School Garden.

References:—A, Rock Plants; B, B, B, General Collection; C, D, E, Rubiaceæ, Dipsaceæ, Valarianaceæ; F, G, Gramineæ, Cyperaceæ; H, Compositæ; I, J, Juncaceæ, Liliaceæ; K, Umbelliferæ; L, M, Iridaceæ, Amaryllidaceæ; N, O, Caprifoliaceæ, Onagraceæ; P, Q, Ericaceæ, Campanulaceæ; R, S, Saxifragaceæ, Ribes; T, Sedum. 1, 2, 3, Plumbaginaceæ, Lythrum, Primulaceæ; 4, Rosaceæ; 5, 6, Convolvulaceæ, Solanaceæ; 7, Leguminosæ; 8, 9, Chenopodiaceæ, Boraginaceæ; 10, 11, Geraniaceæ, Malvaceæ; 12, Labiatæ; 13, 14, Caryophyllaceæ, Resedaceæ; 15, 16, Veronica, Scrophulariaceæ; 17, 18, Cruciferæ, Violaceæ; 19, 20, 21, Urticaceæ, Polygonaceæ, Plantaginaceæ; 22, 23, Ranunculaceæ, Papaveraceæ; U, U, Museum, Laboratory, &c.; V, Lawn.

* This is essentially the design introduced into the Edinburgh Botanical Gardens by Professor Balfour, who has substituted for the old arrangement of beds of immense size, narrow rows of beds in continuous lines over a much more compact area.

Mr. Mabbott remarks that children, even of fourteen or fifteen, are apt to be puzzled with small structural differences, and that they are inclined to lose faith in the accuracy of their text-book or teacher if such are frequent.

In addition to the typical species of those natural orders especially selected for study, there should be a few of the commonest natural orders which are represented by several genera, some including several species, that the less broad distinctions of genus and species may be amply illustrated. Where possible, a natural order or genus should be selected where there is some evident series of the allied members. Such evidence of transition from type to modifications is necessary, "because young boys cannot see the force of classifying together what apparently are quite different plants."

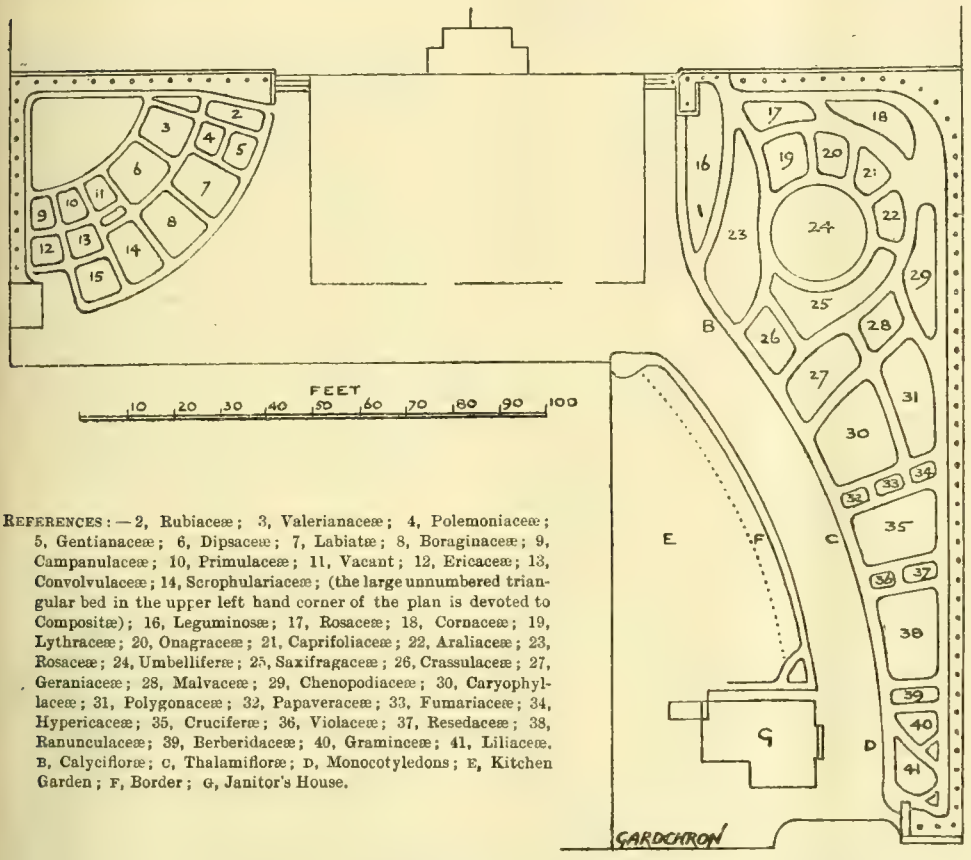
On the other hand, whilst it is well to select natural orders such as Cruciferæ and Geraniaceæ, in which the departure from the given type is not great, it is wise to give especial prominence to such an order as Ranunculaceæ, where, amongst its widely divergent genera, a general relationship may be detected, despite the remarkably individualised modifications.

The Merchiston garden has been kept in a satisfactorily tidy state, from the fact that to individual boys is entrusted the care of one natural order, or even of an individual species. The boys volunteering for this work are encouraged to study the growth of the plant from the seed, to observe it through all its stages, and to take notes of these and kindred facts.

The excellent results which follow from such individual work may be illustrated by reference to the case of the York Friends' School (an institution visited by many members of the British Association on the occasion of the late Jubilee meeting in that city. At this school such study of botany, accompanied by study of other branches of natural science, has made it possible for past and present scholars to conduct a school *Natural History Journal*,* which is now in its fourteenth year. Nor is it uncommon to find excellent private natural history diaries among the scholars themselves.

The cost of construction in the case of the Merchiston garden has been very slight. There were already gardeners at the school, but the work of laying out the beds would not have occupied a labourer a week, had it been necessary to obtain such aid. The purchase of implements and a few plants was all that was necessary, inasmuch as Professor Balfour very kindly made the school a present of the greater number of the plants required from the Edinburgh Royal Botanical Gardens. Many of the species have been gathered by the scholars, and others have been raised from seed. It is not likely that, had it been necessary to purchase the whole of the plants at the first, the cost would have exceeded £6 or £8.

The only skill necessary is that required to select the species in due proportion for the several natural orders—a work that may be undertaken by any one having a slight knowledge of botany. The list given in Sir Thomas Hooker's *Primer* will be found of service.



References: —2, Rubiaceæ; 3, Valerianaceæ; 4, Polemoniaceæ; 5, Gentianaceæ; 6, Dipsaceæ; 7, Labiatæ; 8, Boraginaceæ; 9, Campanulaceæ; 10, Primulaceæ; 11, Vacant; 12, Ericaceæ; 13, Convolvulaceæ; 14, Scrophulariaceæ; (the large unnumbered triangular bed in the upper left hand corner of the plan is devoted to Compositæ); 16, Leguminosæ; 17, Rosaceæ; 18, Cornaceæ; 19, Lythraceæ; 20, Onagraceæ; 21, Caprifoliaceæ; 22, Araliaceæ; 23, Rosaceæ; 24, Umbelliferæ; 25, Saxifragaceæ; 26, Crassulaceæ; 27, Geraniaceæ; 28, Malvaceæ; 29, Chenopodiaceæ; 30, Caryophyllaceæ; 31, Polygonaceæ; 32, Papaveraceæ; 33, Fumariaceæ; 34, Hypericaceæ; 35, Cruciferæ; 36, Violaceæ; 37, Resedaceæ; 38, Ranunculaceæ; 39, Berberidaceæ; 40, Graminceæ; 41, Liliaceæ. B, Calycifloræ; C, Thalamifloræ; D, Monocotyledons; E, Kitchen Garden; F, Border; G, Janitor's House.

Fig. 80.—Plan of Dunfermline School Garden.

We would next refer to the garden at the Dunfermline High School (fig. 80). This is especially of interest, because it was the first actually laid out at a school under the control of the School Board.

It was stipulated by the Board that the cost should not exceed £25, and that it should, as much as possible, be decorative as well as useful.

Below is the note of expense furnished by Mr. Gorrie, clerk to the Board:—

To—Digging Ground (in items) ...	£8	10	10
Fee and Outlays	4	14	6
Seeds, Shrubs, &c.	2	19	6
Cost of Cartage of Turf	5	1	0
	£21	5	10

* Published by Sessions, York.

It is needful to point out that in this case also the cost was lessened, thanks to the liberality of Professor Balfour, who was willing to supply plants on condition that the garden should be used for teaching purposes.

Also, as the garden was much larger than the preceding, it has taken a longer time to appear furnished adequately with plants.

The plan had of necessity to be adapted to the available ground, which is of irregular outline, and (as will be seen in the annexed sketch), separated into three more or less extensive areas.

A part near to the janitor's house (G) was made over to him for use as a kitchen garden, on condition that he should look after the garden as a whole. It was also purposed slightly to raise his salary, as he appeared to take a great interest in keeping the beds free from weeds, &c.

The general arrangement of the natural orders was based upon the arrangement given in Hooker's *Student's Flora*, but the position of certain of the beds in the three main groups of Thalamifloræ, Calycifloræ, and Monopetalæ, was determined by the nature of the plants. To the more decorative were given the more prominent positions.

Trees and shrubs were planted about the garden, and a decidedly decorative appearance was introduced by borders of turf, which also was used to form the broader paths separating one natural order from another. It is advisable to sow grass seed wherever there is an extensive area which it is purposed to form into a botanical garden, unless turf may be had in quantity on the premises. The beds may be cut out in the following autumn. For smaller gardens it is often advisable to make paths of gravel or brick-dust, and not attempt to introduce turf, unless the latter can be kept in good condition by constant attention from gardeners.

The cost of keeping tidy a larger garden, such as this at Dunfermline, must be allowed for. Where the boys do not take part in this work, it would be necessary to make the janitor responsible, or to give a week's work to a labouring gardener every quarter. This would be more than sufficient, provided that a master would see to the naming of the plants, and occasionally weed some of the plots himself. But, undoubtedly, the best plan is to make some of the boys responsible for the garden's condition, as is the case at Merchiston.

(To be continued.)

Home Correspondence.

Diplacus glutinosus coccineus.—Can any reader give any information as to the parentage of this hybrid? The only specimen which I have seen differs from Diplacus glutinosus in having its stigmas and upper pairs of stamens exserted far beyond the corolla-tube, whilst they are some distance down the tube in D. glutinosus; also the stigmas are twisted, so as to have their long axes lying at right angles to the long axis of the flower in D. glutinosus coccineus, whilst in D. glutinosus the long axis of the stigma is parallel with that of the flower. Is there anything in the parentage of this hybrid to account for these points of structure? Possibly if other specimens of Diplacus were examined, they might be found to be dimorphic. I should be glad if some one with specimens at hand would give information on this point also. *A. B.* [We may refer our correspondent to the *Illustration Horticole*, t. 359, for an account of some of these forms. Ed.]

Saxifraga wallichiana.—In your last issue, p. 526, the above species is said to have a like growth to hypnoides, whereas the true plant, which is figured in Sternberg's *Supplement*, ii., 21, published 1832, and quoted in Engler under S. fimbriata, is a very different plant to any of the hypnoides section; it is placed under Spinulosæ in the *Flora of British India*, and near to the well-known S. flagellaris. The plant meant is probably one that has now been referred to S. Camposii, Boiss. and Reut., and known in many gardens as S. Wallacei or Wallaceana, said to have been raised by Mr. Wallace, of the Dean Cemetery, Edinburgh, between S. Maweana and a Cæspitosa form. At any rate, it answers in every particular to S. Camposii of Boissier and Reuter, a native of Spain,

and under which it has been placed in the *Botanical Magazine*. It deserves all that "F. M." has said in its favour, as it is, without exception, the handsomest and most useful of the group to which it belongs, Dactyloides, of Engler's *Monographie der Gattung Saxifraga*. *D.*

CHRYSANTHEMUM INSECTS.—That the bug figured in your last number (p. 537), now known as *Lygus campestris*, can be very injurious to Chrysanthemums and other plants there is no reason to doubt, for it belongs to a family the members of which live on the juices of plants. But in connecting it with the other bug, now known as *Triphleps minutus*, I think the guilty is probably coupled with the innocent. The latter belongs to a family essentially carnivorous in habits, and I incline to the idea that it has been condemned on purely circumstantial evidence. Very probably it finds its way into the buds in search of Thrips or other minute forms of insect life. A few years ago, quite a parallel case was brought to my notice in which an *Anthocoris* was accused of damaging Hops. Upon examination it was found the Hops were infested by dipterous larvæ, and in my opinion, and in that of those who have more specially studied the *Hemiptera*, the *Phytocoris* was in search of this larvæ and not primarily bent on destroying the Hops. At any rate let us give the *Triphleps* the benefit of the doubt. *R. M'Lachlan, Lewisham.*

TURF-WALKS IN KITCHEN GARDENS (see p. 505).—So long as turf-walks in kitchen gardens—or anywhere else, for that matter—present a smooth green surface, free from the manurial deposits which are apt to mark the footsteps of "John Green," they are pleasant to look upon; but I should like to know how many months in the year turf walks in kitchen gardens generally could reasonably be expected to present the appearance indicated. How is the manure to be wheeled on to the several plots of ground, and the vegetable refuse and weeds removed therefrom, without injuring the said turf-walks? and, moreover, how are such walks, trodden over dozens of times a day by several pairs of more or less dirty hob-nailed boots, to remain green and smooth in surface? They most certainly will not "always look well;" and experience tells me that there are no more suitable and substantial walks for the kitchen garden than well-drained, properly-made gravel ones. *H. W. W.*

—— Those who persist in believing that grass-walks necessarily present special cover for slugs, seem to overlook the fact that by the constant use of the mower slugs, if they once abounded, they are crushed to death. But it is not a fact that they abound in such short grass, or even that they do in lawns where proportioned to the bed or border area the grass is often in the ratio of four to one. The fact is, a hundred times more slugs will be found in a quarter of Cabbage or of any leafy vegetable than on an equal area of short grass. As to the firmness of the grass-walks, if they are properly made, and, of course, drained, they always keep firm. Only very badly laid ones would be soft and boggy. What was not so possible before the introduction of the lawn-mower is now easy; and, so far as labour-saving and neatness are concerned, gravel-walks are not comparable with grass. Asphalte is out of the question; it is hard, uncomfortable to walk upon, and costly. *A. D.*

INCOMPETENT JUDGES.—At the Root, Fruit, and Grain Show, held November 11, prizes were offered for collections of dessert Pears; and the judge or judges awarded the 1st prize to a collection containing dishes of Uvedale's St. Germain, Catillac, Bellissime d'Hiver, and Vicar of Winkfield. I only mention this one case, but the question naturally occurs, are such men competent to act as judges at shows? *R. F.* [What was shown in the other collections? Ed.]

PHALÆNOPSIS CULTURE.—It is evident from the observations made by "P. W.," under the above heading, in last week's issue of the *Gardeners' Chronicle*, that he has had very little practical experience in the culture of Phalænopsis, and yet one so evidently unacquainted with their habits ventures to give advice to others. To begin with, he says nothing whatever about two of the most important items in the successful treatment of this lovely genus of Orchids, viz., shading and ventilation. No Phalænopsis will thrive if not shaded from the bright rays of the summer sun, or, if the house in which it is grown be not ventilated according to the state of the weather. In speaking of the re-basketing or re-potting of Phalænopsis, "P. W." again displays his ignorance by not mentioning that the crowns of the plants should be kept well above the cylinders or baskets. This is essential, as it prevents water from accumulating about the crowns, causing them to damp. Another important point which "P. W." overlooks, is the placing of the plants. They should be placed near the glass, as they cannot possibly have too much light. "P. W." says that the house where Phalænopsis are grown should be kept at a temperature of 80° Fahr. by day, and about 10° lower by night. Now, who but an ignoramus would think of such a thing? Just imagine having the same night temperature in your house when the thermometer outside stands at 20° F. as you would have when it stands at 50° F. In naming traps for cockroaches, "P. W." says these should be laid when closing the house for the day, but, as already mentioned, he does not say anything about opening it. It looks as if he only thought of closing the house when cockroaches were to be caught. *Experto crede.*

COLOUR IN LEAVES.—Nothing I have seen can equal Rhus Cotinus for beautiful colours in the leaves during the autumn. We have several dotted about the garden. The Japanese Maples have been very pretty this autumn, as also the Gleditschia, which also is charming as it turns from its lovely green to the bright rich yellow. *W. A. Cook, Compton Basset.*

PINES UNDER THE SHADE OF VINES.—The growing of the above fruits is, I fear, less common, at least in the South, where dearness of fuel makes itself felt in gardens. In Wales and in the northern coal region, but little falling off in their culture is discernible. The old fashioned vinery with its leaf pits offers many economical advantages in Pine growing which in the modern-built house are usually wanting; but in growing Pines under the Vines, the question will sometimes arise—does the distance the plants are placed from the roof glass affect the length of the fruit of Pine-apples to the lessening of their diameter? It may be opined that this is an open question, and if it can assuredly be answered in the negative, the many shifts gardeners are put to would be materially lightened. It is known that the crown will grow to an unwieldy size if it gets much syringed, but will it and the fruit also become so when grown far from the glass, and no syringing of the crowns is practised. Some twenty-five years ago—that is, in the days before the flood of Madeiran, West Indian, and Algieran Pines had come to this country, and our own superb fruits were not spoken of in the disparaging way common now—my fruiting Pines were placed in deep beds of Oak and Chestnut leaves under the earliest and second early Vines. Of course the fruits were from one-half to two-thirds grown when placed there, and the crowns of the plants, from being grown in low pits, were short. The Vines were pruned on the modified short-spur method, that was, promising rods of varied length were tied in over bare pieces of the main canes, and in other ways made to add to the crop of Grapes, and the light beneath the rods was not excessive. Nevertheless, the fruits of the different varieties—Black Antiguas and Jamaicas—ripened off well each year, and would weigh from 3 lb. to 5 lb. each; and the crowns, to the best of my recollection, were not of a large size. The winter and spring fruits fetched in Covent Garden prices such as growers would very much like to obtain at the present time. *F. M.*

SEAKALE, TOMATOS, ETC., AT KING'S HEATH.—An example of extra strong forcing crowns of Seakale from seed in a few months fit for immediate use, can be seen in Mr. J. Hodges' garden, King's Heath, near Birmingham. A plot of grass land was broken up last winter, and the sods, together with some manure, trenched in. The seed was sown in the spring, two or three good seeds together in patches about 15 inches apart, and the rows 18 inches apart, thinning out so as to have only the strongest plants in each patch. The result is that a goodly breadth of very fine Seakale is now ready for forcing. Mr. Hodges also grows Tomatos, two large houses being now full of them, and they are planted in the borders tolerably close together and trained up with a single stem. The soil is loam chiefly, with very little manure added, but a surfacing of manure is given when the crop is forming. Under such treatment there is a heavy crop of fruit, and of good size. A large collection of Chrysanthemums is in flower here, amongst them several recently introduced kinds, Balmoreau, shaded rosy-lilac tipped with bronze; Bertha Flight, a pleasing shade of pinkish-blush; and M. Bergmann, of a rich golden-bronze colour, with the petals flat at the base and spiral at the point, and all three are distinct acquisitions. *D. S. H.*

PASSIFLORA QUADRANGULARIS.—On October 1, I had occasion to visit the collection of J. P. Bryce, Esq., Bystock, Exmouth. Trained up the roof of the pine stove I noticed a large plant of Passiflora quadrangularis, which is known as the "Granadilla," bearing 70 large and deliciously fragrant fruits. Mr. Gurney, the gardener, says that in May and June the same plant produced the enormous crop of 150 fruits, and these were used as dessert. This species is cultivated in great quantities in the tropics for the sake of its fruits, and judging from the circumstance stated above, there is no reason whatever why it should not be more generally cultivated in this country for the same purpose. It would be a comparatively easy matter to raise plants, as each ripe capsule contains a great number of seeds, which, as a rule, easily germinate. Should anyone find a difficulty in obtaining this species, no doubt Mr. Bryce, or the Director of the Royal Gardens, Kew, would be able to assist him. *Visitor.*

SPIRÆA PALMATA ELEGANS.—The plant which was brought out under this name ten or twelve years ago has always been a favourite in my Cheshire garden, where it has decidedly the best habit, if not the best colour, of all the hardy herbaceous Spiræas in cultivation; I have therefore been surprised to see it mentioned in such disparaging terms. I have always considered it—I forget on what authority—to be a cross between S. palmata and S. ulmaria; at any rate, its obvious characters seem to be divided between those two species. It is surpassed in colour by the clear pink of S. venusta, but is superior to it in the size and number of its plumes of flower, and stands drought far better. The habit of S. venusta is too straggling, and it produces few flower-stalks from a wide base. S. palmata has the fault of all Japanese plants—liability to injury from spring frosts and east winds; the hybrid called elegans is free from this fault. The colour of the hybrid, very pale pink, with darker anthers, is generally admired in my garden more than the deep pink of S. palmata. *C. Wolley Dod, Edge Hill, Malpas.*

SOCIETIES.

NATIONAL CHRYSANTHEMUM.

November 12 and 13.—This year's exhibition, which was held in the Royal Aquarium, Westminster, while being of a very high character in regard to the groups and specimen plants, showed a falling off from last year's standard in the classes for cut blooms. The incurved varieties were represented, however, by some good stands, but the size of the individual flowers was not large, and they failed in the matter of freshness. Japanese varieties were well coloured, and extensively contributed, and competition was close in several of the classes. This falling off of the general character must be attributed to the fact that the fixture is somewhat late for this season. The competition was not by any means so large as last year.

The Societys' Challenge Trophy.

This prize consists of a challenge trophy which is handed to the president of the winning society, who holds it for the term of one year, and a cash prize of ten pounds which is divided among those members of the society who contribute blooms to the show board. The competition for this was very close, but the Wimbledon and District Royal Horticultural and Cottage Gardeners' Society were awarded the first place against the Cranbrook and Weald of Kent Gardeners' and Cottagers' Mutual Improvement Society, who held the trophy last year. Incurved blooms, twenty-four, were very well shown in the Wimbledon Society's stand, and included some capital and large samples of Lord Alcester, Barbara, Golden Eagle, Miss Haggas, Violet Tomlin, J. Salter, Mr. Brunlees, Golden Empress, Empress of India, Queen of England, and Lord Wolseley. The Japanese varieties were also of high quality, among which may be named Ed. Molyneux, Val d'Andorre, Ralph Brocklebank, Meg Merriles, Pelican, M. Brunet, Sunflower, Jeanne Delaux, Madame J. Laing,

Japonais, L'Adorable, Lady Lawrence, Alba fimbriata, Belle Paule, and Grandiflorum. In the second prize lot from the Weald of Kent Society, the Japenese flowers were of very fine quality and colour, although a few were a trifle rough. Mdlle. Lacroix, Marsa, Jeanne Delaux, Duchess of Albany, Madame Baco, Lady Lawrence, M. Marrouch, Baronne de Prailly, and Mr. H. Cannell, being the best represented. Of the incurved some few were grand specimens, even and bright, such as Golden Empress, Empress of India, Lord Alcester, Empress Eugénie, Barbara, Madame Baco, Princess of Teck, Hero of Stoke Newington, Prince Alfred, Lord Wolseley, and Lord Eversley. The third place was accorded to the Hull and East Riding Chrysanthemum Society, whose incurved flowers were small, but the Japanese section was well displayed in D. B. Chapman, Ralph Brocklebank, Meg Merriles, Japonais, Ed. Molyneux, Soleil Levant, Jeanne Delaux, and Val d'Andorre.

Incurved Blooms.

The leading class here was for forty-eight, in not less than twenty-four varieties, and Mr. R. Adams, gr. to G. B. Judson, Esq., Frogmore Hall, Hereford, led with only one competitor. He had a very fine lot, even and uniformly well coloured. The best varieties being J. Salter, Cherub, Mrs. Heale, Golden Empress, Refulgence, Mr. Brunlees, Miss Haggas, Lord Alcester, Barbara, Violet Tomlin, A. Salter, Princess of Wales, Prince Alfred, Empress of India, and Princess Beatrice, several of these being shown equally well twice over. Mr. G. Inglefield, gr. to Sir J. A. Kelk, Marlborough, was awarded the 2nd prize, coming close, but his blooms were, perhaps, a bit smaller in some cases—Violet Tomlin, Nil Desperandum, Jardin des Plantes, Miss Haggas, Barbara, Jeanne d'Arc, Princess Beatrice, Lord Wolseley, Alfred Salter, and Lady Dorothy, these with the Queens and Empresses, were the best blooms.

Twenty-four, distinct.—In this class the place of honour was taken by Mr. Sullivan, gr. to D. B. Chapman, Esq., Downshire House, Roehampton, who took the same position last year. He had some excellent blooms, and showed a stand of very even quality, having as the best, Mr. Bunn, Golden Empress of India, Violet Tomlin, Refulgence, Miss Haggas, Jardin des Plantes, Lord Alcester, J. Salter, and Hero of Stoke Newington. E. Saunderson, Esq., Felix Hill, Harlesden Park, Willesden, was a good 2nd, showing small, but very neat and well finished flowers, in which were Barbara, Violet Tomlin, Mr. Brunlees, Princess of Wales, Miss Haggas, Nil Desperandum, Golden Empress of India, Emily Dale, and John Salter. The 3rd stand in order of merit was from Mr. W. Thomas, gr. to W. Marshall, Esq., Taunton, who followed closely, but was disqualified as the blooms were not distinct, and the 3rd prize placed to Mr. T. Skinner, East Sutton Park, Staplehurst, who also showed well with Miss Haggas, Empress of India, Mr. Shipman, Violet Tomlin, J. Salter, and others.

Twelve, distinct.—In this class there was not such close running, Mr. C. J. Salter, gr. to T. B. Haywood, Esq, Woodhatch Lodge, Reigate, leading easily, with a remarkably good stand, Barbara, John Salter, Empress of India, Golden Empress, Miss Haggas, and Mrs. Heale being fine blooms. In the second lot, which was sent by Mr. W. Thomas, the flowers were not so even—Barbara, Jardin des Plantes, and Lord Alcester being good exceptions; Empress of India and Prince Alfred being good also.

There was another class for twelve incurved, in which exhibitors in the foregoing classes were not allowed to enter, and a large show resulted, eight stands being set up. Mr. D. Hill, gr. to T. B. Brockman, Beachboro' Park, Hythe, was the most successful exhibitor here, showing a clean, bright lot of blooms, of moderate size, Barbara, Hero of Stoke Newington, Lord Wolseley, Princess of Wales, Empress of India, Golden Empress, Alfred Salter, and Mrs. Heale being excellent types. Mr. W. Collin, gr. to J. W. Carlisle, Esq., Ponsbourne Park, Hertford, was a close 2nd, with Jeanne d'Arc, Alfred Salter, Empress of India, Lord Alcester, and Lord Wolseley among his blooms.

Six Blooms, one variety.—There were seven lots staged here, and Mr. Calvert, gr. to J. Archer Houblon, Esq., Great Hadingbury, Bishop's Stortford, led with a splendid lot of Princess of Wales, well finished and very even.

Japanese Blooms.

Forty-eight blooms, not less than twenty-four varieties.—In this (the principal) competition there were five stands shown, and the exhibits ran each other closely. Mr. C. Cox, gr. to J. Trotter, Esq., Buckenden Grange, Hereford, was placed 1st for a very fine lot of large bright blooms, in which Meg Merriles, Boule d'Or, Baronne de Prailly, Val d'Andorre, Margaret Marrouch, Carew Underwood, W. G. Drover, Sunflower, Ed. Molyneux, Japonais, Ralph Brocklebank, Jeanne Delaux, Avalanche, Stansted White, Madame B. Pigny, and Sarah Owen were the best. The 2nd place was adjudged to Mr. W. Packman, gr. to C. E. Shea, Esq., The Elms, Foot's Cray, Kent, whose excellent display was very close on the foregoing; there were very good flowers of Jeanne Delaux, Gloriosum, Sarah Owen, Condor, Sunflower, Alba fimbriata, Carew Underwood, Martha Harding, Japonais, Alcion, Etoile de Lyon, Duchess of Albany, Meg Merriles, and Ralph Brocklebank. 3rd, Mr. Adams, with neat flowers, and all well coloured, the best being Mr. H. Cannell, Ralph Brocklebank, Carew Underwood, Alba fimbriata, Japonais, Mons. Freeman, and Lady Lawrence.

Twenty-four distinct.—This was another good class, in which Mr. W. Thomas was 1st with very well-coloured examples of La Boule d'Or, Triomphe de la Rue des Chalets, Sunflower, Meg Merriles, Jeanne Delaux, Madame Baco, Fair Maid of Guernsey, Ralph Brocklebank, Mr. H. Cannell, Mad. C. Audiguier, Japonais, and Val d'Andorre. The second place was taken by a stand almost as good from Mr. C. J. Salter, gr. to T. B. Haywood, Esq. The flowers were full and of good substance, and included fine blooms of Mrs. Wheeler, Gloriosum, Ed. Molyneux, Madame J. Laing, Madame Baco, L'Adorable, Mons. Bernard, Japonais, Condor, Ralph Brocklebank, Avalanche, and Sunflower. There were in all as many as eleven stands set up in this class, which contained some of the best blooms of the show, and was of good character throughout. Mr. G. Inglefield was placed 3rd, with fine samples of Ed. Molyneux, Sunflower, Madame Baco, W. G. Drover, Boule d'Or, G. Daniels, J. M. Pigny, Carew Underwood, Madame C. Audiguier, and Japonais.

Twelve distinct.—In this class there were only four lots entered, the 1st prize being awarded to bright large flowers of good substance from Mr. W. Thomas. A flower of La Boule d'Or was splendidly coloured, and others were Thunberg, Ed. Molyneux, Madame J. Laing, Avalanche, Madame C. Audiguier, the remaining flowers being somewhat thin. In the 2nd prize stand, from Mr. G. King, gr. to W. McFarlane, Esq. Rickmansworth, Belle Paule was very fine, but generally they were uneven.

In the class for twelve blooms—exhibitors in the foregoing not being allowed to compete—there were some high quality flowers. Mr. D. Hill, Hythe, led with a very neat lot of good-sized blooms, including specimens of G. W. Drover, Madame J. Laing, H. Cannell, Madame C. Audiguier, Ed. Molyneux, and Avalanche; Mr. E. Tauby, Ealing, being placed 2nd, showing finely-coloured blooms, but lacking the substance of the 1st prize lot—Jeanne Delaux, Gloriosum, Boule d'Or, Madame C. Audiguier, Mdlle. Lacroix, and Avalanche being well shown, however.

Six White blooms.—In this class only one variety was to be shown, and the 1st prize was awarded to Mr. T. Bellesworth, gr. to R. Ewing, Esq., Cheshunt, for a superb stand, heavy, large, and clear blooms of Avalanche, winning well against five other lots, and all fine flowers; Mr. Hill was 2nd, with the same variety.

Six blooms, any colour.—Here there were also some remarkably grand blooms, and in a keen competition of eight, Mr. W. Thomas was placed 1st, for large, fresh, and richly-coloured Ralph Brocklebank; Mr. B. Calvert being a very good 2nd, with La Boule d'Or, large, and deeply coloured.

Twelve Reflexed Flowers.—These were very good, the fine stands running each other very closely. Mr. Collin was placed 1st, showing large globular flowers, among which were Cloth of Gold, White Christine, Pink Christine, Peach Christine, Cullingfordi, and Phidias. Mr. Russell was 2nd, showing smaller flowers, with specially good examples of the Christines, Distinction, and Cullingfordi.

Twelve Japanese reflexed.—There was a small competition here, and the 1st place was easily won by Mr. W. Packman, who, however, fully deserved the award. A bloom of Jeanne Delaux was very dark, and other good flowers were L'Adorable, La Triomphante, Madame Paule Dutour, and Val d'Andorre. Mr. J. Moon, gr. to the Misses Arkwright, Mark Hill, Harlow, was 2nd, with Val d'Ardorre as the best flowered, many others lacked substance.

Anemone flowered.—In a stand of twelve blooms of large flowered Anemones, Mr. Sullivan received the premier award, showing a very fine lot, Fleur de Marie, J. Thorpe jun., Nelson, Acquisition, Nouvelle Alveole, and George Sands being the best. The 2nd prize stand was from Mr. E. C. Jukes, Hope House, Winchmore Hill, and followed closely. King of Anemones, Nelson, Annie Low, and Souvenir de l'Ardennes were good.

For a stand of Japanese Anemones, Mr. Sullivan was the only exhibitor, and was awarded 1st. He had large flowers, but these never look very elegant. Jean Marty, Madame Cabrol, Madame Clos, Fabian de Mediana, and Madame B. Pigny were among those shown.

Anemone Pompons were best from Mr. G. French, gr. to D. W. S. Adams, Oakthorpe, Palmer's Green, bright and fresh-looking Regulus, Antonius, Mr. Anstie, Madame Sentir, Marie Stuart, and Perle being included.

Pompons were represented by some few stands, all very much of the same merit. Mr. G. Duncan, gr. to C. T. Lucas, Esq., Horsham, Sussex, was placed 1st, with such varieties as Black Douglas, Prince Victor, Mdlle. Elise Dordan, and Marabout; 2nd, Mr. Russell, gr. to Dr. Lewis, Henfield, Sussex, showing similarly.

Amateur's Classes.

These are for amateurs who do not employ paid assistance of any kind in their culture of Chrysanthemums. There were seven exhibitors in the class for twelve incurved distinct, and the blooms shown were highly creditable to the growers. Mr. H. Fincham, Cranbrook Union, Staplehurst, who was awarded the leading position, had moderately large, even and well-finished samples of Lord Alcester, Alfred Salter, Empress of India, Jeanne d'Arc, Miss Haggas, Lord Wolseley and Violet Tomlin. The second place was taken by Russell Bradberry, Esq., Wealdstone, Harrow, who followed closely, having good blooms of Lord Alcester, Barbara, John Salter, Alfred Salter, and Empress of India.

There were also seven entries for a stand of six blooms, and here Mr. Bradberry was a good first, showing very fine Lord Alcester, Empress of India, and Aifred Salter.

In the classes for Japanese blooms H. Briscoe Ironside, Esq., Foot's Cray, Kent, was the successful exhibitor, leading for twelve and also for six blooms, and showing well in each case. There were seven other lots staged in the class for twelve, and Mr. Fincham came second. Mr. Ironside's best blooms were Jeanne Delaux, Carew Underwood, Criterion, Madame J. Laing, Ed. Molyneux, Avalanche, Sarah Owen, G. Daniels and M. H. Elliott. Mr. Fincham was close with Madame Baco, Jeanne Delaux, Criterion, Sarah Owen and Madame J. Laing in creditable examples.

Amateurs and Single-handed Gardeners.

These are classes provided for single-handed gardeners, and also for amateurs employing not more than one permanent gardener, but the display was not of great merit. Mr. Bradberry led for the best twelve incurved blooms, having smallish flowers, but very neat and well-finished, Barbara, Golden Empress of India, Lord Alcester, Queen of England, and Perle Precieuse, being worthy of note. The best six came from Mr. G. Jordan, gr. to the Rev. Hugh Berners, Ipswich—a neat lot, including Jeanne d'Arc, Prince Alfred, and Empress Eugénie. The best twelve Japanese were from E. Mawley, Esq., Rosebank, Berkhamstead, who had well-grown, fresh-looking flowers, of moderate size, in which were Sunflower, Ed. Molyneux, Comte de Germiny, Madame J. Laing, Thunberg, and Alba fimbriata. For six Japanese, Mr. Jordan was again 1st, La Boule d'Or, Gloriosum, and Carew Underwood, being fine.

Metropolitan Classes.

It is necessary that the exhibitors in these classes reside within 4½ miles of Shoreditch Church, and the prizes are offered to encourage the growth of the Chrysanthemum in town. The exhibits were very satisfactory, and reflect credit on the growers. For twelve incurved, Mr. F. Bingham, Stoke Newington, was 1st, showing neat, even, and well-finished flowers of Princess of Wales, Perle Precieuse, Lady Hardinge, John Salter, and Jeanne d'Arc. Mr. T. Caryer, Hornsey Lane, was 2nd, running very close with Violet Tomlin, Princess of Wales, Golden Empress, and J. Salter. This exhibitor also led for six incurved out of five lots staged. He was again to the fore for Japanese varieties, and staged a fine lot of

twelve bright and fresh blooms of Madame Audiguier, Sunflower, Soleil Levant, Val d'Andorre, Mdlle. B. Pigny, and Japonais. Mr. Brooks, Highgate, was 2nd with smaller but as cleam blooms, having Mons. Bernard, Mad. J. Laing, Mr. H. Cannell, Madame Baco, Sunflower, and Val d'Andorre. Competition being very good here. For six blooms of Japanese, Mr. Caryer again led, having E. Molyneux, Val d'Andorre, and Madame C. Audiguier as the best.

Groups and Pot Plants.

These were of much finer quality than at last year's show. For a group arranged in a space of 100 square feet, Messrs. J. Laing & Sons, Forest Hill, won 1st, with a large number of vigorous plants, bearing finely developed large blooms, and well coloured. There were plants of most of the best exhibition varieties, which it is almost needless to specify, but some good plants deserve mention; they were:—Mons. Bernard, Stansted White, L'Automne, Ralph Brocklebank, Etoile de Lyon, Violet Tomlin, Miss Haggas, Carew Underwood, Madame J. Laing, Lady Dorothy, Thos. Stevenson, Criterion, and Mrs. F. Jameson. The 2nd place was taken by Mr. J. Townsend, Providence Nursery, Putney, who had not such dwarf front plants. The group comprised the more popular exhibition and decorative varieties, in fair specimens. 3rd, Mr. J. Stevens, St. John's Nursery, Putney, who had a pretty fringe of Pompons round the front of his group, which had Avalanche and Madame C. Audiguier in good form, and a decorative variety.

For a group of Japanese Chrysanthemums, the plants not to be more than 5 feet high, in pots, Messrs. J. Laing & Sons were again leading, and showed some plants only about 18 inches in height. There were Val d'Andorre, Etoile de Lyon, Avalanche, Mont Blanc, Gloriosum, and M. Freeman among the most conspicuous. 2nd, Mr. W. Holmes, Frampton Park Nurseries, Hackney, who showed remarkably dwarf and very sturdy plants, bearing fine foliage and well-coloured flowers, especially of Jeanne Delaux, Mdlle. La Croix, Cocquette de Castille, Baronne de Prailly, Comte de Germiny, Sunflower, and Macaulay.

Trained specimens were a decided feature of the show, all the classes being well supported, and the competition ran very close in many cases. Mr. Harris, Southampton, won the place of honour in the class for nine plants, showing finely-grown, low-trained plants, heavily laden with flower. The varieties being Madame Astorg, Joseph Mahood, Hiver Fleuri, G. Glenny, Miss Dixon, Fair Maid of Guernsey, and pink and white Christine; 2nd, Mr. J. Weston, gr. to D. Martineau, Esq., Clapham Park, also with low-trained plants, including Lisle des Plaisirs, Elaine, Madame B. Rendatlier, Madame de Sevin, and Source d'Or. Mr. E. Easey, gr. to J. W. Jones, Esq., The Grove, Highbury New Park, was 3rd, all running close; Margot, Mdlle. Lacroix, Madame de Sévin, and Peter the Great, being the best. To Mr. Wesker, The Gardens, Streatham Elms, Tooting Bec Road, an extra prize was awarded for very fine examples, Mrs. Marsh, Princess of Wales, and Mr. Dixon being the best. Mr. Davey, gr. to C. C. Paine, Esq., led for four standards with excellently flowered plants, Dr. Sharpe, Wm. Robinson, Margot, and Madame B. Rendatlier, being his varieties; 2nd, Mr. H. Wraight, gr. to W. Johnson, Esq., The Cedars, Upper Clapton, was a close 2nd, having Mdlle. Lacroix and Elaine in fine form. Mr. Clarke, gr. to J. H. Lile, Esq., Brixton Hill, was 3rd here, but came up to the front rank in the class for six large flowered plants, showing low trained flat, beautiful examples, Elsie, Dr. Sharpe, Val d'Andorre, Sunflower, G. Rundle, and Ed. Molyneux being the varieties; Mr. Davey was 2nd here, having large and well-flowered plants, Bouquet Fait, Source d'Or, Madame B. Rendatlier, and White Christine being shown; the 3rd place was given to Mr. Wraight, for Ornament, Mdlle. Lacroix, Bouquet Fait, and Margot, among others; while Mr. Easey was awarded an extra prize, having Cullingfordi, Ed. Audiguier, Val d'Andorre, and Pink Christine—all very fine throughout the class. The lot which won 1st for Mr. Harris, as being the best four trained plants, any varieties, were simply masses of flower; Source d'Or, Pink Christine, and Dr. Sharpe may be named as specially fine. Mr. Clarke was 2nd, having Mdlle. Lacroix, Val d'Andorre, and Cullingfordi, also finely flowered; the 3rd place fell to Mr. Wraight, who had Madame B. Rendatlier, Margot, and Mrs. Dixon, in fine specimens. In the class for trained Pompons (six plants), Mr. Weston sent a good lot, low-trained, and was placed 1st, with Antonius, Sunset, Cedo Nulli, Golden Cedo Nulli, and Silver Streak, 2nd, Mr. J. McKenzie, gr. to F. S. W. Cornwallis, Esq., M.P., Linton Park, Maidstone, with very flat, large plants, including St. Justin, St. Michael, St. Thais, Miss Salford, and Maréchal Duroc; Mr. Clark, with pyramid-trained plants, was 3rd.

Miscellaneous.

Messrs. Pitcher & Manda, United States Nursery, Short Hills, N.J., U.S.A., sent a few blooms of American introductions, including half-a-dozen grand blooms of Mrs. Alpheus Hardy. From Messrs. H. Cannell & Sons, Swanley, Kent, came a collection of blooms of all sections, embracing the best varieties: and also a collection of trusses of zonal Pelargoniums. A number of nicely-flowered plants of Carnation Miss Joliffe Improved were sent by Mr. Jennings, gr. to De Rothschild, Esq., Ascott, Leighton Buzzard; and from Mr. J. May, St. Margaret's, Twickenham, came a collection of Cyclamen, and Duchess of Fife, a white flower, was certificated. Some effective and beautiful devices in Chrysanthemum flowers were shown by Messrs. Perkins & Sons, Coventry. Others, rather less pleasing, came from Mr. W. Brown, Richmond, and Mr. W. Gordon, Duke Street, W., the last showing bouquets of one or two colours in harmony.

The sundriesman was at the Aquarium in force, and the many stands contained the usual collections of peats, sands, loams, manures of all kinds that are portable, and insecticides innumerable, each insect seeming now to possess its own special annihilator, and yet the insects abound. Amongst newcomers are Messrs. Beale & Co., Wood Green, who showed their method of feeding plants by top-dressing them; if in pots the dressing being kept in place by removable strips of zinc. It is novel, and will suit the needs of the town amateur, who is generally impecunious in the matter of soil for his plants. Fertilising moss and young plants growing in it, were other items in this stand. One of the oldest houses of sundriesmen is that of Mr. H. G. Smyth, of Goldsmith Street, Drury Lane, W.C., who had a most extensive and varied assortment. We name a few of the articles:—Teakwood rafts, in sizes of 4 inches square up to 1 yard square. These are copper fastened, and should be very durable; the wood is not planed, so that the roots of Orchids will cling all the more easily. Lemon oil is another new insect "remedy," much in vogue for fly and thrips, &c. The useful Trug, of Sussex origin, was also here.

Some excellent Mushroom spawn, and samples of Grapes and flowers grown by the aid of Mr. Thomson's Vine manure, were observed on the stand of Mr. George, of 10, Victoria Road, Putney. Messrs. W. Wood & Sons, Wood Green, also sent a number of sundries.

Fruit, Vegetables, and Potatos.

The galleries and St. Stephen's Hall, were partially filled with fruit, chiefly Pears, Apples, and Grapes, and Gourds of an ornamental character.

In the open classes for Grapes there were some excellent samples of Muscat of Alexandria shown by Mr. Griffin, gr., Coombe Bank, Kingston-on-Thames, who was 1st, and Mr. H. W. Ward, Longford Castle, Salisbury. For three bunches of any variety of black Grape, the winner in the class above noted, again took the highest award with Black Alicante, perfect in every point. Mr. H. W. Ward showed his usual contribution of Gros Guillaume, immense bunches, well coloured, and large berries, but which failed to entrance the judges. Mr. Oclee, gr., Blickly Hall, Aylsham, had the best Gros Colmar Grapes.

The Gourds, before mentioned, came from Messrs. Cannell & Sons, Swanley, Kent, a very good collection and well matured.

Messrs. Sutton & Sons' Prizes.—Mr. Waite, Glenhurst Gardens, was the winner of the highest of Messrs. Sutton & Sons prizes for a collection (six) of vegetables. His best products were the Crystal White Celery, New Red Intermediate Carrot, and Perfection Tomato. The best three Cauliflowers shown were also by Mr. Waite, the variety Autumn Mammoth.

The finest four dishes of Potatos were those of Mr. J. Hughes, gr., Eydon Hall, Byfleet, and consisted of Satisfaction, Nonsuch, Sutton's Seedling, and Abundance. Good in appearance with well-washen skins, the produce of how much ground? The best eight dishes were by Mr. E. S. Wyles, Edgecote, Banbury, who had equally good looking tubers; Messrs. Webb and Son's Special Prizes Collection (6) Vegetables. 1st prize went to Mr. R. Lye, gr., Sydmonton Court, Newbury. His Leek Oxonian, Wroxham Brussel Sprouts, Ailsa Crag Onion, and Chancellor Potatos, could not be excelled.

Mr. Deverill offered prizes for collections of Celery, Wroxton Brussel Sprouts, and Culzean Castle Curled Kale. We cannot do more than specify the Kale shown, which was as good as could be. The 1st prize fell to the valiant Mr. Waite. The nurserymen, Messrs. Fidler and Messrs. Sutton and Sons, showed great numbers of Potatos, and amongst them many promising new varieties, either of commerce or that soon will be. Exigencies of space forbid our mentioning any by name.

Awards of the Floral Committee.

A meeting of this body took place after the prizes were awarded, Mr. R. Ballantine, Chairman of the Committee, presiding, and a large number of flowers of Chrysanthemums were staged for inspection, and several Certificates of Merit were awarded, as follows. To large-flowered Anemone Miss Margaret, blush guard petals with sulphur centre; a very pleasing variety of great promise from Mr. W. E. Boyce, Archway Nursery, Highgate. To John Doughty, incurved, a sport from Queen of England, a fine, well-built flower having a pink base and a pale buff centre flushed with pink, shown by Mr. J. Doughty, Cranbrook, Kent, with whom the sport originated. To incurved Japanese, Mrs. Alpheus Hardy, its broad white petals being densely covered with hairs, some fine blooms being shown by Messrs. Pitcher & Manda, United States Nursery, Short Hills, New Jersey. A flowering plant was also shown by Mr. T. S. Ware, of Tottenham. To Lady Dorothy, an incurved sport from Hero, of Stoke Newington, cinnamon, but in the centre the basal petals suffused with pale pink. It is said to be quite distinct from Charles Gibson, and promises to make a valuable exhibition variety—from Messrs. Henry Cannell & Sons, Swanley. To Madame Alfred Carrière, a beautiful reflexed Japanese variety, very fine in shape, and pure in colour. To Mrs. S. Coleman, incurved, pink, with a pale yellow centre; a sport from Princess of Wales, fine petal, and very pleasing. To Alice Stevens, a golden-yellow hybrid Pompon, of a fine deep colour, and very free, from Mr. George Stevens, St. John's Nursery, Putney. Mr. Judge Benedict, large Anemone-flowered, blush-white, with sulphur centre: a very pleasing and promising variety; and to a charming yellow Pompon, of the Bijou d'Horticulture type, named Lune Fleuri, the flowers very small and compact; very free, and likely to prove very useful for cutting from: all these came from Mr. Robert Owen, Castle Hill Nursery, Maidenhead. To Japanese Madame Baco, pleasing lilac-pink, a large, full flower, with a number of narrow petals—very fine indeed, and a capital exhibition variety: from Mr. Thomas Bettesworth, Burton Grange, Cheshunt. To incurved Willie, a sport from Captivation; the latter threw a yellow sport, and this in its turn sported to a delicate pink flower, with a buff centre, which was named Willie: from Mr. W. Holmes, Frampton Park Nursery, Hackney. To hybrid Nosegay Pelargonium, Souvenir de Mirande, the pips having a white centre, with broad carmine pink margin, a very beautiful and distinct variety likely to be much grown for exhibition and decorative purposes. This came from Messrs. Cannell & Sons.

A Silver Medal was awarded to Mr. R. Owen for a collection of ninety-six blooms of new varieties of Chrysanthemums of various types, most of them being represented by two flowers. The most promising were reflexed Souvenir de Alfred Mott, magenta and buff, sent out as an incurved variety; Japanese, Mrs. Falconer Jameson, red and buff, having fine and broad petals, but not in its best form, M. Jules Lefebvre, Japanese reflexed, pale pink with silvery reverse; Perle Precieuse, a beautiful pale purple incurved variety, with massive petals, but too small as an exhibition variety; Fred. Hart, a rosy pink reflexed variety, sent out as an incurved: the Committee wished to see this again, and Madame Robert Owen, a large Anemone-flowered variety, pure white in colour. Mr. G. Duncan, Horsham, sent Elise, incurved, a sport from Mrs. Norman Davis, but which was simply Princess Teck, from which the latter had sported. Mr. G. Stevens had Anemone Pompon, Lucy Stevens, pale yellow; and Colonel Ray, a reddish chocolate reflexed flower. Mr. E. C. Jukes, Winchmore Hill, sent Japanese Anemone, Madame Ghys, pink and lilac blush: a remarkably good variety, but as it was sent out in 1886, thought too old to merit an award. Mr. G. French, gr. to Dr. Stanley Adams, Palmer's Green, sent a pure white Anemone Pompon, a sport from

Marie Stuart; deferred to see if the sport is a fixed one. Mr. J. Doughty sent six very fine blooms of a single Chrysanthemum named Sir Thomas Symonds, which was brought by the Admiral from China; it is of a rich golden colour, has three or four rows of guard petals, and is highly fragrant. An attempt to obtain for it a Certificate of Merit failed. Messrs. Pitcher and Manda were awarded a vote of thanks for a collection of thirty-four varieties of new Chrysanthemums, nearly all Japanese. Messrs. H. Cannell & Son had a plant of H. C. Kingston, an amaranth-coloured Japanese, somewhat reflexed, the flowers very full, but undeveloped; the committee wished to see it again. Mr. T. Bettesworth had Marsa, a pink and magenta Japanese, too old to be certificated, but very fine.

IPSWICH AND EAST OF ENGLAND.

November 5.—The usual exhibition of Chrysanthemums took place in the Public Hall on the above date, and proved very attractive, the date serving to catch some blooms of high quality. Plants and flowers alike were in good character; and in the classes set apart for fruit and vegetables the exhibits were remarkably good.

Groups.—The best group, quality of bloom and effect being the leading consideration, came from Mr. G. Jordan, gr. to the Rev. H. A. Berners, Harkstead Rectory, Ipswich, who had Japanese varieties mainly, but admirably grown and bloomed. Mr. C. Freeman, gr. to A. Winch, Esq., Ipswich, was a good 2nd.

The best group of twenty plants was staged by Mr. H. Pooley, gr. to E. R. Turner, Esq., Clare Lodge, Ipswich, also with excellent specimens, dwarf, well grown, and carrying each several good blooms; Mr. W. Holden, gr. to E. A. D. Halford, Esq., was a close 2nd.

The best group of miscellaneous plants, arranged for effect, was shown by Mr. H. J. Southgate, gr. to C. W. King, Esq., Morpeth House, Ipswich; Messrs. Grimwade was placed 2nd.

There were also groups of Chrysanthemums shown by cottagers, and they were of a highly creditable character. Specimens of incurved and Japanese varieties were somewhat poor. Other plants included specimen Ferns, a fine piece of Davallia Mooreana being the best; also table plants and Chinese Primroses.

Cut Blooms.—The leading class for these was one for twelve blooms of incurved and twelve Japanese varieties. Here Mr. Lister, gr. to Lord Brooke, M.P., Easton Lodge, Dunmow, was 1st, with a very good lot indeed; 2nd, Messrs. Saltmarsh & Son, Chelmsford. Mr. Lister also had the best twelve incurved blooms; Messrs. Saltmarsh & Son were 2nd.

There were also classes for amateurs similar to the foregoing, and here the Rev. A. H. Berners was again 1st, with flowers greatly similar to those already given; Mr. Holden coming in 2nd. The Rev. A. H. Berners also had the best twelve incurved.

Japanese Blooms.—These were very fine, and the best twelve came from Mr. C. Unwin, gr. to F. H. Jeune, Esq., Lawford Place. The Rev. A. H. Berners had the best twelve blooms of Japanese—a very good lot.

The best six blooms of a crimson reflexed Chrysanthemum, Cullingfordi; the best white reflexed, Mdlle. Lacroix. The best six Japanese, one variety, was Criterion. Reflexed, large Anemone varieties, Japanese, and incurved, were shown in collections of six varieties. The premier bloom in the whole show, and to which the Silver Medal of the National Chrysanthemum Society was awarded, was Madame C. Audiguier. Singular to state, no prizes were offered for the Pompon Chrysanthemum.

Fruit.—Generally, this made an excellent display. The best collection of six dishes came from Mr. J. Sheppard, Woolverstone Park, Ipswich; and that sent by Mr. Rogers, gr. to Lord Rendlesham, Woodbridge, was the next best. Other exhibitors of excellent Grapes were Mr. Cresswell, gr., Stoke Park, Ipswich; Mr. H. Cheney, gr., Mosside; Mr. Macmillan, gr., Oakley Park; and Mr. Holden.

Other fruits were well shown, and notably Apples, by Mr. Hance, gr., Gosford Hall, and Mr. J. Woods, gr., Woodbridge Lawn; Mr. J. Sheppard, and Mr. Holden. Pears of good quality came from Woodbridge, Wolverstone Park, and other places.

Vegetables were numerous, and very good. Mr. Andrews took the 1st prize, with a collection of ten varieties; Mr. Thomas King, gr. to J. A. Berners, Esq., Weston Lodge, was 2nd.

KENT COUNTY CHRYSANTHEMUM.

November 6 and 7.—Few young societies have achieved a greater amount of success than did the Kent County on the above occasion. The exhibition which took place in the Rink, Blackheath, being pronounced, by several old growers who were present, one of the best they had witnessed within the metropolitan area.

As was expected, the premier award, £10, for eighteen Japanese and the same number of incurved, brought together some remarkably fine blooms. There were nine entries for this, the best being staged by Mr. M. Sullivan, Devonshire House, Roehampton. Conspicuous among other varieties in the winning stands were Etoile de Lyon, Sunflower, E. Molyneux, Avalanche, and Mrs. J. Wright.

Japanese varieties in other classes were well represented. For the best twelve, distinct, Mr. J. Blackburne, Elmstead Grange, Chislehurst, was awarded 1st prize for a stand of fine blooms; and Mr. J. Mitchell, Brigend Place, Bexley, was placed 2nd. The best six Mdlle. Lacroix (Japanese), were shown by Mr. J. Hudd, Mr. H. Smith, Rochester, 2nd. Mr. F. Moore, Bexley, was 1st on the list for six coloured Japanese, any variety, with fine blooms of Sunflower. In another class, Mr. Blackburne staged eighteen fine Japanese blooms, distinct, and gained the 1st prize; and Mr. Blick, The Warren, Hayes, was 1st for the best twelve Japanese, followed by Mr. A. Tomalin.

Incurved varieties were also well shown, the majority of the blooms staged being of fine proportion and perfect shape. For twelve distinct kinds, Mr. Mease gained 1st honours. For six incurved blooms, Mr. Blackburne was also awarded 1st prize. In other classes, Mr. T. Skinner, Sutton Park, Staplehurst, staged the best twelve blooms, distinct; and for six blooms, distinct, Mr. Mease gained the highest award.

Reflexed varieties were best shown by Mr. Mease, who was awarded 1st honours for twelve blooms.

Special prizes offered were rather numerous, the various classes for which formed an interesting feature. Among others the special prize presented by Messrs. Davis & Jones for best blooms of their new incurved variety, Violet Tomlin, was awarded Mr. H. Shoesmith, Shirley. Mr. Sullivan was successful in gaining the prize offered by the same firm for blooms of their new incurved variety, Miss M. A. Haggas; in both cases the blooms were good. The best Japanese bloom in the show was Mr. J. Blackburne's Etoile de Lyon; while Golden Empress was the best incurved, staged by Mr. T. Skinner. The prizes presented by Mr. T. S. Ware, Tottenham, for twelve blooms of the new variety, Mrs. Hawkins, were won by Messrs. Hawkins & Bennet, Twickenham, and Mr. J. Wright, Middle Temple. The prizes for six seedlings sent out by Messrs. J. Laing & Sons, Forest Hill, S.E., went to Mr. M. Sullivan and Mr. H. Shoesmith. The last-named exhibitor was also placed 2nd for six Japanese blooms in this section, the 1st prize being awarded to Mr. Packman. Mr. Sullivan also staged the best six blooms of Avalanche.

Groups of Chrysanthemums were best shown by Mr. J. Payne, Lewisham Park, 1st; and Mr. T. Dobson, Blackheath, 2nd.

Standard trained specimens were fairly represented, and the best were those from Mr. F. Moore, Bexley, who was 1st; and was followed by Mr. A. Tomalin, Crayford.

PORTSMOUTH HORTICULTURAL.

Wednesday: *November* 6.—The fifth annual Chrysanthemum show of the above Society was held in the Drill Hall, Alfred Road.

Cut blooms formed an important part of the show, being both numerous and of good quality, over 2100 blooms having been staged, exclusive of Pompons and single flowered varieties.

The principal class was for thirty-six distinct kinds, one half incurved and one half Japanese. Six growers competed, the prize being a Silver Cup of the value of £25, besides money to the amount of £6. Messrs. W. and G. Drover, nurserymen, Fareham, were placed 1st, and as they secured the Cup of last year, they are now absolute possessors of the same. The blooms staged by them were, in both instances, of the highest merit. The incurved blooms contained many grand examples, and to a bloom of Lord Alcester the premier honours as the best incurved in the show was awarded.

The class for twenty-four distinct blooms consisting of twelve incurved and twelve Japanese, produced seven entries, the best coming from Mr. Inglefield, gr. to Sir J. W. Kelk, Bart., Tedworth, Marlborough. The blooms were generally large and solid, examples of leading varieties.

The competition for the best twelve incurved varieties made a fine show, Mr. Inglefield again taking the leading place.

There were nine competitors in the class for twelve Japanese varieties, distinct, Mr. G. Trinder, gr. to Sir St. John Mildmay, Dogmersfield Park, Winchfield, was 1st, with large well coloured examples.

Anemone varieties, including Japanese varieties of these, made a display, the quality of which in both sections was first-rate. Messrs. Drover was 1st in both classes, with blooms that were not too large, but of splendid colour.

Reflexed varieties formed a fine class, as many as ten entering, for twelve blooms in eight varieties, and the colouring of each variety seemed more marked even than the great size of the blooms. Mr. C. Russell, gr. to Dr. C. Lewis, Henfield, Sussex, was 1st, and was closely followed by Mr. Woodfine, gr. to Major Boyd, Emsworth House, Emsworth.

Pompons and single varieties, arranged in bunches of three flowers, made a nice display, and for twelve bunches of the former, Mr. Russell took 1st prize with a lot of excellent blooms, and Mr. J. Agate, Havant, was 1st for single varieties.

A class for fimbriated varieties, in twelve bunches, of three blooms each, was provided, in which Mr. Hatch, gr., Victoria Park, Portsmouth, was 1st.

For six blooms, any one variety of incurved, Mr. N. Molyneux, gr. to J. C. Garnier, Esq., Rooksbury Park, Wickham, was an easy 1st, with beautifully finished blooms. Mr. Molyneux was also 1st in the Japanese class, staging the same number of blooms of Avalanche in good condition.

A class was provided for those who had previously never won a prize for Chrysanthemums, which produced no less than sixteen entries, and of these Mr. N. Molyneux was far ahead with good blooms well staged.

Messrs. W. Wood & Sons, Wood Green, London, offered a Silver Cup for three blooms each of Japanese and incurved. Sixteen competitors entered, and the best were Mr. Inglefield's, which were of the Queen type and leading Japanese varieties. This exhibitor followed up his previous successes by securing the Cup also, offered by Mr. W. Colchester, Ipswich, for twelve blooms with exhibits similar in aspect.

Many classes were provided for growers in Portsea Island only and for amateurs, which were all well filled.

Plants.—The specimens, trained examples, were arranged in a double bank in the centre of the hall. For eight specimens, Mr. Wakeford, gr. to G. Harris, Esq., Aldermoor, Shirley, was 1st with plants from 3 to 4 feet in diameter, freely flowered and evenly trained without being too formal.

For six plants, these two exhibitors occupied the same positions, and with similar produce.

Pompons were best shown by Mr. Hatch, loosely trained and freely flowered examples of the fine varieties. Six growers competed in the 50 square feet group, Chrysanthemums only being employed. Mr. Hatch was 1st, with well-bloomed dwarf plants, and well clothed with foliage and effectively arranged.

Primulas, both double and single, table plants, and the like subjects were very well shown.

Fruit of good quality made a large display of itself, and in the Grape classes the competition was brisk. Mr. T. Hall, Mr. G. Inglefield, Mr. E. Molyneux, Swanmore Park, Mr. G. Busby, gr., Thornhill Park, Bitterne, Mr. J. Chalk, gr. to G. Reed, Esq., Salisbury, taking honours in those classes.

Apples and Pears were shown in considerable numbers, and were of great excellence, Messrs. G. Bunyard & Co., Maidstone, and Messrs. Hall, Trinder and Jacobs, Petworth, staging well.

Vegetables formed a part of the show. Great credit is due to Mr. Power, the hon. secretary, for his successful management of the show, and also to Mr. Collins for the arduous task of staging the exhibits.

EALING HORTICULTURAL.

November 6.—Amongst the earliest of the suburban Chrysanthemum shows, the one held in the new Victoria Hall, Ealing, proved to be very successful. The front of the platform and the gallery at the far end of the hall was finely dressed with plants sent by Mr. Reynolds, Gunnersbury Park Gardens, amongst which were numerous Ericas, Marguerites, Palms, &c., with flowering

plants in great variety. A prominent feature also was a group of foliage and flowering plants sent by Mr. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill House.

The groups of Chrysanthemums in competition were excellent, the chief places in the large group class falling to Mr. Wigmore, gr. to F. Hicks, Esq., whose blooms were remarkably good.

In the smaller group class, in which there was good competition, the chief prizes went to Mr. Long, gr. to P. Oakshott, Esq.; and to Mr. Grainger, gr. to Mrs. Scott Turner.

Mr. Wright, gr. to G. P. Greenfield, Esq., Hanwell, had the best specimen plants of both large flowered and Pompon sections.

Cut blooms were exceedingly good, the Japanese especially showing up in fine form. Of incurved flowers, the best dozen came from Mr. Jones, gr. to E. Hyde, Esq. With nine blooms, Mr. Edwards, gr. to W. Owen, Esq., was 1st, his lot including a grand bloom of Alfred Salter, the premier incurved flower of the show. Mr. Viner had the best six blooms, and Mr. Jones the best six reflexed flowers, Cullingfordi, Cloth of Gold, and Buttercup, being especially attractive.

In the Japanese classes Mr. Edwards was 1st, with twelve fine flowers, including the premier bloom, in a bold Madame C. Audiguier; also E. Molyneux, Madame Lacroix, Avalanche, Mrs. H. Cannell. With six blooms Mr. Viner was 1st. Mr. Edwards had the best three blooms in E. Molyneux, Madame C. Audiguier, and Mr. H. Cannell, all very fine. This exhibitor also had the best Anemone flowered.

In the Pompon class for trebles, Mr. Collyer, gr. to Mrs. Murrell, was a good 1st, with superb blooms of Renny, Mdlle. Marthe, Golden do., Perles des Beauties, Black Douglas, and Moorinante, &c. Mr. Jones had the best twelve bunches of Pompons not disbudded.

A remarkable exhibit for the date was seen in several large boxes of Dahlia flowers in great variety, double and single, shown by Mr. Chadwick, and Mr. Harman, gr. to F. A. Capps, Esq.

Several very elegantly decorated stands of Chrysanthemums and grasses for table decoration were shown, the best coming from Mr. Chadwick and Miss Stride. Mr. Chadwick and Miss Dean having the best bouquets. Mrs. H. B. Smith exhibited, as is her custom, at Ealing, some lovely combinations, probably never excelled anywhere for taste and beauty. A big basket of golden and brown Chrysanthemums, a huge horseshoe of white ones with a crown of golden brown flowers. A bouquet of white flowers with Roman Hyacinths. A Cinderella shoe of Miss Joliffe Carnations. Numerous sprays, all attracting visitors largely.

Fruit.—Mr. Davis had the best three bunches of Grapes in capital Gros Maroc. Mr. Chadwick coming 2nd with Alicante. Mr. Long had the best three dishes of dessert Apples in King of the Pippins, Cornish, Aromatic, and Blenheim Pippin. Mr. Fisher had the best three dishes of Kitchen Apples, and Mr. Carlandroy the best Pears in capital Beurré Bachelier, Buerré Leon le Clerc, and Beurré Diel. This latter exhibitor also staged a large collection of fruit, which attracted much attention, and Mr. Hudson, Gunnersbury House Gardens, also staged a fine collection of Apples and Pears. Vegetables were capital, Mr. Chadwick coming 1st in the class for six kinds with good samples. The competition was strong in the class for four dishes of Potatos. Mr. Chadwick was again 1st, with good Duke of Albany, Sutton's Seedling, Beauty of Hebron, and Vicar of Laleham.

CRYSTAL PALACE CHRYSANTHEMUM SHOW.

November 8 and 9.—At this exhibition, which took place on the above dates, there were plants, cut blooms, and other subjects sufficient to fill the eastern portion of the nave. At the extremity of the western portion, Mr. Head set up an imposing bank of Chrysanthemums in a bold semi-circle. The specimen plants were fairly good, the groups very attractive, forming side pictures to the lines of tables containing the cut blooms. There were some grand blooms of incurved varieties, and some showing the effects of a trying season, while the Japanese varieties were numerous and very fine indeed.

In the class for a group of plants to fill a space of 100 square feet, incurved varieties only, Messrs. J. Laing & Sons, Forest Hill, were the only exhibitors, and were awarded the 1st prize for a collection of leading varieties, showing good character. In the class for a similar sized group of Japanese varieties this firm was 1st with a highly effective group. The best group of any varieties filling a space of 50 square feet, set up by amateurs, came from Mr. J. Grovett, gr. to Dr. Helby, Sydenham.

Specimen Plants.—The best six incurved varieties came from Mr. Wesker, gr. to A. Heaves, Esq., Streatham Elms, Tooting, who had well-grown and flowered specimens. Mr. W. Clark, gr. to J. H. Lile, Esq., Brush Hill, was the only exhibitor of four incurved varieties. Rev. J. D. Clark had the best six specimen plants of Japanese varieties, staging well-grown and bloomed examples. The best four plants came from Mr. J. Weston, gr. to D. Martineau, Esq., Clapham Park. The best six trained specimen Pompons came from Mr. J. McKenzie, gr. to T. S. W. Cornwallis, Esq., M.P., Linton Park, Maidstone, whose plants were very formally trained.

Cut Blooms: Incurved Varieties.—These were a great feature, and in the class for forty-eight blooms, twenty-four incurved and twenty-four Japanese, there were fourteen collections. The 1st prize went to Mr. G. Inglefield, gr. to Sir J. W. Kelk, Bart., Tedworth, Marlborough, who had a very fine lot indeed—his incurved varieties were large, fresh, and finely finished; a certain number of duplicates being allowed.

The class for eighteen incurved varieties induced a keen competition. Here Mr. J. Horsefield, gr. to Lord Heytesbury, Wilts, was 1st with a very fine lot.

In the class for twelve varieties, there were numerous competitions also. Mr. W. Collins, gr. to J. W. Carlisle, Esq., Ponsbourne Park, Hertford, was 1st with highly-finished flowers generally.

Chinese Primroses were shown in groups of twelve, red, white, and double. The plants were fairly good; but it seems a pity to require that only plants should be shown raised from seed sown in the spring. This is absurd in relation to the double varieties.

Japanese varieties were numerous and fine, and the judges must have experienced considerable difficulty in making their awards. The best eighteen came from Mr. J. Blackburn, gr. to J. Scott, Esq., Chiselhurst, who had grand blooms. The best twelve, out of a large number, came from Mr. W. Slograve, gr. to Mrs. Crawford, Reigate, who had admirable blooms. The best six blooms of any one variety of Japanese came from Mr. P. Blair, who had superb blooms of Avalanche.

Reflexed Varieties.—These were somewhat sparingly shown, though some good blooms were staged. The best twelve, not less than eight distinct, came from Mr. Collins.

The best twelve large Anemone-flowered, in not less than eight varieties, came from Mr. M. Sullivan, gr. to D. B. Chapman, Esq., Roehampton.

Pompon varieties.—These were scarcely so numerously shown as might have been expected, still some good blooms were staged. The best twelve varieties, three blooms of each, came from Mr. G. Duncan, gr. to C. T. Lucas, Esq., Warnham Court, Horsham.

Anemone Pompons.—All the varieties included in this section are very attractive. Mr. G. Duncan was again 1st with excellent blooms.

Japanese Anemones.—Some good blooms of these were staged in collections of six, but not less than three varieties. In this class Mr. M. Sullivan was 1st.

Single varieties.—There was but one collection of twelve varieties of these, three blooms of each, which came from Mr. E. Chadwick, gr. to E. M. Nelson, Esq., Hanger Hill House, Ealing, who had some good examples.

SALISBURY CHRYSANTHEMUM SHOW.

Thursday and Friday, *November 7 and 8.*—The Wiltshire Horticultural Society held its fourth show of Chrysanthemums, combined with a show of fruits and flowers, in the new County Hall, on the dates above given, and which, taken on the whole, was a very creditable one, and the attendance good. There were seven or eight groups of Chrysanthemums, tasteful patterns. In the open class, Mr. E. L. Brown, Portland House, Salisbury, won the ten-guinea Challenge Cup for the second time, with a group of well-grown plants, the flowers large and fresh, and the colours well chosen and harmoniously blended, plants of the double white Primula and Maidenhair Fern forming the margin.

In the class for those who do not keep a gardener regularly, Mr. Haskins, Salisbury, secured, for the second time, the five-guinea Challenge Cup, with a group; and with another, exhibiting taste in setting up, Dr. F. W. Coates, Salisbury, scored a victory.

Cut Blooms.—These were shown in as good form, but not so numerously as was the case last year. The class about which the most interest centred was that for twenty-four blooms, not to include more than two of any one variety. The best prize—a 10 guinea cup, &c.—was secured for the second time by Mr. H. W. Ward, the Earl of Radnor's gardener, Longford, Salisbury, with blooms which were good all round, the best of which were Avalanche, very deep and full; Ralph Brocklebank, and Duchess of Albany. Mr. Wilkinson was 1st for a stand of twelve incurved varieties. Mr. H. Osman, Harefield Gardens, Romsey, was 1st, with a stand of Japanese. In this stand was a bloom of Edwin Molyneux, which measured fully 6 inches in depth. Mr. Ward was 1st for a stand of twelve reflexed blooms, and 1st for a like number of Anemone-flowered, these being large, fresh blooms, full of substance.

In the amateurs' class, Mr. Cennalls, gr. to Challoner Shenton, Esq., Winchester, won the 5 guinea cup, for the second time, with a stand of eighteen blooms. The local classes, which include the "ladies'," were creditably represented. The Challenge Cup, it may be said, has to be won three times running before it becomes the property of the exhibitor.

Fruit.—Although fruit was not shown extensively in quantity, there was only excellence to be observed. Mr. H. W. Ward, was 1st for a collection of six kinds, showing Muscat of Alexandria and Black Alicante Grapes, Queen Pine, a Melon, Pears and Apples. He was also 1st for Muscat Grapes, Trebbiana, and Gros Maroc, staging in each competition shapely bunches of good colour. Mr. James Chalk, gr. to George Read, Esq., Westwood, Salisbury, was 1st for black Alicante, and 2nd for white Muscat and Gros Maroc.

NORTH OF SCOTLAND ROOT, FRUIT, AND VEGETABLE ASSOCIATION.

The annual show of this Association was held on Saturday, the 9th inst., in the Volunteer's Hall, at Inverurie, N.B. The total number of entries for exhibition was 915, or, adding the exhibits of Messrs. Ben. Reid & Co., Aberdeen, 1005.

The fruit and vegetables were in every way a superior display, the different kinds of Apples and Pears staged being remarkable for size, and colour; and vegetables, as a whole, were very creditable. Mr. Ogston, gr. Bourtie, was the most successful competitor for boxes of vegetables, his selection being, apart from the quality, in excellent taste. Messrs. Ben. Reid & Co. showed a very choice collection of fruit, vegetables, and Potatos.

ST. NEOTS CHRYSANTHEMUM SHOW.

Monday, *November* 11.—A very pretty show took place in the Corn Exchange on the above date. This particular show excited more than ordinary interest, because in 1888 a Challenge Cup was subscribed for by the town, and offered for thirty-six blooms of Chrysanthemums, eighteen incurved and eighteen Japanese, and in order that the cup should become the absolute property of any exhibitor it had to be won two years consecutively, or three times altogether. Last year it was won by Mr. H. Adams, gr. to G. B. Hudson, Esq., Frogmore Hall, Hertford; and this year Mr. Adams determined to win it again, staging a very fine lot of blooms, though his ownership of the cup was stoutly contended for by Mr. R. Petfield, gr. to W. A. J. Thornhill, Esq., Diddington Hall, Huntingdon, who exhibited in good form. The Japanese were about equal in quality, but Mr. Adams gained points ahead with his incurved, and secured the cup.

LAW NOTES.

THE SPIRÆA DISPUTE.

"Sir,—I think Mr. C. Noble has unintentionally done the defendant an injustice. The plants bought by him from the growers in Holland were bought as S. palmata, and sold as such, and he was quite innocent of any intention to sell anything else but S. palmata; indeed, the plaintiff himself was the first

to make the suggestion that the defendant must have been deceived by the growers. If anyone intentionally deceives a purchaser, I quite agree with Mr. Noble that no punishment would be too severe for him, but that element was totally absent from the case, and I am quite sure that Mr. Noble would be the last man in the world to include the defendant in his denunciation, especially as the plaintiff, in answer to the judge, stated that he did not believe the defendant intentionally meant to deceive him. I will not enter into the merits of the case, but merely ask you to insert this letter in justice to the defendant.—Yours, &c., T. C. Goodchild, Secretary, the Nursery and Seed Trade Association, Limited."

Gardener and Employer.

There was a case in the Exeter County Court recently, the action of Edward Ford *v.* Mr. J. Freeman, coming on for hearing. Plaintiff is a gardener, and claimed £5 18*s.*, a month's wages, and the value of milk and vegetables, and the cost of railway fare, from Mr. M. J. Freeman, of the Grange, Withycombe, near Exmouth. In opening the case, Mr. Orchard stated that in June last Mr. Freeman advertised for a gardener. As a matter of fact, he was constantly advertising for gardeners and having disputes with them. Ford, who was living at Tunbridge, answered the advertisement, and correspondence followed. Writing on the January 15, Mr. Freeman said the wages would be £1 per week, use of a cottage, milk, and all vegetables except potatos. The place was a very beautiful one, and a "good conscientious man" would meet with just treatment there. It was only bad men, men who were "lazy, inefficient, and radically bad who could not get on with Mr. Freeman." The place was first class and deserved a first class hand. Constant employment would be given to a worthy man, and the place "must be seen to be appreciated." So, said Mr. Orchard, thought all the gardeners who had been there. Ford agreed to go to the place for a month on trial, but he found the situation not all that had been described, and on July 26, after three days' service, he told Mr. Freeman he should not stay longer than his month. Mr. Freeman immediately turned round, and ordered him off his premises. In fact, the police were sent for. Plaintiff asked for his wages, and Mr. Freeman told him he should not pay him a farthing unless the law compelled him to do so.—Plaintiff gave evidence in support of this statement.

Mr. Sparkes said his case was that plaintiff had been grossly rude and insolent, and was therefore liable to instant dismissal. Accoding to his instructions, before he was told to go, Ford told his master he did not like the looks of him when he took the situation.

Mr. Orchard: How many gardeners have you recently had and discharged?

Mr. Sparkes: I don't think this is admissible, as it will introduce collateral issues.

The Judge suggested that the question should be "how many gardeners have you had the misfortune to differ with and discharge peremptorily?" and it was put in this way.

Mr. Freeman: I don't know; they were such worthless characters, I would have nothing to do with them. Ultimately, Mr. Freeman said he had had eight or nine gardeners during the past twelve months.

His Honour thought Mr. Freeman in error as to what had taken place, and gave a verdict for the plaintiff for £4 8*s.*, the amount originally claimed, minus the railway fare.

Another case was now heard, in which John Winsley, late gardener for Mr. Freeman, claimed from him £1 8*s.* 6*d.* wages and compensation for wrongful dismissal. The same solicitors appeared as in the previous case. Winsley had to milk a cow, and after being milked one day it got away, and damaged a valuable plant. A few days before, Mr. Freeman had promoted Winsley, and said to him, "John, you stick to me, and I'll never forsake you." But now the cow had got loose, he called him offensive names and sent him about his business.

The Judge said, Mr. Freeman seemed to believe that the servants were almost in a conspiracy against him, that he became somewhat excited, acted hastily, and forgot the sequence of events. He gave a verdict for the plaintiff for the amount claimed. Mr. Freeman, upon hearing the decision, exclaimed, "Now, who let out my cow, Sir?" His Honour was sure he did not know. *Condensed from the "Devon Weekly Times."*

Charge of Stealing.

Mr. R. D. Blackmore, of Gomer House, Teddington, recently prosecuted his head gardener, named Tooley, for stealing £5 worth of Pears. The case came before the Sunbury Police court, when it was alleged by Frederick Kauffman, also in the prosecutor's employ, that he saw a greengrocer named Alfred Woodward, who carries on business in Teddington, drive to Tooley's cottage, and receive two large boxes of Pears, which he conveyed to his shop, and concealed under some Hay. Kauffman informed M r Blackmore of the proceeding, and the latter subsequently purchased two of the Pears from Woodward, and identified them as his property. He then charged his gardener with the theft, and the greengrocer with receiving the fruit. Tooley pleaded guilty, and was committed for three months with hard labour. Mr. Lyon, for Woodward, contended that there had been no wrongful act on his client's part, but the man was sent for trial.

Wages Dispute.

At the Uxbridge County Court on Tuesday, before His Honour Judge Hall, Charles Branch sought to recover from John Gough, of Harefield Grove Gardens, £6 19*s.* as wages for work done. Mr. Turner, of Old Jewry, London, solicitor, who appeared for the defendant, urged that Mr. Gough's contract had been in [with] a person named Nicholls, who had engaged Branch independentlyof Mr. Gough. Mr. Gough had paid Nicholls, and His Honour gave a verdict for the defendant, holding that there was no cause of action whatever.

The Weather.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (−) the Mean for the week ending November 11.	Accumulated Above 42°, for the Week.	Accumulated Below 42°, for the Week.	Accumulated Above 42°, difference from Mean since Jan. 1, 1889.	Accumulated Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (−) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1889.	Rainfall. Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	5 +	37	1	+ 179	— 0	3 —	210	35.7	8	23
2	7 +	47	4	— 10	— 4	6 —	175	23.9	26	29
3	6 +	46	0	— 16	— 27	7 —	160	22.1	27	27
4	4 +	44	4	— 29	+ 93	6 —	164	23.8	42	32
5	5 +	43	1	— 33	+ 40	6 —	155	24.7	21	29
6	3 +	42	1	+ 15	+ 50	7 —	155	23.5	4	31
7	7 +	50	0	+ 32	— 42	9 —	179	35.3	10	30
8	5 +	49	0	+ 30	— 28	7 —	170	27.9	11	29
9	3 +	52	0	— 112	+ 83	10 —	169	30.9	11	35
10	5 +	48	0	+ 45	— 64	8 —	201	33.7	3	26
11	4 +	50	0	— 26	— 16	7 —	180	31.7	10	32
12	2 +	65	0	+ 91	— 16	8 —	179	25.6	16	41

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

The Past Week.

The following summary record of the weather for the week ending November 11, is furnished from the Meteorological Office:—

"The *weather* has been very dull in almost all parts of the Kingdom, with a damp, close atmosphere and a good deal of fog and mist. Over the eastern and north-eastern districts, however, some fine, bright days have been experienced.

"The *temperature* has been much above the mean, the excess having ranged from 2° in the 'Channel Islands,' and 3° in 'England, S.,' and 'England, S.W.,' to 5° in 'Scotland, N.,' and 'England, N.W.,' 6° in 'England, N.E.,' and 7° in the east and west of Scotland. The highest of the maxima were registered (with few exceptions), either on the 7th or 8th, when the thermometer rose to 63° in 'Scotland, E.' and the 'Midland Counties,' 61° in 'England, E.,' and to between 58° and 60° in the other parts of the Kingdom. The lowest of the minima, which were recorded on the 5th, varied from 26° in the 'Midland Counties,' and from 29° to 31° in most other districts to 36° in 'Ireland, N.,' and 44° in the 'Channel Islands.' During the greater part of the week the minima were exceptionally high for the time of year.

"The *rainfall* has been less than the mean in all districts, the fall in most places having been scarcely appreciable.

"*Bright sunshine* has been very deficient at nearly all stations; in 'Scotland, E.,' however, the percentage of the possible amount of duration was 26, in 'England, N.E.' 27, and in 'England, E.' 42."

Obituary.

William Davies.—The death is announced of Mr. William Davies, son of Mr. Isaac Davies, of Ormskirk, who died on October 31, at the age of thirty-five years. Originally engaged in the Liverpool cotton trade, Mr. W. Davies entered the nursery business in September, 1875, and, after seven years' assiduous attention to its details, he was taken into partnership with his father, and the firm became known as Isaac Davies & Son. One effect of the partnership was, that the head of the firm was thereby relieved of much of the practical part of the business, and was able to give time and thought to the raising of new varieties of hardy Rhododendrons, for which the firm has become noted of late years. Of somewhat delicate health, Mr. William Davies contracted a severe cold in April last, which developed into lung disease, and caused his death. The deceased took a very active part in connection with religious and philanthropic work at Ormskirk, and he is deeply mourned by a large circle of friends.

The Late Mr. John Ball.—We understand, from *Nature*, that the late Mr. John Ball, F.R.S., has bequeathed his botanical library and herbarium to Sir Joseph Hooker, to the Director of the Royal Botanic Gardens at Kew for the time being, and to the President of the Royal Society for the time being, requesting them to give the same to such person or persons or public institution in this country, the British colonies, or elsewhere in the world, as they or any two of them may select, with the sole object of promoting the knowledge of natural science. Right is, however, reserved for Kew to select previously such specimens or books as it may want. What a contrast this will presents to that of another naturalist, who thought the search after the truth (which is science) could be promoted by sealing up his collections for a quarter of a century. In referring to this matter we may mention, that we have only just ascertained the date of this malicious will, which was April 11, 1888. A few days after, the testator received, at the Ghent Quinquennial Exhibition, from the hands of the King of the Belgians a Gold Medal, given in honour of the Professor, and as a testimony of gratitude from the Royal Agricultural and Botanical Society of Ghent. Surely the recipient of the Medal must have felt that he had forfeited his claim to the gratitude of his fellows.

VARIORUM.

MUCCA-MUCCA.—Mucca-mucca, Montrichardia arborescens, Schott, is probably the largest arborescent Aroid in the world. The stems are simple or branched, a foot and a half in circumference, and 20 feet or more high, in situations where they reach full development. The leaves, which are 1 to 1½ feet each way, with deep sinus and auricles, are clustered at the top of the stem, erect or spreading, held up at an angle, usually an acute one with the petioles, the back being thus turned outwards, with prominent horizontal whitish primary veins, which are very conspicuous in the light green pellucid substance. The flowers are produced among the leaves, singly, from the axils of the footstalks; the spathes, which are the shape of grocers' sugar-papers, being erect, about a span long, creamy-white inside, and green out, deciduous, as is the male portion of the spiki-form spadix, leaving the fruit exposed in the form, when fully developed, of a large Potato, the male flowers having been aggregated separately in the outer deciduous part, and the female in the more permanent lower. When ripe the fruit gradually breaks up, in divisions like the cells of honeycomb, and the seeds, which are the size of marbles, one in each division, enclosed in pulp, drop, and float on the river in which they germinate, if not soon stranded in a situation suitable for growth. Fish and other animals, however, eat many of them. In places where drift accumulates, large quantities are often found, floating or stranded, all, if germinated, with a single leaf-shoot protruding, the plant being a monocotyledon. There are two species recognised now, M. arborescens and M. aculeata, one being armed in the stem with copious prickles, the other quite smooth. Both were considered one species for many years, and still go by the same common name of Mucca-mucca in British Guiana, where they form perhaps the commonest vegetation of the country, and certainly to travellers on the rivers the most familiar and obtrusive. From the estuaries of the rivers extending many miles inland, Mucca-mucca serves an important physical purpose in protecting the banks from wash, and in making up new ground. It lines the banks in broad bands of vivid green, growing in the untraversable mud and water, forming dense and absolutely impenetrable thickets. Less abundantly it is found in the shaded creeks, and in all very wet alluvial places. Its greatest luxuriance is, however, displayed within tidal influence on the rivers. The stems in specific gravity are exceedingly light—light as cork, or even lighter when dry—and contain a large quantity of fibre that might, one would think, be turned to some useful commercial purpose. The natural range of Mucca-mucca is from Guadeloupe and Trinidad to Guiana. It was first described and figured by Plumier, two centuries ago. Linnæus ascribed it to the genus Arum, and other botanists subsequently to Caladium. Krueger differentiated the second species, aculeata, and created the genus Montrichardia for the reception of both. *Demerara Argosy.*

MARKETS.

COVENT GARDEN, November 14.

Market quiet. Kent Cobs very short, prices steady. *James Webber, Wholesale Apple Market.*

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0 9	...	Mustard and Cress, punnet	0 4	...
Beet, red, per dozen	1 0	2 0	Onions, per bunch	0 5	...
Carrots, per bunch	0 6	...	Parsley, per bunch	0 4	...
Cauliflowers, each	0 3	...	Shallots, per lb.	0 6	...
Celery, per bundle	1 6	2 0	Spinach, per bushel	2 0	...
Cucumbers, each	0 6	0 9	Sprouts, per lb.	0 4	...
Endive, per dozen	1 6	...	Tomatos, per lb.	0 9	...
Herbs, per bunch	0 4	...	Turnips, per bunch, new	0 5	...
Leeks, per bunch	0 3	...			
Lettuce, per dozen	1 6	...			
Mushrooms, punnet	1 6	...			

POTATOS.—The only marked alteration in the trade is the demand for prime samples and good quality, showing fully 10*s.* per ton advance. *J. B. Thomas.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	7 0	Lemons, per case	21 0	45 0
— Nova Scotia, brl.	8 0	30 0	Pine-apples, Eng., lb.	1 6	3 0
Cobs, per 100 lb.	140 0	...	— St. Michael, each	2 0	6 0
Grapes, per lb.	0 6	2 6			

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Evergreens, in var., per dozen	6 0	24 0
Aspidistria, doz.	18 0	42 0	Ferns, in var., doz.	4 0	18 0
— speci. plants, each	7 6	10 6	Ficus elastica, each	1 6	7 0
Begonias, dozen	4 0	12 0	Foliage plants, various, each	2 0	10 0
Chrysanth., dozen	6 0	15 0	Marguerites, doz.	6 0	12 0
— extra large, each	2 0	5 0	Palms in var., each	2 6	21 0
Cyperus, per dozen	4 0	12 0	Pelargoniums, scarlet, per dozen	4 0	6 0
Dracæna terminalis, per dozen	30 0	60 0	Roman Hyacinths, per dozen pots	9 0	12 0
— viridis, per doz.	12 0	24 0	Solanums, per dozen	6 0	12 0
Epiphyllum, per doz.	12 0	18 0			
Ericas, various, doz.	8 0	24 0			
Euonymus, in var., per dozen	6 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Marguerites, 12 bun.	3 0	6 0
Azaleas, doz. sprays	0 9	1 6	Narciss., paper-white, French, doz. bun.	4 0	6 0
Bouvardias, per bun.	0 6	0 9	— Eng., doz. sprays	1 0	1 6
Calla æthiopica, 12 bl.	3 0	6 0	Pelargoniums, 12 spr.	0 9	1 6
Camellias, white, doz.	2 0	4 0	— scarlet, 12 spr.	0 4	0 6
— various, per doz.	1 0	2 0	Primulas, double, 12 sprays	1 0	1 6
Carnations, 12 blms.	1 0	2 0	Roman Hyacinths, Eng., doz. sprays	0 9	1 6
Chrysanth., 12 bun.	3 0	9 0	Roses, Tea, per doz.	1 0	3 0
Chrysanth., 12 blms.	0 6	3 0	— coloured, dozen.	2 0	4 0
Dahlias, 12 bun.	2 0	4 0	— red, per dozen	1 0	2 0
Eucharis, per dozen	3 0	4 0	— Safrano, dozen	0 6	1 0
Gardenias, 12 blooms	2 0	4 0	Stephanotis, 12 spr.	3 0	6 0
Gladioli, 12 sprays	1 0	1 6	Tuberoses, 12 blms.	0 6	1 0
Heliotropes, 12 spr.	0 3	0 6	Violets, 12 bun	1 0	2 0
Lilac, white, Fr., bun.	6 0	7 0	— French, bunch	1 6	2 6
Lilium, var., 12 bl.	2 0	6 0	— Parma, 12 bun.	3 0	4 0
Maiden Hair Fern, 12 bun.	4 0	9 0			
Mignonette, 12 bun.	2 0	4 0			
— French, per bun.	1 6	2 0			

ORCHID-BLOOM in variety.

SEEDS.

London: *Nov.* 13.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report that at the remarkably low prices now ruling there is somewhat more business doing in red Clover seed. There is no charge in either Alsike, White, or Trefoil. Rye-grasses are neglected. Prohibitory high prices are asked for the new Kœnigsberg Tares. Blue Peas are held for more money, choice samples are getting scarce. There is still an inquiry for Rye. Hemp and Canary seed are now exceedingly cheap. Feeding Linseed keeps steady. Mustard and Rape seed are firm.

CORN.

Averages.—The following is an official statement showing the average price of British corn, imperial measure, in the week ended November 9:—Wheat, 30*s.* 3*d.*; Barley, 31*s.*; Oats, 17*s.* 1*d.* For the corresponding period in 1888:—Wheat, 31*s.* 8*d.*; Barley, 28*s.* 2*d.*; Oats, 16*s.* 2*d.*

FRUITS AND VEGETABLES.

Spitalfields: *Nov.* 13.—English Apples, 3*s.* to 6*s.* per bushel; Pears, 1*s.* 6*d.* to 3*s.* per half-sieve; English Tomatos, 2*s.* 6*d.* to 4*s.* 6*d.* per 12 lb.; Foreign Tomatos, 1*s.* 6*d.* to 2*s.* 6*d.* per box; Cabbages, 1*s.* to 2*s.* per tally; Savoys, 1*s.* to 3*s.* 6*d.* do.; Cauliflowers, 3*s.* 6*d.* to 6*s.* do.; Brussels Sprouts, 1*s.* to 1*s.* 6*d.* per half-sieve; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Greens, 9*d.* to 1*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Parsley, 2*s.* to 2*s.* 6*d.* do.; Celery, 4*s.* to 8*s.* per dozen bundles; Horseradish, 1*s.* to 1*s.* 3*d.* per bundle; Parsnips, 4*d.* to 8*d.* per score; Beetroots, 4*d.* to 6*d.* per dozen; Leeks, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Cos Lettuce, 4*d.* to 8*d.* per score; Mustard and Cress, 1*s.* to 2*s.* per dozen baskets; Endive, 1*s.* to 2*s.* per dozen; Carrots, 20*s.* to 32*s.* per ton; English Onions, 6*s.* 6*d.* to 7*s.* per cwt.; Spanish Onions, 5*s.* to 6*s.* per case; Dutch Onions, 5*s.* 6*d.* to 6*s.* per bag of 110 lb.; Belgian Onions, 5*s.* 6*d.* to 6*s.* do.

Stratford: *Nov.* 12.—The trade and supply has been excellent during the past week:—Cabbages, 2*s.* to 3*s.* per tally; Savoys, 3*s.* to 4*s.* 6d. do.; Cauliflowers, 4*s.* to 6*s.* do.; Turnips, 20*s.* to 30*s.* per ton; Carrots (household), 28*s.* to 32*s.* do.; do. (cattle feeding), 22*s.* to 25*s.* do.; Mangels, 13*s.* to 16*s.* do.; Swedes, 14*s.* to 18*s.* do.; Onions, English, 130*s.* to 140*s.* do.; do. Dutch, 5*s.* 6*d.* to 6*s.* per bag; do. German, 6*s.* to 6*s.* 6*d.* do.; do. Oporto, 6*s.* 6*d.* to 8*s.* do.; Watercress, 6*d.* per dozen; Pears, 3*s.* to 8*s.* per bushel; Celery, 5*s.* to 8*s.* per dozen rolls; Horseradish, 15*s.* to 18*s.* per dozen bundles.

POTATOS.

Borough and Spitalfields: *Nov.* 12.—With some accumulation of supply the market is weaker, and what demand is noticeable is confined to the best qualities. Regents, 50*s.* to 70*s.*; Hebrons, 60*s.* to 80*s.*; Magnum Bonums, 45*s.* to 80*s.*; Imperators, 45*s.* to 70*s.* per ton.

Spitalfields: *Nov.* 13.—Quotations: Magnums, 45*s.* to 60*s.*; Regents, 55*s.* to 70*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 60*s.* to 65*s.*; Early Rose, 50*s.* to 60*s.* per ton.

Stratford: *Nov.* 12.—Quotations: Magnums, light, 50*s.* to 65*s.*; do., dark, 45*s.* to 50*s.*; Hebrons, 50*s.* to 70*s.*; Imperators, 45*s.* to 60*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime Clover, nominally, 115*s.* to 126*s.*; current prime, 80*s.* to 98*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 100*s.*; inferior, 20*s.* to 50*s.* Straw, 20*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

Intelligent Readers, *do* please Note *that letters relating to* Advertisements, *or to the supply of the Paper, should be addressed to the* Publisher, and not to the Editor. All communications intended for publication, as well as specimens and plants for naming, should be addressed to the Editor. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible. Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

Books.—Trees, Shrubs, and Conifers: *J. P. Handbook of Hardy Trees, Shrubs, and Herbaceous Plants*, by Decaisne, Naudin, and Hemsley. (Longmans & Co.)—Herbaceous Plants: *T. C. Handbook of Hardy Herbaceous and Alpine Flowers*, by W. Sutherland (William Blackwood & Sons). The above is a good manual on the subject, but it does not contain their "history."

Carnations: *Angelica.* Probably wireworm (see p. 561 of this number).

Cyclamens Dying: *W. W.* The base of the corm has been eaten away by wireworms or weevils. Try to trap by placing pieces of Carrot about the house or frame at night.

Diseases of Plants: *C.* Prof. Marshall Ward's book is published by the Society for Promoting Christian Knowledge at the cost of a few shillings.

Ferns from South Africa: *Wm. Juby.* 1, Polypodium (Niphobolus) Africanum; 2, P. incanum; 3, Adiantum æthiopicum; 4, Nephrodium (Lastrea) calcaratum; 5, Adiantum Paradisea, Baker (new; see description); 6, Cyathea Dregei.

Forcing Flowers: *Constant Reader.*—Daffodils will not force very early with safety; Dicentra (Diclytra) spectabilis and the Polyanthus, Narcissus in its varieties N. Burzelman minor may be forced gently into bloom; but they should have been potted in August or September, and have got plenty of roots made in a dark place previously to being put into heat. Roses cannot be induced to part with their leaves. You must wait. Roses for very early work want special preparation.

Growth on Gravel Walk: *Rev. W. D.* Nostoc, a species of gelatinous Alga, growing on rocks and bare places.

Lily of the Valley, Forced: *Constant Reader.* Put them into a close hotbed or propagating box, with a perfectly regular temperature of bottom heat of 95°; for very early blooms, and cover with 6 inches of moss or cocoa fibre. Blooms will commence to show in about seventeen days or less, when the pots of clumps or crowns—the latter being the best for producing blooms in early winter—must at once be removed, or at least the most of the covering matter, and in a day or two the plants may be put into a cooler part of the pit or frame, and be gradually inured to the light. The whole operation requires a good deal of care. No water should be given whilst the roots are in bottom heat, but they should have had a soaking previously. Jannock's Lilies are as good as any from Berlin,

Names of Fruits: *A. C.* 1, Dutch Mignonne; 2, Duke of Devonshire; 3, Minshall Crab; 4, Beurré superfin; 5, Urbaniste.—*C. T.* 1, Waltham Abbey Seedling; 2, Golden Noble; 4, Court Pendu Plat; 5, Old Nonpareil.—*W. B. Epsom.* 1, Beurré Bachelier; 2, Colmar d'Aremberg; 4, Maréchal de la Cour; 5, Knight's Monarch; 6, Passe Colmar.—*B. Ashton.* 1, Gravenstein; 3, Northern Greening; 4, Emperor Alexander; 5, Small's Admirable; 7, Cellini; 8, King of the Pippins. Others not recognised.—*Eversfield.* 1, Emperor Alexander; 2, Hawthornden; 3, Manks Codling.—*J. T. P.* 1, Yellow Buckland; 2, Rymer; 3, not recognised.—*A. B. C.* 1, Stones; 2, 7, 10, Dumelow's Seedling; 4, King of the Pippins; 5, Ribston Pippin; 3, Manks Codlin; 8, Alfriston; 9, Claygate Pearmain.—*Jas. McDougall.* Pear quite decayed; Apples 2, Carlisle Codlin; 3, Duchess of Oldenburg.—*C. C.* Apple Margil.—*W. Troughton.* 1, Warner's King; 2, Pott's Seedling; 3, Cox's Pomona; 4, Carlisle Codlin.—*J. Elsey.* 1, Beurré Diel; 2, Uvedale's St. Germain; 3, Glout Morçeau; 4, Beauty of Kent; 5, Nonesuch; 6, Dumelow's Seedling; 7, Alfriston; 8, Scarlet Nonpareil.

Names of Plants.: *Dr. P.* Mormodes luxatum.—*J. Leaver.* Tritonia fenestrata.—*Remate.* Asparagus plumosus.—*S. T.* 2, A Cypress; we cannot tell which one; 3, A Juniper, probably J. sinense; 4, Pittosporum tenuifolium; 5, Diplopappus chrysophyllus—not a conifer; 6, Thuya Vervaeneana. The others next week.—*J. Phœnix.* Please send a flowering specimen.

Show Awards: *G. P.* The whole of the trouble has arisen by reason of the schedule-maker having used the word *varieties* where he meant *kinds*. Any exhibitor would, therefore, be within his right in putting up as a collection eight varieties of, say, Peas, Potatos, or what not, which would be quite inconsistent with the intention of the schedule-framer, and would constitute a collection of varieties, but only one kind. The judges properly gave the awards to those exhibitors who had the best grown and largest number of distinct *kinds*.

Superphosphate for Slugs: *W. K.* We do not know where this may be bought. Perhaps our correspondent, Mr. Baillie, of Luton Hoo, will kindly oblige.

Vines and Borders: *H. B. P.* The shanking is due probably to a too cool state of the border, and the mulching has assisted to make matters worse. No harm will come to the Vines by leaving the border uncovered, except you force early, and then it should be protected with a foot deep layer of leaves, and this should be in its place now, so as to retain the sun-heat in the soil. Cover this with tarpaulin or shutters. If the shanking is very bad, lift the Vines piecemeal. Use Thomson's Vine Manure scratched in on the surface.

CATALOGUES RECEIVED.

Thos. Kennedy & Co., 106 and 108, High Street, Dumfries, N.B.—Forest, Fruit, and Ornamental Trees.

Charles Fraser, St. Martin's-at-Palace, Norwich—Horticultural Buildings, &c.

Heinrich Strauss, Köln-Ehrenfeld, Germany—Orchids, Palms, and Palm Seeds.

Howden & Co., Inverness, N.B.—Nursery List.

William Etherington, Swanscombe, Kent—Chrysanthemums.

Bruant, Boulevard St. Cyprien, Poitiers, Vienne, France—Trees, Shrubs, &c.

Dicksons & Co., 1, Waterloo Place, Edinburgh, N.B.—Herbaceous and Alpine Plants, &c.

Wood & Ingram, The Nurseries, Huntingdon—Nursery Stock.

Charles Van Geert, 11, Rue de la Province, Anvers—General Catalogue of Trees, Shrubs, Azaleas, &c.

Martin Grashoff, Quedlinburg, Germany—Seed List (Wholesale).

Communications Received.—E. J. L.—Cmte. de K.—L. L—M. Godefroy.—P. W.—E. C.—F. W. B.—J. V. & Sons.—E. C. L. (next week)—H. E.—W. T—W. R.—W. B. H.—H. W.—E. J.—W. J. M.—F. B.—W. H.—F. Parent.—Old Subscriber.—R. S. P.—J. E. Nelson.—W. T.—D. W.—W. W.—F. B. S.—M. L.—Rev. W. H. Sewell.—J. R. H.—D. D. (no space this week).—W. S.—G. H.—P. W.—X. Y. Z.—H. W. W., *Journal of Horticulture.*—A. B., *Pollen of Oranges* (kindly send address).—J., Burnley.—Ernst Benary (many thanks).—J. R.—W. H. T.—L. L.—E. J. L. (next week).—J. V. & Sons.—S. T.—F. W. B. (many thanks).—W. B.—E. C. L. (next week).

ECONOMY IN THE GARDEN.—WOOD AND SON'S GUINEA CASK of SPECIALTIES carriage paid, including Peat, Loam, Potting Composts, Sand, Two Special Prize Manures, Sticks, Labels, Tobacco Paper, or any other requisites, which can be varied to suit the requirements of Customers. Send for List of Particulars and our interesting Pamphlet on Fertilising Moss.
N.B.—COCOA-NUT FIBRE, per sack, 1s.; 10 sacks, 8s. 6d.; Truckloads at special prices.
SPECIAL PRICE, LOOSE FIBRE PEAT (all waste extracted), and LEAF MOULD, 1s. per bush.
WOOD AND SON, Wood Green, N.

GENUINE GARDEN REQUISITES, as supplied to Royal Gardens, &c.
SPÉCIALITÉ TOBACCO PAPER, the best and strongest in the market, 10d. per lb., 28 lb. for 21s.
SELECT ORCHID PEAT, 8s. per sack, 5 for 35s.
SOILS and MANURES of finest quality, and GENERAL SUNDRIES. Price List free.
W. HERBERT AND CO., Hop Exchange Warehouses, Southwark Street, London, S.E.

ORCHID PEAT, best quality; BROWN FIBROUS PEAT for Stove and Greenhouse use. RHODODENDRON and AZALEA PEAT. Samples and Prices to WALKER AND CO., Farnborough, Hants.

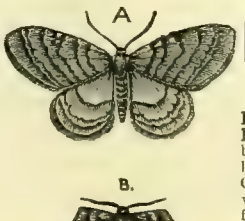
COCOA-NUT FIBRE REFUSE.—Newly made, the same as supplied to the Royal Horticultural Society. Truck-load of 2 tons, £1; free on to Rail, L. B. S. C. and S. E., £1 5s.; in Bags, 20, 15s.; 40, £1 8s. Cash with order.
J. STEVENS AND CO., 153, High Street, Battersea, S.W.

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NORMAL FERTILISER
For GREENHOUSE or GARDEN.

Price:—	7 lb.	14 lb.	28 lb.	56 lb.	1 cwt.
	2s.	3s. 6d.	5s. 6d.	9s.	14s.

And in 6d. and 1s. packets.
To be had of Seedsmen and Florists, or the NORMAL MANURE COMPANY, Ltd., 121, Bishopsgate Street Within, E.C., and Farnham Road, Guildford. Usual Trade Discounts.
Wholesale of Messrs. HURST AND SON, 152, Houndsditch, London

!!! PEAT !!!
SELECTED specially for Orchids, Choice Plants, Ferns, and Rhododendrons. PEAT-MOULD, LEAF-MOULD, LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, COCOA FIBRE REFUSE, CHARCOAL, &c. A First-class Stock of FOREST, FRUIT, and ROSE TREES, CONIFERS, RHODODENDRONS, &c. PEAT MOSS LITTER.
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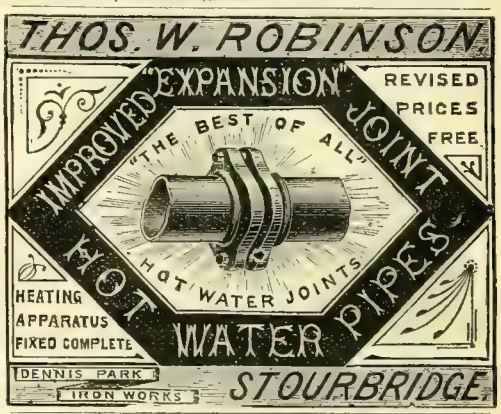
A. Male. B. Female.
HORNE'S TREE DRESSING
For Catching the Winter Moths upon Fruit Trees should be applied at once. Where trees have been infested with Luper Caterpillars this summer, its use will prove invaluable. Write for particulars and price,
W. HORNE,
PERRY HILL, CLIFFE, ROCHESTER, KENT.
[Unsolicited Testimonial.]
"*Boughton, Malherbe, Maidstone, Nov.* 5, 1889.—DEAR SIR,—I am much pleased with the Tree Dressing, I am catching great numbers on it. Our Trees are large, and on many of them I find from 100 to 150 on a single Tree.—Yours faithfully, R. FOX."

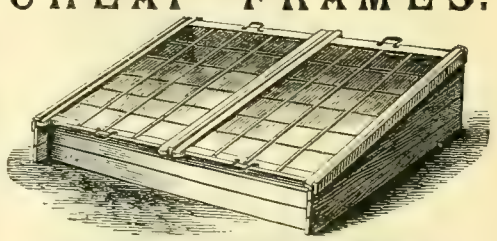
BENTLEY'S INSECTICIDE.
Mr. G. WYTHES, *Syon House, writes:*—
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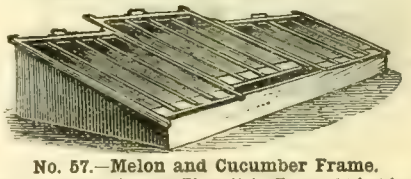
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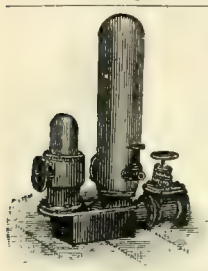
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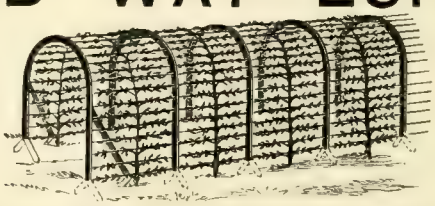
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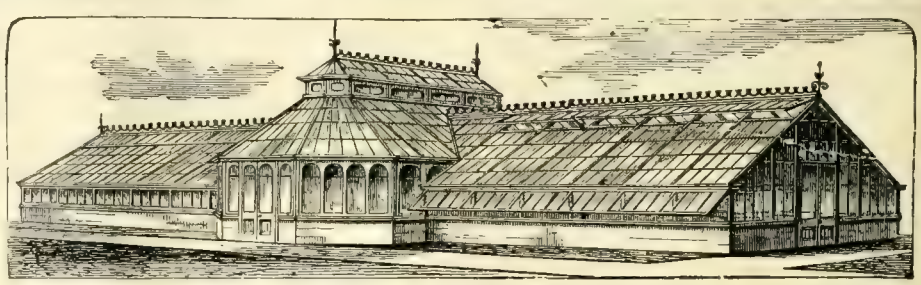
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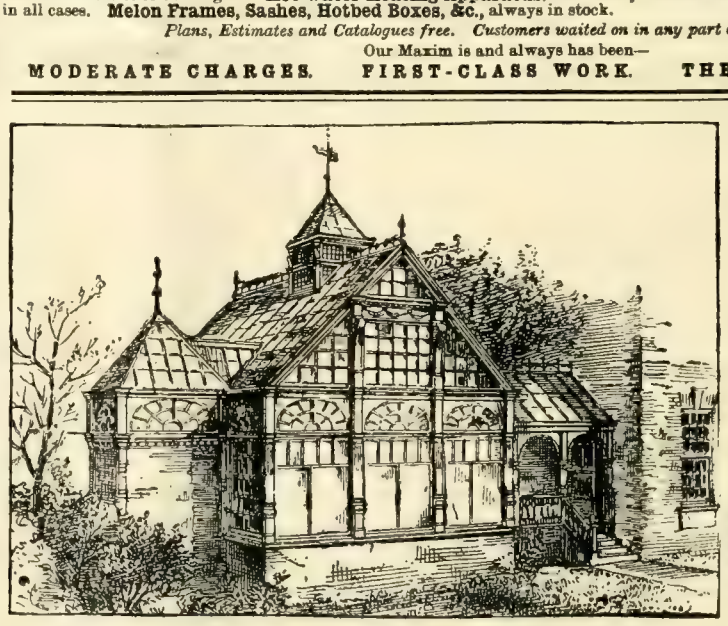
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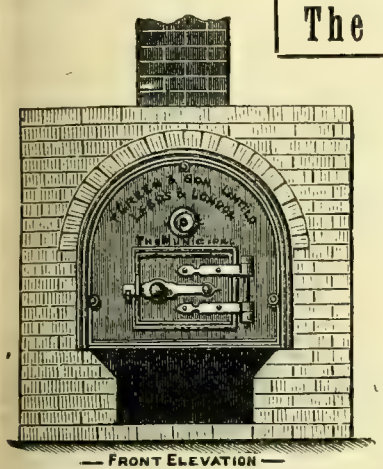
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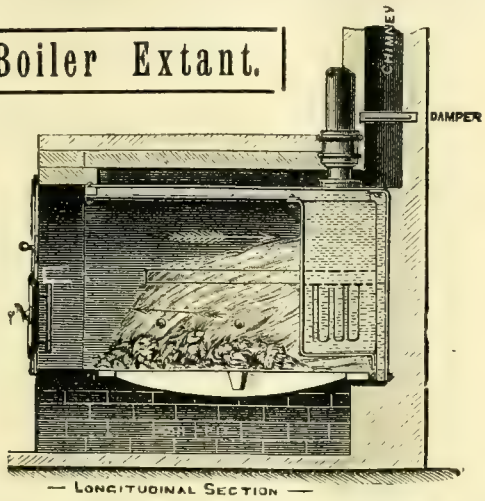
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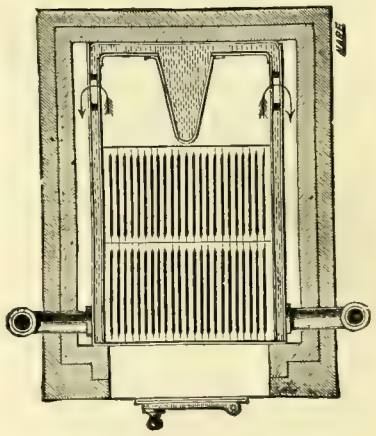
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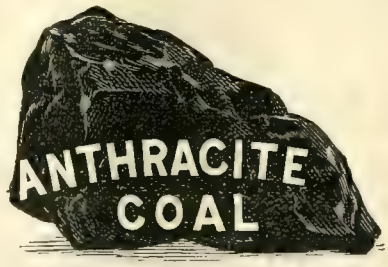
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Publishing Office: 134, Rue de Bruxelles, Ghent, Belgium.

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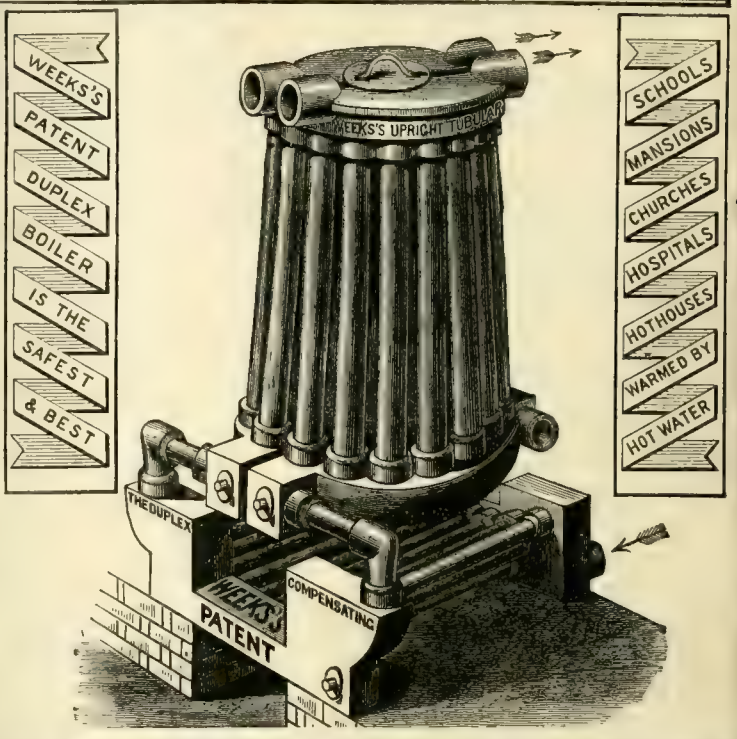
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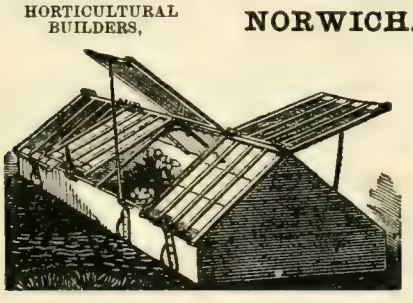
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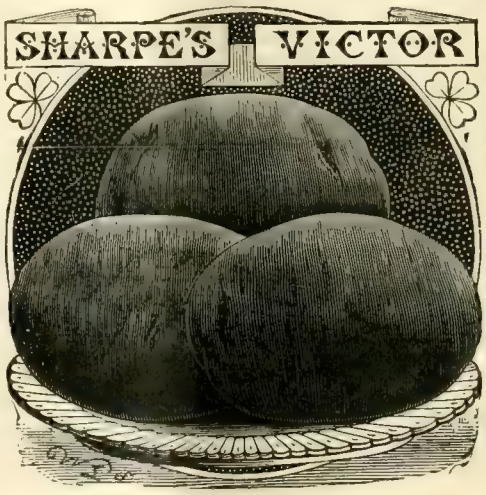
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The Gardeners' Chronicle

ESTABLISHED 1841.

No. 152.—Vol. VI. {Third Series.} SATURDAY, NOVEMBER 23, 1889. [Regt. as a Newspaper. {Price 3d Post-Free, 3½d.

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Vol. V., Third Series, JAN. to JUNE, 1889.

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BLACK HAMBURGH VINES. Three splendid Fruiting Canes in pots for sale.
T. STONE, The Downs, St. Neot's.

STANDARD CHERRIES.—Fine Trees with fibrous roots. FIGS in pots. FRUIT TREES and ROSES of the best kinds. Wholesale and Retail. Price LIST free.
WILL TAYLER, Osborn Nursery, Hampton, Middlesex.

CHOICE FLOWERS—CHOICE FRUIT.—Highest Market Prices guaranteed. Prompt cash.
HENRY RIDES, Covent Garden, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

J. W. BARNHAM (late of Squelch & Barnham) RECEIVES ON COMMISSION, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

WANTED, good hard Maréchal Niel, Niphetos, Perle des Jardins, ROSE GRAFTS.—Price per 100 to J. CHEAL AND SONS, Crawley.

WANTED, good strong Plants of GORDONIA PUBESCENSE and G. LASIOULBUS.
Apply, stating particulars as to age and price, to JAMES RUSSELL, The Gardens, Poltallock, Lochgilphead, N.B.

WANTED, FOR CASH, 2000 SPRUCE FIR TREES.
Sizes, 2½ to 4 feet.
Suitable for Christmas Trees.
Apply by Letter, stating lowest Price, to 57, Adolphus Street, Bradford.

WANTED, offers of Surplus Stock, DUTCH BULBS.
Samples and Prices to G. PHIPPEN, F.R.H.S., Reading.

BOOKS on ROSES by WM. PAUL, F.L.S.—"The Rose Garden," ninth edition, 4to, 360 pp., fifteen coloured plates, numerous engravings, 17s. 6d. nett; the same 8vo, without plates, 8s. 9d. nett. "Roses in Pots," sixth edition, illustrated, 2s. "Roses and Rose Culture," sixth edition, illustrated, 1s. The *Journal of Horticulture* says :—"The best works on Roses are those by Mr. Wm. Paul."
Wm. PAUL AND SON, Waltham Cross, Herts.

Trade Offer of Small Palms.

W. ICETON has a very fine Stock of the leading kinds of PALMS for growing on. Prices very low for large quantities.
W. ICETON, Putney Park Lane, Putney, S.W.

BARR'S NEW DAFFODIL "MRS. GEORGE CAMMELL," The Great Spanish Beauty. Amongst Daffodils this is the most distinct in character, and the most refined in beauty; perfectly hardy. 21s. per dozen, 2s. each; extra large bulbs, 30s. per dozen, 3s. each.
Barr's General Bulb Catalogue free on application.
Barr's Daffodil and Plant Catalogue free on application.
Barr's Rare Species of Crocus and Meadow Saffron List on application.
BARR AND SON, 12 and 13, King Street, Covent Garden, W.C.

QUICK.—40,000 2-yr. old, strong and healthy, 18s. per 1000, free on rail, Lynn Docks, G.E.R. Apply to NORFOLK ESTUARY CO., 20, Whitehall Place, S.W.

NEW CHRYSANTHEMUMS.—Mrs. Alpheus Hardy, Mrs. A. Carnegie, Ada Spaulding, Stanstead Surprise, and other Novelties.
Descriptive CATALOGUE free.
JOHN LAING AND SONS, Stanstead Nurseries, Forest Hill, S.E.

HYACINTHS.—Selected Bulbs, finest named varieties for bedding or for forcing; guaranteed true to name, 2s. 6d. per dozen, 16s. per 100. These are the very best that can be obtained for bedding, and being in named varieties the colours are all distinct, and produce a much finer effect than the mixed shades usually offered. CATALOGUES free.
J. R. PEARSON AND SONS, Chilwell Nurseries, Notts.

VIRGO'S NEW FORGET-ME-NOT, "BLUE PERFECTION."—The queen of spring bedding plants. Now is the time to plant to produce a sensational display next spring. Plants 9d. each; 6s. per dozen.
J. H. VIRGO, Florist, Walton-in-Gordano, near Clevedon.

DOUBLE WHITE NARCISSUS.—About 20 bushels for Sale. Price 20s. per bushel, or 30s. per 1000, on rail. Sample 50 free for 2s.
J. J. CLARK, Goldstone Farm, West Brighton.

MOSS ROSES for SALE. 5000 strong Plants.
Apply, J. NEIGHBOUR, Cranford, Hounslow, Middlesex.

HORSE CHESTNUTS for Avenues, for immediate effect, 12 to 15 feet, very strong, frequently transplanted.—THOS. WOODFORD, The Nurseries, Atherstone.

NEW RASPBERRY, THE VICTOR.—The best flavoured Raspberry in cultivation. Very fine and heavy cropper; well suited for preserving. Canes 5s. per dozen, 35s. per 100. The Trade supplied on liberal terms.
J. POLE, Inkpen, Hungerford.

PLANTING SEASON.—FRUIT TREES, COB NUTS, FOREST TREES, and SHRUBS. Several thousand for sale, all well rooted, strong and healthy.—Apply, TODDINGTON ORCHARD CO., Winchcomb, Gloucestershire.

STRAWBERRIES.—Leading kinds, in 3½-inch pots, for immediate Planting or Potting on for Forcing. Send for LIST.
FRANCIS R. KINGHORN, Sheen Nurseries, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

FASTOLF RASPBERRY CANES, For sale, 30s. per 1000, 4s. per 100.
Terms, Cash before delivery, F. O. R., Wisbech.
Apply, MANAGER, Osborne House Farm, Wisbech.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday and Saturday Next.

ROSES, FRUIT TREES, BORDER PLANTS, SPIRÆAS, and DUTCH BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, November 27 and 30, at half-past 12 o'Clock precisely, extensive consignments of BULBS from HOLLAND, comprising fine COLLECTIONS of HYACINTHS, TULIPS, CROCUSES, NARCISSUS, some choice sorts of GLADIOLI, LILIUMS, IRIS, ANEMONES, SNOWDROPS, SCILLAS, &c. Also AZALEA MOLLIS from Ghent, Standard and Dwarf ROSES, FRUIT TREES, BORDER PLANTS in variety, LILY of the VALLEY CROWNS, SPIRÆAS, &c.

On view morning of Sale, and Catalogues had.

Thursday Next, November 28.

10,000 LILIUM AURATUM, and 500 Lots of Dutch BULBS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, November 28, at half-past 12 o'Clock precisely;—10,000 Grand Bulbs of LILIUM AURATUM, &c., just received from Japan, in very fine condition; AMARYLLIS and TUBEROSES from the Cape; White Roman HYACINTHS, Paper-white and Double Roman NARCISSUS from France for forcing; 2000 LILY of the VALLEY Crowns; SPIRÆAS, Beautiful Hardy DAFFODILS in variety. Also several hundred lots of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, and other Bulbs, &c.

On view morning of Sale, and Catalogues had.

Thursday, December 12.

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS begs to announce that his next SPECIAL SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 12, at half-past 12 o'Clock precisely, and he will be glad if Gentlemen desirous of ENTERING PLANTS FOR THIS SALE will please SEND LISTS AS SOON AS POSSIBLE.

Salvage Stock of a Seed Merchant, Bedford.

MESSRS. C. AND H. WHITE will SELL by AUCTION, on behalf of whom it may concern, at the Premises, St. Paul's Square, Bedford, on WEDNESDAY NEXT, November 27, at 12 o'Clock precisely, the SALVAGE STOCK resulting from the recent fire, the greater portion of which is but slightly damaged, comprising about 2000 bushels of ROOT and VEGETABLE SEEDS, BEANS, PEAS, and other items.

Catalogues of C. B. HALLILEY, Esq., Solicitor, Bedford; and at Messrs. C. AND H. WHITE'S Offices, 262, Kennington Road, S.E.

Dutch Bulbs.

GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Penge, S.E.

Within a short distance of Penge and Kent House Stations, L. C. & D. Railway.

UNRESERVED SALE of the First Portion of general NURSERY STOCK, the Land being required for other purposes.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Penge Nursery, Penge, S.E., on MONDAY and TUESDAY NEXT, November 25 and 26, at 12 o'Clock each day precisely, by order of Mr. E. B. Haynes, the First Portion of the well-grown NURSERY STOCK, comprising 5000 Lombardy Poplars, 10,000 Aucubas, 3000 Laurels, 6000 Privet, 3000 Box, 2000 Ivies in pots, 2000 Climbers, 1000 Limes, 30,000 Evergreens in variety, 500 Scarlet, Yellow, and Horse Chestnuts, 100 fine Weeping Ash, 1000 yards of Dutch Box Edging, 5000 Fruit Trees, Chrysanthemums, &c.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Tuesday Next.

Standard and Dwarf ROSES, of the best sorts; CONIFERS, AMERICAN PLANTS, ORNAMENTAL FRUIT TREES, GREENHOUSE PLANTS, CARNATIONS, Dutch BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, November 26, at half-past 12 o'Clock, without reserve.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

10,000 LILIUM AURATUM.
2,500 ,, ALBUM-KRÆTZERI.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, November 26, at half-past 12 o'Clock precisely, 10,000 unusually fine Bulbs of LILIUM AURATUM, just received from Japan, in splendid condition; 2500 imported L. SPECIOSUM ALBUM-KRÆTZERI, so useful for forcing, a great variety of LILIES, including L. rubro-vittatum and L. virginale-Krameri, and others; 100 L. LEITCHLINII, 100 L. HARRISII, and 100 Japanese IRIS; 2000 DAFFODILS, LILY OF THE VALLEY, IRIS, and an extensive assortment of various HARDY BULBS.

On view morning of Sale, and Catalogues had.

Reading.

2¼ miles from the Reading railway station.

IMPORTANT SALE of FRUIT TREES and ROSES, by order of Mr. Cooper, to clear the ground.

To Gentlemen, Market Gardeners and others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, the Tilbert Plantation, Bath Road, Reading, adjoining the "Horn and Castle" Inn, on TUESDAY NEXT, November 26, at 12 o'Clock precisely, 700 APPLES of sorts, 750 PEARS of sorts, 50 trained and Bush PEACHES, 800 DAMSONS, 300 WALNUTS, 1000 NUTS of sorts, 1000 Standard and Dwarf ROSES, 200 LILACS, 500 CHESTNUTS, 10 to 16 feet, and a quantity of LIMES, SYCAMORE, ASH, SYRINGAS, &c.

May now be viewed. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, E.C.

Wednesday Next.

PALMS, FERNS, and other PLANTS in variety, 100 Lots of DAFFODILS, first-class HYACINTHS, TULIPS, CROCUS, and other DUTCH FLOWER ROOTS, 1000 BEGONIAS, LILIES, and MISCELLANEOUS BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, November 27, at half-past 11 o'Clock precisely, without reserve.

On view morning of Sale, and Catalogues had.

Friday Next.

UNRESERVED SALE of ESTABLISHED ORCHIDS, by order of Messrs. J. W. Steel & Co., who are giving up their Nursery. Important to the Trade.

MESSRS. PROTHEROE AND MORRIS will SELL the FIRST PORTION of this COLLECTION on FRIDAY NEXT, November 29, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., including Cattleya cœleste, superba, Hennesiana, Miltonia, Moreliana, and others, Cymbidium elegans, Ornithidium species (pure white), Oncidium undulatum, Cœlogyne Gardneriana, a quantity of Sophronitis grandiflora, &c.

On view morning of Sale and Catalogues had.

Friday Next.

ORCHIDS IN FLOWER.
CYPRIPEDIUMS.
ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, November 29, at half-past 12 o'Clock precisely, a large quantity of ORCHIDS IN FLOWER, about 250 lots of various ESTABLISHED ORCHIDS, including a few special CYPRIPEDIUMS from a private collection, comprising Cypripedium Pavonianum, C. delicatulum, C. Fairieanum, C. Morganæ, C. lucidum, C. orphanum, and others.

Also a splendid importation of about 100 lots of CALANTHE from Messrs. W. Kemsley & Co., comprising C. veratrifolia and C. Regnieri.

On view morning of Sale, and Catalogues had.

Clapham Road, S.W.—Absolute Clearance Sale.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, 262A, Clapham Road, S.W., on TUESDAY, December 10, the Erections of 19 Span-roof and Lean-to GREENHOUSES, HOT-WATER PIPING, BOILERS, PITS, GARDEN LIGHTS, 2000 PALMS, 250 CAMELLIAS and AZALEAS, mostly white; 2 SPRING VANS, HORSE, and UTENSILS in TRADE.

Further particulars will appear next week.

PRELIMINARY NOTICE.

THE MILFORD NURSERIES, GODALMING

HIGHLY IMPORTANT SALE

of the First Portion of the exceptionally choice and remarkably well-grown

NURSERY STOCK,

extending over several acres of ground, and comprising the healthiest Stock that has ever come under the hammer, affording to Gentlemen, the Trade, and Large Buyers, an unprecedented opportunity for securing unlimited quantities of SHRUBS and TREES in the best possible condition for transplanting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above by AUCTION, on the Premises, the Milford Nurseries, Godalming, Surrey, in DECEMBER NEXT.

Fuller particulars will appear next week.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, of W. LEE, Esq., 143½ High Street, Guildford; and of the Auctioneers, 67 and 68, Cheapside, E.C.

WANTED, a COTTAGE, with 2 or 3 acres of LAND, adapted for Nursery and Florist Business. Must be in Surrey, and within 20 miles of London.
D. A., 63, Church Street, Kensington, W.

WANTED, TO RENT, about 10 acres of ORCHARD, with some Garden Ground and Dwelling-house preferred. Within a few miles of London.
F. N., 14, Harvard Road, Lewisham, S.E.

TO BE DISPOSED OF, as a going concern, a SMALL NURSERY BUSINESS, near Large Markets. Seven Houses, and Stock at valuation; or PARTNERSHIP if desired.—G. E. R., 41, Wellington Street, Strand, W.C.

To Nurserymen and Florists, London, W.

TO BE SOLD, a first-class NURSERY, within seven miles of Covent Garden, comprising about one acre of Land with eight large Greenhouses thereon, all well stocked; lease sixteen years. Terms moderate. For particulars apply to W. E., 130, Percy Road, Shepherd's Bush.

London, N.W.

FOR SALE, Capital FLORIST BUSINESS, with 13 Glasshouses and Pits, all heated; Zinc erections of Stable, Coach-houses, and Potting Sheds; six-room Dwelling-house and Conservatory. Lease about 76 years. Ground Rent £54. Price, including Stock, £1500. Open to an offer.

Further particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

Edgware Road, N.W.

LONG LEASEHOLD NURSERY for SALE, nearly Half an Acre of Land, with 9-room Dwelling-house, and 3 large Glass-houses heated. Lease 87 years. Ground-rent, £30. Price £850.

Full particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, E.C.

To Nurserymen, Florists, &c.

TO BE DISPOSED OF, a really first-class old established connection in Aylesbury, doing a good local Wholesale and Retail Trade, as well as supplying the London markets. The freehold includes DWELLING HOUSE, Peach, Camellia, Tomato, Cucumber, and other necessary FORCING HOUSES, and well-matured NURSERY, a first-class Growing Stock of every description. Inspection invited. A moderate price for the freehold will be entertained. Satisfactory reason for disposal.

Photographs of the place can be seen, and full particulars from OSCAR BERRY, Monument House, Monument Yard, E.C.

TO LET, excellent NURSERY, 7 brick Houses, besides Pits, 3½ acres Fruit, planted 10 years. Stock at valuation. 5 miles from Leicester. Good trade with shops.—Apply, 55, Brown Street, Leicester.

TO BE LET, on Lease, about 2 acres of productive NURSERY LAND, with Stabling, Outbuildings, and about 13,500 super feet of Glass. About five minutes from Waltham Cross Station, Great Eastern Railway.

Apply to
E. A. H., Queen Anne's Lodge, Waltham Cross, N.

To Gardeners, &c.

TO LET, a nice compact FRUIT FARM and MARKET GARDEN, consisting of 5 acres, at Sherburn in Elmet, half an hour's ride by Rail to Leeds. Good Dwelling-house, consisting of Dining, Drawing, Breakfast Room, and Kitchen, Bath-room, Pantry, Coal-house, &c., on ground floor; 4 Bed-rooms and Servants-room, Wash-house, Coach-house, 2-stall Stable, Pigstyes, Poultry-houses, Greenhouse, Pits, Frames, large Orchard, scores of Apple, Plum, and Pear Trees; about 1600 Gooseberry and Currant Trees; an acre of Strawberries; nearly an acre of Raspberries in good bearing condition. To a steady respectable person with good references, the proprietor would let at a very reasonable rent. Apply to WILLIAM TAYLOR, Saville House, Princes Square, Harrogate

Landscape Gardening.

OUR THOMAS H. MAWSON advises on all classes of Work under the above heading; also Rock Building, General Estate Improvements, Planting, &c.

See *Gardeners' Chronicle*, No. 146, p. 412.

Address, MAWSON BROTHERS, Nurserymen, Windermere.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

London County Council.

TENDERS ARE INVITED for the UNDER DRAINAGE of LITTLE WORMWOOD SCRUBS (about 22 acres). Persons tendering will be required to declare in their tender that they pay such rates of wages and observe such hours of labour as are generally accepted as fair in their trade. Persons desirous to submit tenders may inspect the plan and obtain specification, form of tender, and other particulars, on personal application at the Office of the Architect of the Council, at Spring Gardens, during office hours, until WEDNESDAY, the 11th day of December, 1889. The tenders, which must be on the form supplied from this Office, and be addressed to "The Clerk of the Council," and endorsed "Tender for Drainage, Little Wormwood Scrubs," are to be delivered at the Office before 5 o'Clock on the last-mentioned day, and no tender will be received after that hour. Any tender which is not fully filled up in every particular will be rejected, The Council does not bind itself to accept the lowest or any tender.

H. DE LA HOOKE, Clerk of the Council.

Spring Gardens, S.W., November 21, 1889.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense stock, to which they are constantly adding, and all are offered at the lowest possible prices. LISTS with Prices and particulars post-free on application to the Company,

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

SOLANUMS, extra strong, bushy, well-berried, well-coloured, in 6-inch pots, 10s. per dozen; PASSION FLOWERS, Cœrulea (blue), 4s. per dozen; Constance Elliott (white), 5s. per dozen. Good strong stuff, about 5 feet high. Free on rail with packing. Cash with order.

C. JOHNSON AND CO., Tangley Park Nursery, Hampton, Middlesex.

FLETCHER BROS., have a large Stock of Standard FRUIT TREES to offer. Price per 100 or 1000 on application.

The Nurseries, Ottershaw, Chertsey.

EVERGREEN HEDGES.
ARBOR VITÆ, American, bushy, 5 to 6 feet, 15s. per dozen, 100s. per 100; 6 to 8 feet, 21s. per dozen.
PRIVET, oval-leaf, 3 to 4 feet, 10s. per 100; 4 to 5 feet, 20s. per 100.
THUIA LOBBII, 2 to 2½ feet, 8s. per dozen, 50s. per 100; 2½ to 3 feet, 9s. per dozen, 60s. per 100; 3 to 4 feet, 10s. per dozen, 75s. per 100.
YEW, English, 1½ to 2 feet, 6s. per dozen, 35s. per 100; 2 to 2½ feet, 9s. per dozen, 60s. per 100.
JNO. JEFFERIES AND SON, Royal Nurseries, Cirencester.

Special Offer of Large Well-grown Evergreens and CONIFERS, frequently transplanted, standing singly, and every plant a specimen, offered by
WILLIAM WOOD AND SON,
The Nurseries, Maresfield, Uckfield, Sussex.
Single plants supplied if required at the dozen price.
Coniferæ.
ABIES DOUGLASII, 5 to 6 ft., 18s.; 6 to 7 ft., 24s. per dozen.
,, GLAUCA, very fine, 5 to 6 feet, 24s. per dozen.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15s.; 5 to 6 feet, 18s.; 6 to 7 feet, 24s. per dozen.
CUPRESSUS LAWSONIANA, 6 feet, 18s.; 6 to 7 feet, 24s.; 7 to 8 feet, 30s.; 8 to 10 feet, 40s. per dozen.
,, LAWSONIANA ERECTA VIRIDIS, extra fine, 4 feet, 42s.; 5 feet, 60s. per dozen.
PICEA PINSAPO, 2½ to 3 feet, 30s.; 3 to 4 feet, 42s. per dozen.
,, PECTINATA (Silver Fir), 3 to 4 feet, 18s.; 4 to 5 feet, 22s. per dozen.
PINUS AUSTRIACA, 3 to 4 feet, 20s.; 4 to 5 feet, 28s. per doz.
,, LARICIO, 4 to 5 feet, 28s.; 5 to 6 feet, 36s. per dozen.
,, SYLVESTRIS (Scotch Fir), 4 to 5 feet, 20s.; 5 to 6 feet, 25s. per dozen. From nursery rows, 2 to 3 feet, 35s.; 3 to 3½ feet, 50s. per 1000.
,, INSIGNIS, 5 to 7 feet, 30s. per dozen.
,, CEMBRA, 3 to 4 feet, 15s. per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, 12s. per dozen.
RETINOSPORA PLUMOSA, 5 feet, 20s.; 6 feet, 24s. per dozen.
,, ,, AUREA, 3 feet, fine, 20s. per dozen.
THUJOPSIS DOLABRATA, 2 to 3 ft., 18s.; 3 to 4 ft., 24s. doz.
,, BOREALIS, 4 to 5 feet, very fine, 30s. per dozen.
TAXUS ELEGANTISSIMA, 1½ to 2 feet, 20s. per dozen.
THUIA LOBBII, 4 to 5 ft., 20s.; 5 to 6 ft., 30s.; 6 to 7 ft., 36s.
Large Evergreens.
LAURELS, Common, colchicum, caucasicum, and rotundifolium, 3 to 4 feet, 12s.; 4 to 5 feet, 18s.; 5 to 6 feet, 24s. per dozen.
,, Portugal, 2½ to 3 feet, 24s. per dozen.
TREE BOX, green and variegated, 2 to 3 feet, 9s.; 3 to 4 feet, 15s. per dozen.
BERBERIS DARWINII, 2 to 3 feet, 9s.; 3 to 4 feet, 15s. doz.
LAURUSTINUS, 1½ to 2 feet, 10s.; 2 to 2½ feet, 15s. per dozen.
GRISLINIA LITTORALIS, 1 to 1½ ft., 10s.; 1½ to 2 ft., 15s. doz.
OLEARIA HAASTII, 1½ to 2 feet, 9s. per dozen, 60s. per 100.
COTONEASTER SIMMONSII, 3 to 4 feet, 8s. per dozen.
GORSE, double, fine, in pots, 8s. per dozen, 50s. per 100.
DECIDUOUS FLOWERING SHRUBS, consisting of Althæa frutex, Deutzias, Forsythias, Guelder Rose, Rhus, Ribes, Sambucus, Spiræas, Syringas, &c., at 4s. per dozen, 22s. 6d. per 100.
WEIGELAS, a fine collection, 6s. per dozen, 40s. per 100.
CATALOGUES Gratis on application.

H. I. HARDY, F.R.H.S., Stour Valley Nurseries, Bures, Suffolk, offers the following:—
PRIMULA SINENSIS FIMBRIATA, Seed, very finest selected, from beautifully fringed large compact flowers, pure white, rosy-morn, carmine, purple-blush, in separate colours, 80s. per ounce; mixed, 70s. per ounce.
,, Plants, large and strong, out of 60-pots, to bloom in spring, mixed, 10s. per 100.
,, ,, out of stores, to bloom in spring, mixed, 6s. per 100.
PRIMROSE, Hardy's new hybrids, novelties, very choice, about 30 colours, from pure white to dark maroon, strong plants, 5s. per 100.
PRIMROSE POLYANTHUS, Hardy's new novelties, about 8 splendid colours, make fine trusses, 45s. per 1000.
POLYANTHUS, finest selected, gold laced, show flowers, 5s. per 100, 45s. per 1000.
VIOLA CORNUTA, White Virgin and Queen of Blues, 5s. per 100.
LETTUCE, strong plants, Hardy's "Northern King Cos," stands hardest winter and come very early, 5s. per 1000.
CABBAGE PLANTS, Enfield Market, strong plants, 2s. 6d. 1000.
,, Red Pickling, strong plants, 3s. 6d. per 1000.
Cash with order. Package free. Extra Plants for carriage.

J. E. DIXON'S "PRESIDENT CARNOT" BRUSSELS SPROUTS.
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,, WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, common, 10 to 12 feet.
,, Purple, Pyramids and Standards, 10 to 16 feet.
BIRCH, Silver, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
,, ,, Double White, 10 to 16 feet.
,, ,, Scarlet, 12 to 16 feet.
,, Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 12 feet.
LIMES, 12 to 16, and 20 feet.
,, Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
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PLANES, 12 to 16 feet.
POPLAR, Bolleana, 10 to 14 feet.
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SYCAMORE, Common, 14 to 16 feet.
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THE
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SATURDAY, NOVEMBER 23, 1889.

THE HISTORY OF THE CHRYSANTHEMUM.

BY W. B. HEMSLEY, F.R.S.

(*Continued from p.* 557.)

The Principal Modifications of the Chrysanthemum.

TO understand the modifications this Protean plant exhibits, it is necessary to bear in mind that each "flower," as it is popularly termed, consists of a large number of flowers, crowded together at the top of a common stalk, instead of being free from each other, and each separately stalked. In the normal, or wild condition, these flowers are of two kinds, the central or disk flowers being tubular and symmetrical in shape, while the outer or ray-flowers have the corolla split nearly to the base on the upper side, and spread out flat. Ordinarily the fulness is caused by the disk flowers developing in the same form as those of the ray, so that they are all more or less strap-shaped. This is what happens in the great majority of cases, as in the reflexed and incurved classes. Sometimes all the flowers are elongated, narrower, tubular, or quilled. Sometimes the disk flowers are enormously increased in number, and are larger in size, with one or more rows of ray-flowers. This is what happens in the Anemone-flowered Chrysanthemums. Sometimes the ray-flowers are long and narrow and forked, and sometimes they are curved and intertwined, as in some of the Japanese varieties. In another singular modification the disk flowers are elongated, and more or less two-lipped, with the lips lobed or jagged, something in the same way as the outer ones of the Corn Blue-bottle, Centaurea cyanus. Some of the principal modifications are illustrated in the *Gardeners' Chronicle*, new series, xiv., pp. 624—5 and 628—9, and the figures were reproduced in the fifth volume of the third series, 1889, pp. 48, 53. The figure given at the same time on p. 49, by Fitch, illustrates the flower-heads from the "single" condition to the almost globular, incurved double.

The wild Plants from which the Cultivated Chrysanthemums have Descended.

As already observed, it is impossible to determine the parentage of some of the Chinese double Chrysanthemums, and it is highly probable that some of them are of hybrid origin between Chrysanthemum indicum, the small yellow, and C. morifolium (sinense). The same may be said with regard to some of the early figures of double varieties of Chrysanthemums, which authors have identified with one or the other of the two adopted species. The slender Chusan Daisy, the parent of all the European Pompons, for example, is probably of mixed origin, though it may be pure C. indicum. The wild state of C. indicum is easily recognised, and recently Dr. A. Henry has sent to Kew specimens of a wild Chrysanthemum which I have now no hesitation in naming C. morifolium, though I quite recently (Journal of the Linnean Society, xxiii., p. 439), described it as a doubtful variety. With regard to the slender northern wild Chrysanthemum which Maximowicz formerly regarded as this species, I think there is some doubt; certainly the connection must be very remote.

The following is the complete synonymy, excluding the northern plant. An almost "single" variety cultivated at Kew under the name of Miss Rose, is interesting on account of its close approach to the wild specimens, collected by Dr. Henry, especially in the less divided leaves. This variety was raised by Teesdale and distributed by Cannell.

I. Chrysanthemum indicum, Linnæus, Species Plantarum, ed. 1 (1753), p. 889, excl. syn.; Sabine in Transactions of the Horticultural Society of London, iv. (1821), p. 326, tt. 12 et 13, et in Transactions of the Linnean Society, xiv. (1823), p. 144; Lindley in Botanical Register (1829), t. 1287; Roxburgh, Flora Indica (1832), iii., p. 436; Clarke's Reprint, p. 604; Bretschneider, Early European Researches into the Flora of China (1881), p. 158; Hemsley in Journal of the Linnean Society, xxiii. (1888), p. 437.

Matricaria japonica flore minore, Breyne, Prodromus fasciculi variorum plantarum secundus, exhibens catalogum plantarum variorum anno 1688, in hortis celeberrimis Hollandiæ observatarum, p. 66.

Tsjetti-pu, Rheede, Hortus Indicus, Malabaricus, x. (1690), p. 87, t. 44.

Matricaria madraspatana, Petiver Musei Petiveriani (1695), centuria, viii., p. 76, saltem pro parte.

Chrysanthemum maderaspatanum, &c. Plukenet, Almagestum Botanicum (1696), p. 101, t. 160, fig. 6.

Matricaria Chusan, &c. Petiver, in Philosophical Transactions of the Royal Society of London, xxiii. (1703), p. 1421; Bretschneider, Early European Researches into the Flora of China (1881), pp. 54 et 158.

Matricaria sinensis, minore flore, &c. Plukenet, Amaltheum Botanicum (1705), p. 142, t. 430, fig. 3.

Matricaria sinensis, &c. Vaillant Act., 1720, p. 285, ex Sabine.

Matricaria zeylanica hortensis, &c. Linnæus, Flora Zeylanica (1747), p. 198.

Chrysanthemum procumbens, Loureiro, Flora Cochinchinensis (1790), p. 499, ex Maximowicz.

Matricaria indica, Ramatuelle, in Journal d'Histoire Naturelle, ii. (1792), p. 240.

Pyrethrum indicum, Cassini, Dictionnaire des Sciences Naturelles, xliv. (1826), p. 149; De Candolle, Prodromus Systematis Naturalis Regni Vegetabilis, vi. (1837), p. 62; Maximowicz, in Mélanges Biologiques, viii. (1872), p. 516 (excl. β plenum?); Franchet et Savatier, Enumeratio Plantarum Japonicarum, i. (1875), p. 235; Franchet, Plantæ Davidianæ ex Sinarum imperio, i. (1884), p. 167 (var. lavandulæfolium); Icones in libris japonicis Phonzon Zoufon (1828), xiii., tt. 7—9; et So Moukon Zoussetz, xvii. (1856), t. 22 (19).

Chrysanthemum tripartitum, Sweet, British Flower Garden, ii. (1827), t. 193.

Chrysanthemum Sabini, Lindley, in Botanical Register, xv. (1829), sub tab. 1287.

II. Chrysanthemum morifolium, Ramatuelle in Journal d'Histoire Naturelle, ii. (1792), p. 240.

Matricaria japonica maxima, Breyne, Prodromus fasciculi variorum plantarum secundus, exhibens catalogum plantarum variorum anno 1688, in hortis celeberrimis Hollandiæ observatarum, p. 66.

Matricaria japonica maxima flore roseo, Plukenet, Almagestum Botanicum (1696), p. 243.

Matricaria hortensis, &c., Kæmpfer, Amœnitatum Exoticarum (1712), pp. 875—877.

Matricaria sinensis, Rumpf., Herbarium Amboinense, v. (1747), p. 259, t. 91, f. 1?

Matricaria indica, Miller, Gardeners' Dictionary, ed. 8, 1768, quoad specimen in herbario Musei Britannici conservatum.

Chrysanthemum indicum, Thunberg, Flora japonica (1784), p. 320, nec Linnæus; Loureiro, Flora Cochinchinensis (1790), p. 499, excl. synon.

Anthemis grandiflora, Ramatuelle in Journal d'Histoire Naturelle, ii. (1792), p. 234.

Matricaria morifolia, Ramatuelle, in Journal d'Histoire Naturelle, ii. (1792), p. 240.

Chrysanthemum indicum, Botanical Magazine, x. (1796), t. 327; xlvi. (1819), t. 2042.

Anthemis artemisiæfolia, Willdenow, Species Plantarum, iii. (1800), p. 2184.

Anthemis stipulacea, Mœnch, Supplementum ad Methodum Plantarum (1802), p. 258.

Chrysanthemum purpureum, Persoon, Synopsis Plantarum, ii. (1807), p. 461.

Chrysanthemum indicum, Botanical Register, i. (1815), t. 4; vi. (1820), t. 455; viii. (1822), t. 616.

Chinese Chrysanthemum, Sabine, in Transactions of the Horticultural Society of London, iv. (1821), pp. 330—354, t. 14; v. (1822), pp. 149—162, t. 3, and pp. 412—428, tt. 17 and 17* (1824); vi. (1826), pp. 322—359, tt. 2 and 3; Transactions of the Linnean Society, xiii. (1822), pp. 561—578.

Chrysanthemum sinense, Sabine, in Transactions of the Linnean Society, xiv. (1823), pp. 142—147; Sweet, British Flower Garden, i. (1838), tt. 7 and 14; Hemsley, in Journal of the Linnean Society, xxiii. (1888), p. 438.

Pyrethrum sinense, De Candolle, Prodromus, Systematis Naturalis Regni Vegetabilis, vi. (1837), p. 62; Steetz, in Seemann's Botany of the Voyage of the "Herald" (1857), p. 391; Maximowicz in Mélanges Biologiques, viii. (1872), p. 517; Franchet et Savatier, Enumeratio Plantarum Japonicarum, i. (1875), p. 235; Franchet Plantæ Davidianæ, ex Sinarum imperio, i. (1884), p. 167; Phonzo Zoufou, Japonorum (1828), xiii., tt. 2—9, absque nominibus latinis.

Pyrethrum chinense, Ynouma Tsiodjoun, So Mokou Zoussetz, xvii. (1856), fig. 18 and 19 (15 and 16).

IIa. Chrysanthemum morifolium, Ramatuelle, var. gracile, Hemsley.

Pyrethrum sinense, Maxim; α, sinense, Maxim., et β, japonicum, Maxim. in Mélanges Biologiques, viii., p. 517, 518.

It may be useful to add that several separate treatises on the Chrysanthemum have been published. That of John Salter appeared in 1865, and since then Shirley Hibberd, Broome, Burbidge, Molyneux, and others have written little books on the same subject; but mainly from the cultural point of view.

(To be concluded.)

Piassava Fibre.—The last number of the *Kew Bulletin* is devoted to the history of this fibre, obtained from the leaf-stalk of a Palm, Bahia Piassava. Gambier, a tanning material, derived from the leaves of Uncaria gambier, also forms the subject of a note.

New or Noteworthy Plants.

LÆLIO-CATTLEYA × ELEGANS COOKSONI, *n. var.*

A remarkably distinct and very handsome natural hybrid has just been sent to Kew, for determination, by Mr. William Murray, gardener, to Norman C. Cookson, Esq., of Oakwood, Wylam-on-Tyne, for which I propose the above name. At the first glance it looks so extremely distinct that one might be asked why it is called elegans at all, seeing that the lip is entire, like that of Lælia purpurata, and not three-lobed as in ordinary elegans. But the same may be said of the variety Wolstenholmiæ, for it also has an entire lip. The fact is, we have in garden a large number of plants which are clearly natural hybrids between the very variable Cattleya guttata and Lælia purpurata, nearly all of which are cultivated as varieties of Lælia elegans. In some cases very probably the parentage is inverted, but until we have some definite evidence to go upon, I think all hybrids between these two species should be brought under the name L. elegans, with an additional varietal name where necessary for garden purposes. It is unfortunate that no such evidence is at present forthcoming, but we may hope that someone will make the experiment of crossing these two species both ways, and noting the results. If the best varieties were used, the offspring would certainly have a considerable commercial value, which surely ought to stimulate someone to make the experiment. To return to our hybrid. It is one of a batch of Lælia elegans imported by Messrs. F. Sander & Co., of St. Albans; but Mr. Murray and Mr. Sander both remark that it is very distinct from anything they have ever seen, and I can re-echo the same sentiment. The sepals are of a very light olive-green, with many small crimson-purple dots, becoming much fewer near the base. The petals are more than twice as broad, the central area is very light green, shading off into light purple near the margin, the colour being chiefly confined to the numerous forked veins. There are also a few crimson-purple dots near the apex. Lip entire, very broadly elliptical, obtuse, the colour a brilliant crimson-purple, or deep carmine, except the side-lobes, on the basal half of the lip, which are white. Column white, much streaked with crimson on the front face, and with a few splashes of the same colour on the back and sides. The pollinia are, as usual, very unequal. I have no notes as to the vegetative organs, and therefore assume them to be normal in character. *R. A. Rolfe.*

Pinus latifolia, *Sargent.**

Dr. Henry Mayr, the Professor of Sylviculture in the University of Japan, detected in the autumn of 1887 on the southern slopes of the Santa Rita Mountain in southern Arizona, a part of the range which had not been explored before botanically, a remarkable new species of Pine.

Its very long leaves, in threes, with persistent sheaths, and with the strengthening cells under the epidermis, and surrounding the ducts, bring it into Engelmann's second section of *Ponderosæ*, with P. macrophylla, P. ponderosa, and P. canariensis. It is described by Dr. Mayr as a medium-sized tree, about 60 feet high, with thick and deeply-furrowed dark brown bark and stout tortuous branches. The leaf-bracts, reflexed in the bud, are three-quarters of an inch long, acuminate, with scabrous, laciniated margins, and contracted into a long subulate points; leaves serrate, 14 to 15 inches long, one-sixteenth of an inch wide, with a prominent rib; sheath persistent, dark chestnut-brown, with a conspicuously fringed margin; cones sub-terminal, clustered, oblique from the greater development of the outer side,

* *Pinus latifolia*, nov. spec.; arbor mediocris; ramulis tortuosis; squamis longe acuminatis, fimbriato-laceris, squarrosis, persistentibus; vaginis elongatis laciniatis persistentibus; foliis ad apicem ramulorum congestis, ternis latis margine serrulatis; strobilis sub-terminalibus ovatis obliquis, 3—5 poll; longis; squamarum-apophysi ancipiti, umbone conico uncinat; seminibus parvis late alatis. *C. S. Sargent.*

sessile, 3 to 5 inches long; the scales, with recurved apophyses, and stout, projecting, mamillary umbos, and slender terminal prickles. The seed (imperfect and probably not fully grown) is only one-eighth of an inch long, oval, prominently ridged, and light-brown; the wing three-fourths of an inch long, widest nearest the base. The cones, which appear to be light-brown, leave, in falling, the peduncle, with a few of the lower scales attached, on the branches, resembling in this the cones of P. ponderosa. The flowers have not been seen.

This species differs from P. ponderosa in its longer and broader leaves, and by the long, round umbo of the cone-scales, not unlike that of P. Coulteri, although much smaller; it differs from P. macrophylla, to which it appears closely related, by the somewhat shorter and broader leaves, always in threes, by the much smaller cones, and by the absence of the stout, broad, much recurved, persistent points of the umbo.

Dr. Mayr's notes give no information of the exact elevation at which this tree was found; but it must have been considerable, as he found it associated with Quercus hypoleuca, and growing just below Pinus arizonica and P. chihuahuana. *C. S. Sargent in "Garden and Forest," October* 16, 1889.

DUTHIE PARK, ABERDEEN.

Recently I had the pleasure of spending a few days in and about Aberdeen, which was altogether an agreeable change to one who has spent most of his time in the midland and southern English counties. Amongst the places of interest which I visited was Duthie Park, named after the donor, a Miss Duthie, and which was opened to the public by Princess Beatrice in 1883. The Park consists of about 44 acres of garden and recreation ground, a large open lawn being set apart in the centre of the Park for the latter. The silvery Dee flows at the foot of the Park, and close by is the Allandale Cemetery. This part of the town, I am told, was always a favourite resort with the inhabitants, long before it was laid out as a public Park, a fact that may have had some influence in suggesting to the giver its suitability for a people's Park. The Park, which has been greatly beautified by planting, was in good order. At one part, near to an entrance, a rootery has been made of the roots obtained in clearing the ground, and this is now clothed with Sedums and Saxifrages, Campanula pumila, and C. carpatica, and other plants—the effect being very good.

Bedding-out is practised, and also carpet bedding, one star-shaped bed, planted in the latter fashion, was excellent, when we consider the climate of Aberdeen, and the situation, which is exposed. Plants of Œnothera Lamarckiana, planted amongst the shrubs, were effective in such places. The habit is erect; the stems, from 2 to 3 feet in height, bear large fragrant yellow flowers. There were many large beds of Pansies in various colours. Mr. Harper, the Superintendent, drew my attention to a seedling Lobelia raised by himself, and which is almost exclusively used for the edgings of beds, which is very distinct and compact in habit, and of a dark blue colour. It has been named Duthie Park. The area is intersected by walks of a good width; coniferous and other trees and shrubs have been planted in the borders, and which in time will provide shelter for many subjects which it would not be prudent to plant at the present time.

Mention must not be omitted of the old Oak now standing near to one of the rooteries, which formerly was dug out of the upper part of Aberdeen harbour, and it is supposed by some that at one time a very fine forest of Oak used to exist on or near to the present site of the town. The following are the chief points of interest connected with this Oak, which Mr. Harper has kindly forwarded to me:—

"The trunk and limb of a large Oak tree were dug out of the upper part of Aberdeen harbour in February, 1832, and were set up in Regent Road, near the channel of the Dee, now the Albert Basin. After standing here for fifty-five years, they were removed in February, 1887, on a lorry drawn by ten horses, to their present site in Duthie Park."

Dimensions taken from the *Aberdeen Journal* of February 15, 1832:—"Trunk, 13 feet long, 22 feet in girth; limb, 15 feet long and 13½ feet girth at the base; contents, upwards of 560 cubic feet; present weight, 10 tons. The base of the second limb, 14½ feet girth, which a gentleman in 1832 remembered to have been cut off in the year 1782 during some operation in the harbour. The tree was much injured in December, 1866, by catching fire from a builder's yard close by." *W. Harrow.*

THE WINTER MOTH.

We cull the following extracts relating to this destructive pest from the columns of the *Worcester Herald*. The moth itself has been repeatedy figured in our columns, and the plan of stopping the ascent of the insects by grease-bands reported on favourably by Mr. G. F. Wilson and others.

"I fully believe that it is of the utmost importance to stop the ascent of the wingless moths by grease bands, or, at least, by sticky bands of some material which will hold the moths fast without hurting the bark of the tree. I have strongly advocated this in my annual reports—in my reports to the Royal Agricultural Society—and lately gave a special paper on the subject (headed 'Winter Moths —a Word in Season'), in the number for October of the new serial, the *Farmers' Magazine*.

"I quite agree with those who believe in banding, and that unless the winter moths are stopped going up the trees, there will be immense damage done next growing season; and I also consider that none of the various methods of prevention suggested, that we know of at present, are so cheap, safe, and sure, as grease-banding.

"But I certainly do think, also, that a little more attention should be given to the possibility of the outside of young trees being so much injured by grease (or deleterious matter mixed with the grease) soaking into the thin bark and underlying layers of young wood, that it may be fatal to the tree.

"In the case of old trees with thick rugged bark, dead on the outside, probably even tar might be safely applied, for the layers of old bark lying between the tar and the wood immediately underlying the live inside bark would protect it almost as securely as would a layer of cork. I would give a word of warning in such case not to smooth down the outside bark, as a correspondent recently told me he was doing, or results may be very bad indeed. If the tar, or grease, is of a nature that can readily pass into the tree, it is obvious that the minute cells of the wood and bark will be so altered that they will not be able to convey the sap, and the effect will be a dead band, or a band so injured as to be almost equivalent in bad effects to ringing.

"I know only too well of this happening, and therefore I would strongly advise all growers to make sure that the grease is not mixed with tar, or residue of petroleum distilling, or too much caustic soda, or any other matter likely to burn or choke tender tissues.

"Failing the power to do this, the spending a little time in finding whose neighbours' trees suffered and whose did not from grease banding, would be of use.

"I would also strongly draw the attention of those who have many quite young trees, to the method of banding now in use at the Toddington fruit grounds. This is to pass a band of the thin grease-proof paper used by grocers round the stem; secure the overlapping edges by a strip of paste, and then lay the grease on in the manner advised by one of your correspondents, not with a brush, but with a flat piece of wood. If the paste does not stick at once, a twist of string round the paper or of Bass mat, and just tying the ends, secures it firmly.

"The paper prevents any grease, except what may run down, lying directly on the tree, and I am informed by Captain Corbett and Mr. C. Wise, with both of whom I had long interviews in the course of last week, that they consider this the best method of application. [If the paper band were made 6 inches wider at the lower side than the greased part, very little of the running grease would reach the bark. Ed., *Gard. Chron.*]

"With regard to birds, I should certainly think it was of great importance not to lessen the numbers o the more especially insect-eating kinds, such as various kinds of titmice, the nuthatches, and tree-creeper; in fact, most kinds, excepting the house sparrow, which does mischief by driving useful birds away.

"I do not myself feel so sure as some writers that the bullfinch is so very injurious; and would much like that, before condemning others, a careful *post-mortem* of contents of stomachs of a few specimens should be made, to see whether the abstracted buds had or had not a maggot within them.

"I fear I have already written at too great length, and, therefore, do not now add anything regarding either measures of remedy when the caterpillars are present in summer, or regarding the winged moths now depositing eggs.

"But I should very much like to lay before Mr. Masters of Evesham, and others of your skilled correspondents, a point which may be worth enquiry.

"In all the caterpillar troubles, which have now been a very serious matter for some years, though I have had a great deal of communication from most of our fruit-growing counties, I have not had any that I can recall from Devonshire or Somersetshire.

"I think that if attack had been bad, it would have been reported to me; but if attack was not serious, what is the reason?

"Is there a general difference in the method of treatment? Is it more general to have grass, as in some of the south-west Gloucestershire orchards, near homesteads—where presence of sheep, pigs, and poultry, in their different ways, lessen presence of coming attack beneath the trees? Or do the vast masses of Mistleto and great beards of lichen, which, when I knew common Devon orchards were considered apparently not to be objectionable, shelter insect parasites, and attract small birds' presence? *Eleanor A. Ormerod.*"

The following letters on the same subject appeared in the *Herald* on the 2nd inst., and as they contain points of interest we give them in full:—

Mr. J. Hodgetts, of Wyre, near Pershore, writes —"I commenced greasing my fruit trees the last week in September, and I found a few male and female moths caught going up the trees the first week in October, but now (October 30) we are catching them in the grease bands by thousands. I am having the grease bands kept fresh every fortnight, and I intend to do so through the winter and spring, as I do not think the moths all lay their eggs at the same time, as the weaker ones will not lay so soon as the strong ones. I find more moths caught on the Apple and Pear trees than I do on the Plum-trees."

Alderman Masters, of Evesham, says—"I have adopted grease bands for moth catching for twenty-five years, so successfully that we catch now but few winter moths. I have found out that, however careful one is in adopting this precaution, it is well nigh impossible to prevent moths getting up the trees. This is due to the grease bands getting hard or dry from frost or wind; the grease looses its adhesiveness, and the moth creeps over it. It is most important that the bands of grease should be looked over frequently, and the grease renewed or rubbed over with a brush if the surface is getting dry. This remedy applies to the winter moth. But we are confronted with a new difficulty in the visitation of another moth—known as the Lackey Moth, the females of which have wings, and consequently are not intercepted by the grease. Occasionally some of these moths are caught in the grease. Their bodies are very much the same shape as those of the male winter moth, only they are full of eggs. For full particulars as to description, habit, and best method of remedies, I would refer your readers to the report of the Agricultural Department (49—1889), obtainable from Messrs. Eyre & Spottiswoode, East Harding Street, Fleet Street, London."

Mr. William F. Gibbon, of Pershore, gives his experience as follows:—"I have done again this year as I have done for years past, viz., applied a band of grease about 4 inches wide around the trunk of each tree, 3 to 4 feet high from the ground—not with a brush, as some advise, but with a piece of wood shaped like a table-knife, and the grease spread on as butter on bread. In other seasons my first application of grease was on October 10. This year I commenced earlier, and began applying the grease on October 1. However, no females were found ascending either last year or this year before October 18, and since that date they have been entrapped numerously. I take a further precaution in occasionally sending round a workman to pick off the females caught in the grease. This they do with

a sharp-pointed instrument or penknife, and the females are collected in an old match-box and burnt. This, I consider, of necessity, for if left, the eggs in the females might hatch and produce young in the proper season. But I must here add the applying of grease does not give immunity against all varieties of insect life, and growers of fruit need not expect to find their trees free from caterpillars, even if they do apply the band of grease. It certainly entraps the females of moths having only rudimentary wings. But there are other moths—the Autumnal (Oporabia filigrammaria) and the November (Oporabia dilutata), the wings being ample in both sexes, and my own notion is the caterpillars of these moths caused the devastation in fruit plantations last summer."

ENUMERATION OF THE SPECIES OF KNIPHOFIA.

(*See ante*, p. 362).

Upwards of thirty species of Kniphofia are now known, which may be classified as follows:—

A. Flowers very small (perianth ⅛—½ inch long).

Perianth sub-cylindrical.

1. K. Buchanani, Baker.—Natal.
2. K. breviflora, Harvey.—Orange Free State.
3. K. modesta, Baker.—Griqualand.
4. K. parviflora, Kunth.—Kaffraria.

Perianth funnel-shaped.

5. K. infundibularis, Baker.—Cape.
6. K. pallidiflora, Baker.—Mountains of Madagascar.

B. Flowers middle-sized (perianth ½—¾ inch long).

Perianth sub-cylindrical.

7. K. gracilis, Harvey.—Natal.
8. K. Tysoni, Baker.—Griqualand.
9. K. pauciflora, Baker.—Natal.
10. K. ankaratrensis, Baker.—Mountains of Madagascar.
11. K. abyssinica, Schweinfurth.—Abyssinia.

Perianth funnel-shaped.

12. K. pumila, Kunth (*Bot. Mag.*, t. 764).—Central provinces, Cape Colony.
13. K. ensifolia, Baker.—Transvaal.
14. K. Grantii, Baker.—Mountains of Equatorial Africa.
15. K. comosa, Hochst (*Bot. Mag.*, t. 6569).—Mountains of Abyssinia.
16. K. Leichtlinii, Baker (*Bot. Mag.*, t. 6716).—Mountains of Abyssinia.

C. Flowers large (perianth sub-cylindrical, 1 to 1½ in. long).

Acaulescent. Leaves linear.

17. K. triangularis, Kunth.—Cape Colony, central region.
18. K. Macowani, Baker (*Bot. Mag.*, t. 6167).—Cape Colony, eastern provinces.
19. K. porphyrantha, Baker.—Orange Free State.
20. K. laxiflora, Kunth.—Natal.
21. K. natalensis, Baker.—Natal and Griqualand.
22. K. Baurii, Baker.—Kaffraria.
23. K. Thomsoni, Baker.—Mount Kilimanjaro.
24. K. isoetifolia, A. Rich.—Mountains of Abyssinia.
25. K. Schimperi, Baker.—Mountains of Abyssinia.

Acaulescent. Leaves ensiform.

26. K. sarmentosa, Kunth (Tritoma media, *Bot. Mag.*, t. 744).—Cape Colony.
27. K. Burchellii, Kunth (Tritoma Burchellii, Herb., in *Bot. Reg.*, t., 1475).—Cape Colony.
28. K. aloides, Moench. = K. Uvaria, Hook., in *Bot. Mag.*, t. 4816.—Cape Colony, with numerous varieties.
29. K. Rooperi, Lemaire (*Bot. Mag.*, t. 6116).—Natal and Kaffraria.
30. K. Kirkii, Baker.—Zambesi Highlands.

Caulescent. Leaves broadly ensiform.

31. K. caulescens, Baker (*Bot. Mag.*, t. 5946).—Province of Albany, Cape Colony.
32. K. Northiæ, Baker.—Grahamstown.
33. K. foliosa, Hochst = K Quartiniana, A Rich. (*Bot. Mag.*, t. 6742).—Mountains of Abyssinia.

Most of the garden forms mentioned by Mr. W. E. Gumbleton on p. 362 are not what botanists would call hybrids, but crosses between the different varieties of K. Uvaria. I do not think from the way in which he speaks of it, that Mr. Gumbleton can possibly have seen K. Northiæ at its best, as it is represented in Miss North's painting in the Cape anteroom of her gallery. Bentham, in *Genera Plantarum*, founded his new genus Notosceptrum on the two Angolan plants I had referred to Kniphofia, K. benguellensis, and K. andongensis. The latter name is misprinted angolensis in the *Genera Plantarum*.

J. G. Baker, Herbarium, Kew. [See also a note of Herr Max Leichtlin, in another column.]

ROBERT MARNOCK.

The death of this gentleman, in his ninetieth year, took place in London on the 15th inst. For some years Mr. Marnock had retired from the practice of his profession, but he had by no means outlived his reputation as the first landscape gardener of his day. His style was that generally called natural or picturesque, the most beautiful and satisfactory of all, but one requiring the greatest art and skill, lest it degenerate into meaningless muddle. In 1882 (vol. xvii., p. 566.) we gave a brief sketch of the life and labours of Robert Marnock. He began his career as gardener at Bretton Hall, designed the Sheffield Botanic Garden, of which he became the first Curator. For a short time after leaving Sheffield, Mr. Marnock was in business as a nurseryman, at Hackney, but subsequently he achieved fame by laying-out the gardens of the Royal Botanic Society, Regent's Park, a garden which still attests the taste and ability of the designer. For several years also Mr. Marnock was connected with the horticultural press, and took a lively interest in the Gardeners' Benevolent and other charitable institutions connected with the craft, indeed his early literary efforts were conducted with a view to the benefit of certain charitable societies connected with gardening. In these varied capacities he managed to secure admiration for his talents, and the highest esteem for his qualities as a man.

Among Marnock's principal works we may mention Prince Demidoff's villa, at Florence; Weston Park, Sheffield; Park Place, Henley; Taplow Court, Eynsham Hall; Sopley Park; Montague House; White Hall; Greenlands; Blythwood, near Taplow, for Mr. Geo. Hanbury; Rousdon, near Lyme, for Sir Henry Peek, Bart.; Brambletye, near East Grinstead, for Mr. Donald Larnach; Leigh Place, near Tonbridge, for the late Samuel Morley; Sir Spencer Wells' place, at Hampstead; Mr. McHenry's, in Addison Road; Mr. Huth, at Possingworth; he also did a great deal at Warwick Castle, and many other places.

Marnock was eminently a conscientious man, and although his society was sought by those who appreciated his talent, he never allowed social amenities to interfere with his business engagements. Thus, on one occasion, when staying at a certain country house where there was a party of visitors, some of whom were anxious to converse with him, Mr. Marnock stated that he was there to accomplish certain work for his host, and he felt that his time was due to the gentleman who had commissioned him, and he therefore discouraged all attempts to divert him from what he considered his primary duty.

In accordance with his desire, his body, after a religious service, was cremated at Woking, and the remains deposited at Kensal Green on the 21st inst.

MEDICINAL PLANTS.

(*Continued from p.* 495).

Pyrethrum cinerarifolium.—This plant, which is generally known as the source of Dalmatian insect powder, is stated to be cultivated on a large scale in California, and the powdered flowers sold in that state under the name of Buhach. The plant was first introduced into California about twelve years ago from Dalmatia, and in 1880 a company was formed for growing the plants and making the powder. At the present time the company have about 300 acres under cultivation on this farm, at Atwater, Mured County, California. "The cultivation of the Pyrethrum requires careful and intelligent supervision, and it cannot be grown successfully without irrigation. It requires three years from the time of sowing to grow the plants capable of producing a paying crop of flowers, and then they will bear from four to five years longer. It is at its prime, however, in its fourth or fifth year. The plant grows about 30 inches high, and is set out in rows four feet apart, and from 15 to 20 inches apart in the rows. The flowers are harvested towards the latter part of May. The stalks are cut just above the roots, and the flowers stripped from them by passing the plants through a kind of comb. The detached flowers fall into a box below, and are carried to the drying-ground, where they are spread on sheets, and exposed to the rays of the sun during the day, being repeatedly turned over in the meanwhile. They are covered during the night, to prevent their absorbing moisture, as the perfect drying of the flowers is most important, in order to retain the volatile oil, which gives the powder its insecticide properties. It is also very necessary that this operation should be done quickly, and that the flowers during the drying process should be protected from moisture. A slight dew falling upon them at this time will injure their colour, and reduce their strength as an insect-destroyer. In this respect the Californian-grown flowers are said to be better cured, and consequently more valuable than those produced in Dalmatia, the particular conditions of soil and climate in California being extremely favourable to the growth and curing of plants rich in the essential oil which renders them so destructive to insect life."

ROSES.

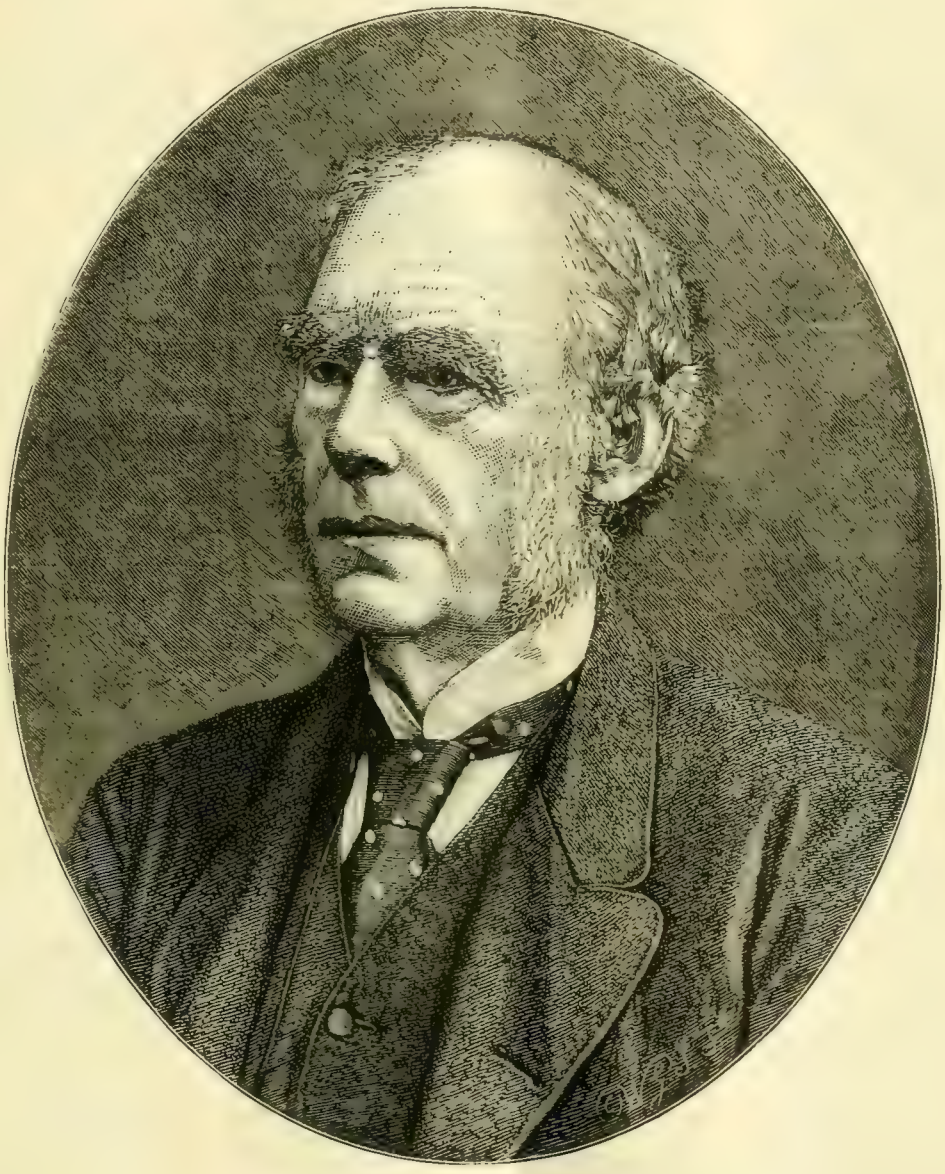
WHAT TO PLANT.

The season has come when the Rose-grower looks round upon his garden, and asks himself, "What alterations am I to make this season?" He may have thought of this, but as day after day the rain has descended, the ground has become soddened, and, in almost despair, the owner wonderingly asks himself, "When shall I be able to get to my beds?" It is difficult, but let us hope that the time is not far off when this most necessary work can be done, and he has to make up his mind what to plant.

A good deal has been said and written on the subject of stocks; there has been a well-nigh universal condemnation of the Manetti, and the substitution of the seedling Brier, or Brier cutting, for it. I have myself frequently expressed my belief in their superiority to the Manetti for most of our Roses; concerning the Teas, there can be no question—and I suppose that there is hardly one of that class sent out from a nursery now on the Manetti; but there are one or two facts connected with that stock, which we cannot very well ignore: one is the readiness with which it is propagated, and the ease with which it is budded. These will always ensure its being largely used in our nurseries where quick propagation is necessary—and before we so utterly condemn it let us note this, that the foremost amateur rosarian of our time, for such I consider him, Mr. R. N. G. Baker, of Exeter, grows all his Roses on this stock; he had given up exhibiting for some years, and when he returned to the conflict in 1888, he carried off the Challenge Trophy of the National Rose Society—for flowers cut from plants many of which were fifteen years old. Another fact is, that the Messrs. Harkness & Son, who have distanced all competitors for two or three years, who in 1887 and 1889 won both the Challenge Trophies of the National Rose Society, rely exclusively on Roses grown on this stock; with them the reason is not far to seek. Yorkshire is far north, and as it is an early stock, they thus obtain flowers; which, if they relied on the brier, would be very difficult to obtain. This does not hold with regard to Mr. Baker, as Exeter is very early, but none the less does he succeed in growing Roses to perfection, and the staying powers of his flowers have been abundantly testified to by

the prizes he has won at shows so far distant from him as Norwich; and one will therefore probably have some hesitation in the awards of many growers as to whether they shall quite abandon the stock which has done such good service to Rose growing; for it could never have attained the proportions it has done if it had not been for the introduction of this stock by the late Mr. Rivers, of Sawbridgeworth. There is another point that there is a very considerable demand now for Roses from America, which must tend to raise their value.

With regard to the kinds of Roses to plant, I have already put in a plea for single Roses, and there is, therefore, no need to dwell on this; but I shall only say that whoever plants in a suitable position the Austrian Copper, Austrian Yellow, Paul's Single White, Macrantha, Polyantha simplex, will not repent there was hardly a Tea Rose, no Catherine Mermets, Anna Oliviers, or Marie Van Houttes, were to be seen. "What did we do?" Well, we grew our Hybrid Chinas, or Hybrid Bourbons—summer-flowering Roses, it is true; but I am not sure whether we did not love our Roses more than some of you, who gauge their value by the prize-money they bring you; and for some of the Roses of those days I plead. Where among hybrid



The late ROBERT MARNOCK.

which will perhaps decide many to give the Manetti another chance. It is the difficulty of getting plants on the Brier; indeed, all Roses are difficult to obtain, the stocks being everywhere shorter. The truth is, that 1888 was a very disastrous one for budding, and in all the nurseries there are considerable gaps in the quarters devoted to Roses. This is more the case with seedling Briers than with Manettis, and with standards than with dwarfs, while some of the newer kinds cannot be had for "love or money;" and it must be remembered of having done so. Their time of blooming (especially that of the Austrian) is short, but there is a beauty about them unequalled by any double Roses. I would moreover plead for some of those Roses which, in my earlier days, were all that we had to depend on. Imagine, my "cocky" young exhibitor, who crows so loudly over your beauties, what a desolate condition the world was in when even Géant de Batailles, which you probably have never heard of, but which I remember well to have created such a sensation as no Rose now-a-days can ever do, was yet unborn—when perpetuals will you get the colours of Boule de Nanteuil, or the purity of Madame Hardy or Madame Plantier. Then there was the exquisite Coupe d'Hèbé, and others. If you do plant them, keep the pruning-knife under control, and you will have in June a sight to gladden eyes and noses by the beauty and delicious fragrance; but coming back to the new varieties, there are some which may be safely added to a collection.

Gloire de Margottin.—This is the outcome of a good old friend, harking back to Gloire de Rosamene as

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the parent of a new race which had previously produced Gloire de Bourg la Reine. Both partake of the thinness of the parent, but Gloire de Margottin is brilliant—truly brilliant in colour—most deliciously fragrant, and a fine autumnal bloomer. I have to day, November 16, cut two blooms which have filled my room with fragrance, and which were exquisite in colour, and of good form; and although its habit is long and straggling in growth, still it is to be highly commended as a good garden Rose.

L'Ideale.—I have already described this Rose, and I am afraid there will be some difficulty in obtaining it. When had, it is worthy of a place on a wall, although I shall hope to see it also in the open. Of hybrid perpetuals, the following may safely be added: Earl of Dufferin, Sir Rowland Hill, Mrs. John Laing, Lady Helen Stewart, Duchess of Leeds, as a garden Rose—Gloire Lyonnaise (as a buttonhole Rose); Paul's Cheshunt Scarlet. Then of Tea Roses, try to add Madame Pierre Guillot, Souvenir de Sarah A. Prince, Climbing Niphetos, Ernest Metz, and Miss Ethel Brownlow. These are all worth growing, whether you are an exhibitor or not.

In our part of England we had an excessively wet October, which has greatly retarded planting. With 7·59 inches of rain, the ground (especially in the still hazy weather we have had in November), is some time before it dries again, and it is better to be late in planting than to put the plants in soddened ground, or in unsuitable condition. *Wild Rose.*

Florists' Flowers.

THE CHRYSANTHEMUM.

The season of bloom will soon be over, but I should like to say a last word on the value of the plants we grow to produce large flowers. Our plan in previous years was to leave them to the freedom of their own natural habit of growth, with the result that the stems were too tall to please us as subjects to put into the greenhouse or conservatory. This season the whole of the plants were cut down to within about 6 inches of their base in the middle of May. The result was plenty of large flowers for cutting, and plants of about 3 feet to 5 feet in height, according to the variety.

Mr. Orchard exhibited some remarkably well-grown plants managed in this way a few years ago, and owing to the favourable comments made thereon, many growers adopted the same method. The flowers produced are not so large as exhibition flowers; still, for home decoration, cut-down plants are undoubtedly the best. An eminent Chrysanthemum grower told me the other day, that this system of culture was followed in Scotland more than thirty years ago, and with excellent results.

I am now about to put in the cuttings for next year, and as a general rule there is no difficulty in obtaining the number wanted from root cuttings; that is, suckers near the base of the stem, but not attached to it above the surface of the ground. Some varieties are very sparing of these, and when a large number of plants is wanted, cultivators must get cuttings as best they can. Single leaves taken off with a bud at their base will produce plants; if the stalks of the leaves are inserted in small pots of sandy soil, the buds will soon push up through the ground if the pots are plunged in a gentle bottom-heat. The root suckers may be placed in cold frames, but those taken from the stems may require the same treatment as the leaf-buds. The old stools that are not making growths, should be placed in a warm greenhouse, but they are sometimes very stubborn, and will not push out growths until near the end of winter. Cuttings put in now and in December produce the best plants. Growers of specimen plants of large flowered varieties, would do well to look out amongst the plants which have been grown to produce exhibition blooms, for any examples that may have thrown out several shoots near the base of the stems, but high enough to give a clear stem between the surface of the ground and the lowest shoot; these usually produce the best specimen plants. They can be taken out of the pots, the roots much reduced, and the plants potted at once may be placed on shelves near the glass in a cool airy house.

The Dahlia.

Few people need to be told that Dahlias should be taken up and stored for the winter. The difficulty seems to be to find a right place for them. It may have been observed that where Dahlias are well supplied with water at the roots, and have deep rich soil to run into, such plants at the time of digging up, have large fleshy tubers; whereas those that have not been watered, even if the soil is of the same quality, have few and small tubers attached to their stems. So poorly are some of them furnished with tubers, that we had to plant a considerable number of them in pots this year, and placed them in a dry, airy and cool house, but where no frost is admitted. It is an excellent plan to strike cuttings of the varieties most difficult to preserve through the winter, during the summer months. These form tubers in 4-inch pots, and can be saved through the winter in any house or cellar that is dry, and the roots in the ground may be left to rot. I do not like placing any of them under stages where plants are grown, as they often get very wet from drip in such places. We have only quite recently taken our plants up, and have potted some, others are placed in a dry frost-proof shed. They should be placed roots upward for an hour or two after digging them up, in order to thoroughly drain the water out of their hollow stems. Fasten the labels securely to the stems, fine wire is a good thing for this purpose.

The careful cultivator will look over his store of tubers occasionally, and if any scarce variety seems likely to "go off," it may be started into growth, or at least be potted after the decayed portions are removed. *J. Douglas.*

The Anemone.

Since Gerarde grew these plants, vast improvements have been effected by the intercrossing A. coronaria and A. hortensis. To them we are indebted for the showy Poppy-flowered varieties. Though many infer, owing to the numbers of tuberous-rooted Anemones that are grown, the genus is mainly represented by such plants, it is a fact, that by far the larger division consists of purely herbaceous kinds, so well represented in the decorative popular Japanese varieties. Happily, other species of these latter are being rapidly introduced or re-introduced.

The descendants of the Levant Anemone coronaria, and the Italian A. hortensis, are rightly included amongst florists' flowers. Not only have they been produced perfectly double, but, thanks to florists' rules, they are produced with perfectly defined circular centres, and quite correct guard petals, &c., as represented by at least fifty named varieties, both selfs and particoloured, comprising every tint excepting yellow. It is needless to say how very effective such named varieties are, whether planted in mixture, or in a mass of one colour.

Tuberous Anemones delight in good sandy, fibrous, yellow loam, with a small amount of thoroughly decayed manure well mixed therewith. Old growers used to place a layer of such manure from 4 to 6 inches in thickness at a depth of 18 inches below the soil. The beds ought to be made up a month or two before the time of planting, so that time may be permitted to fork the surface lightly over two or three times before planting the tubers. From three to five-year-old tubers produce the strongest plants, and give the best display of blooms. The time of planting ought to be so arranged as to have the plants in bloom at the most acceptable season, which can readily be ensured. Thus, for blooming in the middle of the month of May, plant in November. To bloom in the beginning of June, plant during mild weather in February. To bloom late in June and early in July, plant in March; whilst very early flowers in the beginning of April result from September plantings.

It is bad practice to dibble the tubers into the ground, or make holes and toss them therein. The better plan is to draw shallow drill-rows (6 inches apart for matured tubers), only 2 inches in depth, and carefully place each tuber right side uppermost therein, at distances of from 5 to 6 inches asunder; then over them place 2 inches of sandy soil. Nor should I omit to suggest that the bed ought to be elevated somewhat above the surrounding ground, so that the water may drain more freely and quickly away from the roots.

Anemones have long been made to do good service planted in Tulip beds. The late Mr. Fleming used to plant Anemone Mont Blanc amongst Rex rubrorum Tulips, and A. Feu superbe amongst Tulip La Candeur, with charming effect. To ensure their blooming together, the Anemones should be planted ten or twelve days later than the Tulips. By this means, not only a fine display is afforded by the blooms, but the Anemones give, with their foliage, a Fern-like carpeting to the beds that is effective and pleasing. Again, beds of Anemone edged with dense rows of Scilla siberica (blue), or white Crocuses, are most telling.

Whenever, as is often necessary, the expense has to be limited, and good named Anemones cannot be purchased, stock can be very easily grown from seeds; and if care be taken to secure good strains, excellent results follow. Such seedling plants will, if sown early and grown on well upon a sunny site, bloom somewhat the first year, and fairly well the second, with the advantage that they develop into finer stools each year for seven or eight years following; though after this length of time they become yearly weaker, and the blooms more single. It is bad practice, therefore, to save seeds from too aged plants; whilst even when in the hey-day of their beauty, selections of the best varieties and best blooms should be made for seed parents.

The seeds when saved should be well separated by mixture with damp sand, and may be sown in very early spring in boxes, pans, &c., in suitably rich sandy soil. They germinate very readily, and if not sown too thickly, soon form sturdy young plants. During infancy, however, they may be grown best in exposed places; when matured, they will be found to succeed best, if shaded from hot sunshine between the hours of 10 and 4 o'clock each day. By sowing upon a warm border, in properly prepared soil, the seeds being just covered over and kept duly moist, with such shading as I have already advised, they also germinate freely and form serviceable plants quickly. Such seedlings should be thinned out when large enough, leaving sufficient plants only to fill the space for more immediate blooming. Afterwards, when the plants ripen and the leaves decay, it will benefit the roots to place a thin layer of decayed manure over them; and again about the beginning of the month of November, a mulching will not only protect the roots during very severe weather, but greatly aid them in blooming early the following spring. Few plants repay the trouble of artificial waterings given during dry weather in the months of May and June more than do these. The proper time to take up the tubers is when the leaves have died down, before they are so far decayed as make it difficult to determine the exact position of each crown or stool. They require cleansing off soil, &c., and should be placed in a shed away from the sun. If it is desirable to increase the stock of any given variety, this can be done by breaking off portions of the tubers about one month before the time of planting. Though the tubers seem so deficient of "eyes," such offsets will nevertheless grow. Finally, though these plants are impatient of drought and much sunshine during flowering, when growing actively as the plants approach maturity each season, it is important to remember not to plant them in too shady places, nor let other plants unduly crowd them. Indeed, to oversight of this kind may be attributed the loss of so many tubers, especially as few gardens are so badly

drained as to cause them to rot away, which also is an injury that they are liable to.

Independently of the double-flowered forms, some extremely beautiful single-flowered species and varieties exist, notably the Grecian A. fulgens, which for intensity of vivid colour is unsurpassed. Dr. Tristam writes, concerning the wondrous beauty of some species met with in Palestine, where they clothe hills and valleys with carpets of rare beauty, and similar illustration of woods carpeted by these plants have been given in the pages of the *Gardeners' Chronicle*. Suffice it to add, that all which has been said about raising seedlings of the double-flowered Anemones is applicable to the raising of the single-flowered, which bloom so very quickly during December and January.

Other tuberous species worthy of note are A. pavoniana, or the peacock-eyed variety, from France, with its dense attenuate florets; the Italian star-leaved, A. stellata; A. apennina, the intense blue of Britain, which does so admirably under pot culture; the British A. nemorosa flore-pleno, so very beautiful; the yellow Portugese, A. palmata; the "wood Anemone done in gold," of English woodlands; A. ranunculoides, &c.

Herbaceous Anemones.

Beautiful as are many species amongst herbaceous Anemones, nevertheless, the Japanese forms are pre-eminently showy and striking, viz., A. japonica elegans (pale rose coloured), and the improved A. j. elegans hybrida (deep rose coloured). Well-grown in highly enriched deep soil, these plants—the alabaster-white variety (Honorine Jobert), more especially—form fine masses of bloom from early autumn until frosts cut them off. Exceptionally free to flower as these varieties are, and easy as they are to increase, every bit of root being capable of forming a young plant, it is strange that they are not more generally grown, especially as the flowers last so long when cut and placed in water. That these plants are perfectly hardy goes without the saying.

A singular and striking dwarf species, A. vernalis, a native of Switzerland, is covered with long hairs. A. Pulsatilla (the pasque flower), violet and purple in colour, in two forms, gives large flowers from March to June; A. alpina and its yellow counterpart, are very desirable, vigorous perennials, growing about 2 feet high. A. Halleri (Haller's purple-flowered), from Switzerland, though only 6 inches high, is a gem. The Siberian A. narcissiflora, with its bold spikes bearing three or four star-like flowers and tufted leaves, is a desirable variety for blooming in June; whilst A. stellata, of a scarlet-crimson shade, and white-flowered varieties are indigenous to Italy. And finally, the German Snowdrop Anemone, A. sylvestris, with charming, pure white, large flowers, borne on stalks 10 to 12 inches in height, should be in every collection of choice hardy plants. *William Earley.*

Orchid Notes and Gleanings.

ORCHIDS AT MANNINGHAM THORPE, BRADFORD.

The collection of George Firth, Esq., is steadily progressing, the excellent culture pursued by Mr. Collier involving no risk in adding to it the best and most beautiful plants which can be obtained. A really fine plant is never refused because of its price, and the improvement soon made in often quite small plants, the only ones sometimes which are to be obtained of choice varieties, must be gratifying to both owner and grower. Phalænopsis are grown in large numbers, and now that the Heaton House collection is distributed, the Manningham Thorpe plants stand in the front rank. The leaves of the plants are marvellous for size and number, some of them having eight or nine leaves that measure from 12 to 18 inches in length. Something like 1000 plants of Phalænopsis are grown, and the collection comprises P. amabilis, P. grandiflora and its variety aurea, P. gloriosa, P. Mariæ, P. Luddemanniana, P. Sanderiana, P. Brymeriana, P. Schilleriana, and its unique white variety P. S. virginalis, which was so much admired when last year a spike of it was sent by Mr. Collier to the Royal Horticultural Society. The beauty in such a large collection of these plants, many of them in flower and many more in bud, may hardly be imagined. The plants are grown in a regular temperature, which cannot be called that of a hot-house, although any point below 60° or 65° Fahr. is carefully guarded against. There is no doubt that the Phalænopsis would form a greater feature in collections than they do at present, if growers did not fail in so many cases to grow them satisfactorily. Nevertheless it is no reproach to a grower to say that he cannot grow Phalænopsis well, for as yet there is no royal road to a knowledge of their requirements. The chief point to find out, is the place best suited to them, and failing this, it is of no use to attempt their cultivation; this suitable place is found generally to be in a temperate house where good warmth may be at command, but need not be made use of to an excessive degree. The lowest night temperature should be 60°, and that of the day 65° to 70°. There should be plenty of light in the winter, and careful shading in the summer, together with a moist atmosphere and free ventilation without draughts, and on conditions such as these success generally will depend.

In one warm-house some noticeable plants were a fine specimen of Vanda Sanderiana, the true pure white Angræcum articulatum, Sobralia xantholeuca, a plant measuring about 3 feet in width; Saccolabium cœleste, with five spikes; some noble plants of Vanda suavis and V. tricolor, one of Veitch's variety with seven stems; Grammatophyllum Ellisii, which had two spikes each, 30 inches in length; besides a fine collection of Cypripediums, including the chaste C. bellatulum roseum.

In most of the houses was a good show of flowers, and in every department the plants are uniform in vigour. The Cattleyas and Lælias are well furnished with flower-sheaths—the varieties of L. purpurata and L. elegans being of especial excellence. The collection is very rich in fine varieties of C. Trianæ, C. Mendelii, and C. Mossiæ, and these in due season will make a splendid show. Cattleya Lawrenceana thrives admirably, as also the beautiful C. Brymeriana, a species which as yet is not well known in gardens.

In the cool-houses the Odontoglossums were found in splendid condition, and likewise the showier Dendrobes in their quarters were all that could be desired.

Orchids do not occupy the whole of the houses at Manningham Thorpe, other plants getting equal attention there; thus we found an extensive collection of greenhouse Rhododendrons, magnificent plants; another of Hippeastrums, Eucharis amazonica, well grown and bloomed. Bouvardias and Chrysanthemums in quantity. Indeed, Manningham Thorpe is rich in well-grown plants. *J. O'B.*

Oncidium anthrocrene

should be grown in a pot, and this must be well drained; the soil should consist of good fibrous upland peat, mixed with some chopped sphagnum moss, and some nodules of charcoal. The potting season should follow the flowering season in this case, as soon after blooming the plant begins to grow. If the plant does not require repotting, it it will be much benefited by top-dressing, and this is the very best time to perform the operation, as then the new roots receive the full benefit of the new soil; at the same time, care must be exercised that the old living roots be not injured, as want of thought in this matter often results in weak growth for the season, and loss of flower at the proper time. It enjoys a somewhat liberal amount of moisture to its roots during the growing season, and as its blooms appear during the winter months, there cannot be said to be any season of rest for this plant, although much less water will suffice than during active growth, therefore let it always have sufficient moisture to keep the bulbs and leaves in plump and fresh condition. The temperature of the Cattleya-house is most suitable for this season. It enjoys an abundance of light, and therefore should be placed near the glass; but it requires to be shaded from the hottest sun. The flower of this species lasts a very long time in full perfection, so long sometimes, as to be detrimental to the plants, exhausting their strenth; this should be avoided, and the spike should be cut before it has a deleterious result. When cut, it may be placed in one of those little tubes of water which are now becoming common, and are most useful, as they can be inserted in the pot, and the flowers have still the appearance of being upon the plant. "*Orchid Album*," 1889.

Odontoglossum Brandtii, *Kranzlin et Wittmack.*

Under this name a very handsome Odontoglossum is figured in a recent issue of the *Gartenflora* (p. 538, t. 1308), on which I should like to say a few words. It is described as a "new species," but I should rather prefer to call it a natural hybrid. In fact, the characters of two species are so strongly stamped on it that I do not think the parentage even doubtful. These two species are Odontoglossum Pescatorei and O. Lindleyanum; and as they are known to grow together, there is nothing improbable in natural hybrids between them being found. It is more easy to express this belief in general terms than to support it in detail without giving a long statement of facts, for which space cannot be afforded; but the multitude of forms of this difficult but beautiful genus cannot be properly studied without their relationships to each other are clearly understood. I would, however, point out that the shape of the segments, column-wings, and lip, are unmistakeably stamped with the characters of O. Pescatorei, while the long column and stalk of the lip are as obviously derived from O. Lindleyanum. Those who possess the plant may not trouble too closely about these points, but take it for its beauty alone, yet it is always interesting to trace the origin of a plant of this nature. *R. A. Rolfe.*

Cypripedium Arthurianum×

will grow well in either a pot or basket, but we find pot culture the more congenial to its wants; it, however, requires careful potting, also judicious selection of the material used, and, although it does inherit some of the peculiarities of C. Fairrieanum, it nevertheless also partakes of some of the vigour of its other parent, C. insigne. From experience, we find that it requires ample drainage, which should be covered with some rough peat fibre, and the soil consist of good fibrous peat, leaf-mould, and nodules of charcoal; the plant must be firmly potted, and elevated on a cone-like mound above the pot's rim. This variety requires careful watering, as it does not like so great a quantity as some of the members of this genus, but yet its roots should never be allowed to become dry, and herein lies one of the peculiarities in its cultivation. These Cypripediums, having no thick fleshy pseudobulbs to support them, or to draw upon during a period of drought, require great attention as regards the supply of moisture to their roots at all seasons of the year. "*Orchid Album*," 1889.

Odontoglossum Hunnewellianum.

This plant will become a favourite among lovers of neatly formed flowers, it being pretty, and enduring a long time in bloom. The best form of it I have met with comes from W. J. Thomson, Esq., Ghyllbank, St. Helens, Lancashire, which has the appearance of an enlarged O. Schillerianum, with the wax-like texture and shining bright colouring of O. prænitens, the flowers being 2 inches across. The sepals are of lemon-yellow colour, spotted and clouded over the greater part of their surface with reddish-brown, the tips and bases, however, being yellow, like the tips of the petals. The petals, with the exception of the tips, are of creamy white, spotted at the base with purple, and on the outer halves with a shade of chestnut-brown. The incurved lip

is of primrose-yellow, and the finely toothed and crisped margin is dotted with cinnamon-red, the centre having one large blotch of reddish-brown; the comparatively large wings of the column are also prettily spotted correspondingly to the base of the labellum. The rare O. ligulare and a pretty white variety of O. lanceans also accompanying the neat little gem above alluded to. *J. O'B.*

DENDROBIUM JOHANNIS.

Within the last two months several plants of this rare species have flowered in the nursery of Messrs. Sander & Co., St. Albans; and although D. Johannis cannot be considered of much importance from a commercial point of view, it is nevertheless both curious and interesting. It is a native of the Cape York Peninsula, in North Australia, and first made its appearance in cultivation in 1865, so that it must not be regarded by any means as a new species. At first sight it reminds one of the yellow-flowered D. undulatum—another little-known North Australian species, which flowered here in March of this year—but the floral segments do not possess such tortuous twistings as those of the latter species. D. Johannis is characterised by its more or less fusiform terete stems, which are from 5 to 9 inches high, the older ones being often clothed with silvery sheaths, while the young ones are furnished with a few oblong-acute, slightly recurved, and channelled leaves, 2 or 3 inches long, very leathery and stiff in texture, and obliquely bilobed at the apex. The racemes, which are borne at the summit of the previous year's stems, are a foot or more high, and bear from twelve to twenty flowers, each about 1½ inch across. The twisted sepals and petals are linear-oblong, subacute, and of a rich dark shining brown colour, paler at the base, where a few lines are observable. The lip is three-lobed, the side ones being erect, and streaked with dull purple on the inner surface; and the middle lobe, which is rhomboidal and recurved at the tip, is bright yellow, with two or three elevated warty keels, which pass into white parallel straight lines to the base. This species is figured in the *Botanical Magazine*, at t. 5540. *John Weathers.*

SCHOOL BOTANICAL GARDENS.

(Continued from p. 567.)

THE last instance of such botanical gardens, to which we may refer in detail, is that of the one laid out in connection with an institute and high school at Moston, near Manchester. The aim of the trustees of this estate (the Simpson Memorial), has been to establish not only a suitable recreation ground in connection with the halls, library, and class-rooms, but to direct attention to this branch of natural science in so doing. Thus botanical excursions, and elementary lectures have formed part of the summer's work in addition to lectures on various subjects from some of the Owen's College professors.

We would especially note that, in this instance, the purpose of the garden allowed of a simpler design and a less extensive outlay than would have been the case had it been desired merely to convert the half acre of land into an ornamental garden, which, additionally, would have given more trouble in the keeping up.

The details of construction were much those of an ordinary garden. It was desired to form a pond, which should allow of the cultivation of bog plants, *e.g.*, Stratioles, Acorus, which formerly had been common in the district.

The expenses incurred during the two weeks' labour, where some two dozen men and boys were employed in draining, fencing, levelling, together with the purchase of trees and shrubs, amounted to about £80. Little of this, however, was expended upon the botanical arrangement of beds in the centre of the garden. For these, a levelled piece of land was sown over with grass seed, and the beds will be cut out, according to the accompanying plan (fig. 82), during the winter.

The purchase of other plants for these beds will not cost more than £7 or £8; indeed, it is probable that, for the most part, they will be raised from seed, or collected by those interested in the garden.

We may refer shortly to such more important practical details as have not especially been noticed in connection with the establishment of such school gardens.

The simplest and most advantageous form of garden is that where the beds are in narrow rows, and cut out from turf, or separated by walks of gravel, brick-dust, &c. Where it is desirable to devote a considerable space to the garden, but where large beds would entail too much trouble afterwards it is wisest to sow grass-seed where turf does not already exist, and to delay the operation of cutting out the beds for a year. These may be placed in groups or in regular rows; the addition of a few shrubs and trees in clumps will add to the decorative value of the garden.

A poor soil may often be made use of in this way, where the ordinary garden plants would scarcely grow. The plants best suited for the beds are from the class known to gardeners as "hardy perennials," from which those desiring a moist or a dry habitat may easily be selected.

Many of these may be raised from seed, but it is desirable to introduce a few roots of the more important plants. Care must be taken lest pernicious weeds are introduced amongst the wild plants with which, in large measure, such a garden should be stocked.

The best form of label is, we believe, that adopted in the Botanical Gardens, Edinburgh, where it was designed by Mr. Lindsay, the Curator. The label is of zinc 1-16th inch or less in thickness, 2½ by 2 (or of other size). The legs are of zinc wire, stout, 10 inches long, and soldered to back of first piece. Face to be covered with thick coat of Aspinall's white enamel paint. This, when dry, to be covered with black enamel paint, in which, when yet viscid, the name may be scratched by means of a blunt point. Cost of above 10*s.* per 100. Ordinary zinc labels of the same form may be written upon with a specially prepared ink, but such rust after two years or thereabouts, and do not have so satisfactory an appearance. Larger wooden labels may also be obtained for the natural orders if desirable.

From the foregoing details it will appear evident that very effective gardens may be constructed with but little cost; nor (where the schoolboys or girls can be persuaded to take an interest in the beds and in the growth of the plants) should there be difficulty in keeping the garden tidy at very trifling expense, once it is established.

It is just possible that such gardens might, if extensive, be used for the study of various of the simpler agricultural operations. We are informed that, where, as in reformatories, the boys are taught the elements of agriculture and gardening, they noticeably take a greater amount of interest in the results of their outdoor lessons than in any other. Perhaps it would be impossible to teach much in this way, but certain beds might surely be set apart for the growth of cereals and the commonest pasture grasses; others might be devoted to examples of the different vegetables and root-crops.

We may here refer to the assistance which may be expected from our leading botanical gardens in the construction of others in connection with schools. The aid given in Scotland by Professor Balfour has already been instanced. Mr. Thiselton Dyer would also do what is possible to aid in any such spread of botanical teaching. He has recently done much to bring about the recognition of elementary botany as an optional subject for the London University matriculation examination, and he advocates strongly the method of practical teaching which the study of natural orders in such gardens would imply.

He writes relative to this subject of gardens:—"My own idea is that a much more real interest is taken in a school garden if the pupils have a hand in getting together the plants. The best way to do this is by collecting the seeds and raising them. . . . To take advantage of outings to the country as occasions to collect seeds for the school garden would in itself be a very valuable lesson. To distribute plants from Kew all over the country would be practically impossible, but we harvest annually the seeds of a large collection of herbaceous plants, and print the list; to a certain extent we could supply school gardens with seeds of plants not readily procurable otherwise.

There is at Kew a small model school garden near the herbarium, to which students are admitted in the summer months. Mr. Dyer also refers to the carefully considered list of plants given in Sir Joseph Hooker's *Botany Primer*.

Professor Vines, and doubtless also others, would be willing to aid with supplying seeds, &c., those establishing such gardens.

Also we may mention that Professor Geddes in 1883 published a paper (with a plan, see *Trans. Bot. Soc. Edin.*) upon the small school garden established by him at Grange House, near Edinburgh. To him is due much of the credit for the work recorded in these pages.

The following is a list of the natural orders suitable for a smaller school garden. The numbers of genera and species refer to those that may be taken as representative types:—

	Genera.	Species.
Ranunculaceæ	12	20
Compositæ	10	15
Liliaceæ	10	12
Scrophulariaceæ	6	12
Leguminosæ	6	10
Rosaceæ	6	8
Cruciferæ	6	6
Caryophyllaceæ	4	6
Papaveraceæ	3	6
Umbelliferæ	3	3
Saxifragaceæ	2	6
Geraniaceæ...	2	6
Campanulaceæ	2	6
Primulaceæ...	2	6
Rubiaceæ	2	3
Boraginaceæ	2	2
Labiatæ	2	2
Polygonaceæ	2	2
Amaryllidaceæ	2	2

Violaceæ, Resedaceæ, Onagraceæ, Amentaceæ, Coniferæ, Gramineæ, and Juncaceæ, might be represented with advantage by one or two species. Also Berberis, Linum, Lythrum, Tamus, Convolvulus, and Solanum. *P. Sewell.*

In the form of an appendix to the preceding paper, read at the British Association, Mr. Sewell called attention to the subject of the teaching of botany in schools. He dealt mainly with the educational value of the teaching of this form of elementary science.

The criticism of our present system of education made by Professor Huxley at the meeting in the Manchester Town Hall in 1887, on the subject of technical education was quoted:—"No one can doubt that this system of primary education has done wonders for our population, but it has the defect which is common to all the educational systems which we have inherited; it is too bookish, too little practical. The child is brought too little into contact with actual facts and things, and as the system stands at present, it constitutes next to no education of those particular faculties which are of the utmost importance to industrial life. I mean the faculty of observation, the faculty of working accurately, of dealing with things instead of with words."

The opinions of other authorities to the same effect were cited, and prominence was given to the remedies proposed, viz., that there should be introduced some form of teaching by developed object-lessons, by which children shall be made to observe for themselves, to reason concerning them, and to have the power accurately to describe, it might be accurately to draw, what they so observe.

Mr. Sewell dealt especially with the various ways in which the study of elementary botany might be engaged in by children even of the youngest years, so long as this study were made practical, *i.e.*, so long as they had placed before them plants which they should learn to distinguish one from another, and from which they should learn the uses of the various modifications of roots, stems, leaves, flowers or fruits, &c.

Stress was laid on the fact that we are apt to make our teaching merely instruction in more or less useful facts; we mostly fail to impart an understanding of the methods by which all useful knowledge is accumulated, methods which, once appreciated, may be applied by any man to aid him in the prosecution of the most diverse forms of practical industry.

The probable interest of such study of science would be increased were the instruction given with reference to a small botanical garden, where not merely purely botanical teaching might be imparted, but where the child might be grounded even in the elements of horticultural and agricultural knowledge.

It may be some time before definite instruction in horticulture or agriculture may be readily obtained by even the poorest child, but undoubtedly from even a small school garden much is to be learnt that not only would prove attractive because of its interest at the time, but which might afterwards prove most valuable did the child earn a livelihood as gardener or farm labourer.

Mr. Standen, of the Swinton Industrial Schools, has assured the writer that of all the lessons taught to the boys, those in the open fields in the elements of horticulture and agriculture, are the most eagerly appreciated by them. They watch with great interest the processes of germination and growth; and when they planted vegetables or shrubs they were ready to appreciate the effects of weather or carelessness in the mode of planting.

If it should not be possible to teach even the elements of horticultural and agricultural operations, yet much, dealing with the growth of root and cereal crops might be shown from a very small garden. A real respect for, not an ignorant distrust of, the methods and achievements of scientific men might be given; and, better than this, each child who showed the least interest in the study of plant-life might, under wise guidance, be made to feel that he, too, might become an accurate scientific observer of Nature; one who might look forward to the possibility of adding to useful knowledge, or, at least, of understanding the researches of others which might be useful to him if afterwards practically engaged in gardening or agricultural industries.

Often, at the present time, from lack of a little training in habits of observation or in scientific method, practical men fail to observe, or lack the ability rightly to record their observations. Thus, in view of the increased interest taken by children in practical rather than bookish study, and with an eye to the future development of our industries of horticulture and agriculture, it becomes the duty of this section of the British Association to encourage as much as possible the introduction of such cheap school gardens as Mr. Sewell had previously called attention to.

It may be here added that Messrs. Smith, of Worcester, have undertaken to supply, at small cost, the plants required for these school-gardens.

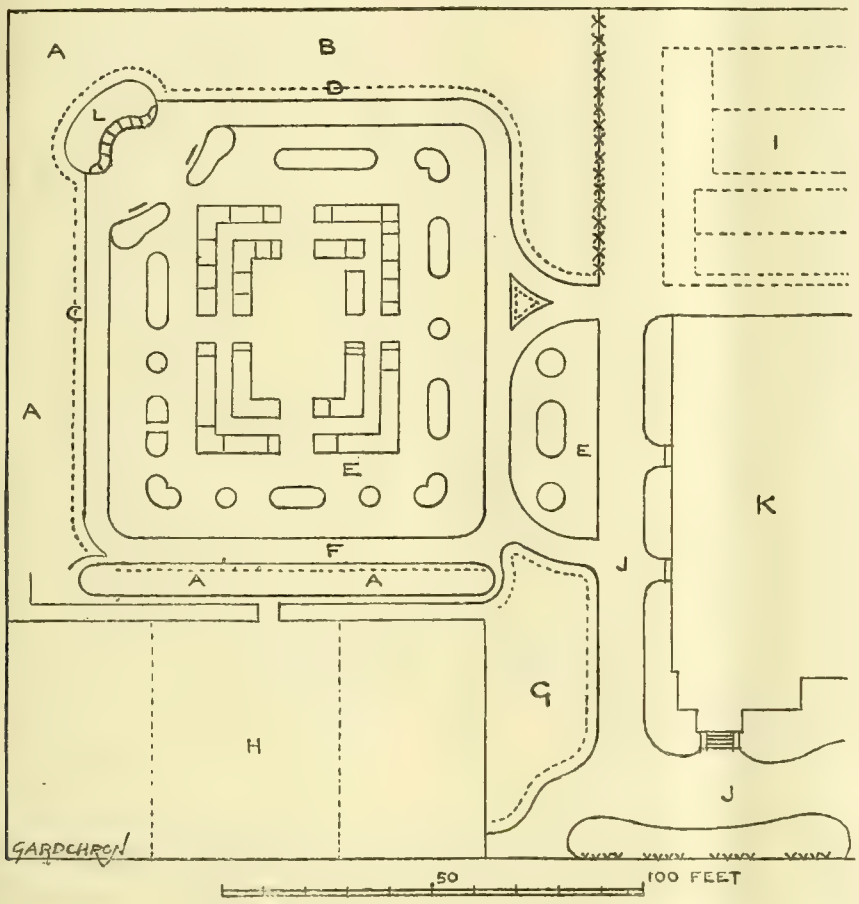


Fig. 82.—Moston botanical garden.

References:—A, B, Trees and shrubs; C, D, Borders; E, Grass; F, Walk; G, Plantation; H, Cottages; I, Tennis-court; J, Carriage drive; K, Class-rooms, library, &c.; L, Pond.

Bruant's Hybrid Roses.—M. Bruant, who raised the Rose called Madame Bruant from R. rugosa and Tea Rose Sombreuil, has, says the *Revue Horticole*, continued his experiments, and has raised various crossed seedlings between Rosa polyantha and R. bengalensis.

VANCOUVER'S ISLAND.

The forests of the mountains in the interior of Vancouver's Island differ materially from those of the low grounds near the coast, while as one travels inland the Douglas Fir (Pseudotsuga taxifolia) is the chief tree until an elevation of about 800 feet is reached. It then becomes insensibly intermixed with the western white Pine (Pinus monticola), and a sprinkling of Red Cedar (Thuya gigantea). Within a few miles of Departure Bay, where all steamers bound for Alaska take in coal, rises Mount Benson, attaining the height of 3,360 feet, at about eight miles in a direct line from the coast. The lower slopes of this mountain are covered with Douglas Fir of enormous size, many of the trees being nearly 300 feet high and over 8 feet in diameter. The chief undergrowth is the Bracken (Pteris aquilina var. lanuginosa), which is generally from 4 to 6 feet high, and so interlaced that to force one's way through it, without first tearing it apart with the hands, is impossible. After this is passed, the undergrowth is composed of Salal (Gaultheria Shallon), which is, if anything, more difficult to get through. Amongst the Salal the trees stand closer together, and are much less in diameter, but tower straight as arrows to an immense height. Here the Pine becomes quite frequent, and the Salal more interesting, for, in great profusion, the rare Boschniakia Hookeri is growing as a parasite upon its roots.

Then, as one ascends still higher, the western Hemlock (Tsuga Mertensiana) comes in, and our forest is composed of four species. Gradually the trees grow less in size, until, as the summit is neared, they become stunted, but still healthy and vigorous. On the summit two species appear, as if they were new creations. These are Tsuga Pattoniana and Abies amabilis.

Later explorations on other mountains showed that the same trees kept their relative position, but toward the north were found at a decreasing altitude. It was ascertained that the forest trees of one mountain were those of another, and that Tsuga Pattoniana and Abies amabilis were the rule, and not the exception, as they were in company on every mountain, and were the last to disappear at an altitude of about 5,500 feet. Above this very few trees are found, but it was quite evident that their absence is not caused so much by cold as by the immense snowfall of the moist winter, which leaves the mountain summits covered to a great depth in the spring. Close to snow of unknown depth, trees, with a diameter of 2 feet, are growing vigorously on Mount Arrowsmith, while above them all is snow, or depauperated and broken trees, flattened down by the snow, growing while they can, and lying dormant the remainder of the year.

Without exception, the forests of Vancouver's Island are the finest now in Canada. It is sad to think that these noble forests are being devastated year after year by fires started by men who are "improving" the land, and what it is impossible to do with the axe is being done with fire. In every part of the island the timber is sound, and fit for market, and it might be kept so but for the recklessness of irresponsible men. For every tree destroyed by the axe, a thousand are being destroyed by fire, and year by year the number is increasing. During the last half of July and August, and early September (1887), the whole country was enveloped in smoke, and fire met the traveller at every point. A few years more and these noble forests will be but the blackened remains of a glorious heritage, as every year increases the power of the fire, and gives it more prepared fuel for the next season. It is not alone on Vancouver's Island that this destruction is going on.

The Olympian Mountains, on the other side of Puget Sound, in Washington, are being denuded in precisely the same way; and this autumn (1889) over nearly the whole of British Columbia and northern Washington, the sky was obscured for six weeks by the dense smoke of the forest fires raging in all parts of the country. *John Macoun, Ottawa, in "Garden and Forest."*

The Apiary.

ARTIFICIAL COMBS.

This is an age of inventions. Amongst the modern (very modern) inventions in the apiary line, stands artificial combs. This is a totally different thing from comb foundation, and the combs are not even made of wax. We heard of something of the sort about a year ago from Germany. In this case, we believe the combs were made of something of the nature of indiarubber. But the latest form of artificial comb hails from America. It is made of wood. We shall hear more about it, no doubt, and cannot speak from experience. There is, however, at least one bee-keeper in America who says he has tried the combs, and found them a success. He says that by their use he has prevented swarming, and kept the bees at work gathering honey. It is generally understood by bee-keepers that if the raising of drones can be arrested, swarming will also cease. That is, unless there are drones present in a hive, the bees of that hive will not swarm. Now this is the way these things are accomplished. Pieces of wood are cut to the size of the frame required, and then by means of very elaborate machinery, worker cells are cut on both sides of the pieces of wood. As the combs are made of wood, there is no fixing into frames required, as the same piece of wood can act as comb and frame as well. These are hung in the hive, and the advocates of them say that the bees will fill them with worker brood and honey. From the nature of the comb, the bees cannot make drone cells, and therefore can rear no drones. Those who have tried them say that the bees breed very well in these combs, and fill them well with honey, and seal them over well. If this is the case, uncapping and extracting will be much more pleasant work than at present. In the coming year, no doubt many more will try these combs, and be able to give their experience upon them. Even if they are as good as their advocates claim them to be, drones must be raised, and so some other kind of comb must be used as well. Besides, there is something to be said on the other side. The laws of Nature cannot be entirely suspended without some injury accruing, and we have wondered what would be the result if the bee-keeper woke up some fine morning and found drones (small ones, of course) in his wooden combs. Of course, this would eradicate them for ever, as a puny race of drones could not be tolerated. Still, we think wooden combs worthy of a trial, especially if mixed with others. *Bee.*

KEW NOTES.

Castilleia indivisa.—This handsome plant has this year been one of the most striking and interesting subjects in our collection, and instead of being difficult to manage as many suppose, we find it quite amenable to the same treatment that we give to tender annuals. It seems to be a perennial species, although the plants in pots saved over from last year proved very indifferent flowerers, and those raised from seed this year were preferable. The flowers are yellowish green, and insignificant, but the large bracts are of the most brilliant crimson-scarlet, and make the plant a very attractive one for the mixed border. The seeds should be sown early in a brisk heat, pricking off in boxes or pots as soon as they are ready to handle, and finally, when all danger of frost is over, planting them out where they are intended to remain. The seedlings after being pricked off should be placed in a lower temperature, or else quite close to the glass, as when kept at a distance from it they have a tendency to run to flower, before the roots have grown sufficiently. We managed to get ripe seed this year in spite of much rain and dull weather. A native of California.

Pyxidanthera barbulata. — This charming little alpine, a native of the Pine barrens of New Jersey, seems to have beaten most of our growers of alpines so far. It has been many times introduced, and lost; and, notwithstanding all our care and cunning, it has again been lost. It may be in perfect health one day, and the next will see the half of its fine cushion losing its rigidity, and in a few days it will have to be thrown away. It has a tufted, procumbent habit, its prostrate stems creeping from a long tap root; the little buds, which cover the branches densely, are reddish before opening, and finally become white. We have tried chopped Pine leaves, mixed with peat, in loamy soil, &c., but have not, so far, succeeded. Have any of your readers managed to keep it for any length of time?

Pentstemon Menziesii.—A handsome dwarf, shrubby species, from California, much hardier, and in every way better adapted for rockeries, in this country, &c., than most of the other species. Pentstemons, as a rule, are probably not long-lived plants, and even P. Scouleri, an old well-known shrubby evergreen species, rarely lives more than a few years, but dies off by pieces, annually. In the present species, however, we have noticed none of these defects so far, the dwarf tufts of bright green foliage proving useful for furnishing the rockery during the dull season. The flowers, which are borne sparingly, are somewhat tubular, of a pale reddish-purple colour, and very attractive. In P. Scouleri the flowers are larger, of a pale violet colour. Both species may be increased from cuttings, and with the latter one it will especially be found necessary to do so every year, so as to be sure of preserving it; indeed, annual propagation, either by means of cuttings or division of the roots, is the only safeguard against loss with the majority of the species. *D. D.*

Dahlia imperialis. — This species is the best of the free-flowering, tall-growing Dahlias, and needs only simple culture; but as it does not bloom early enough to allow of its being grown out-of-doors in this country, it must be grown indoors, in a temperature not lower than 45° to 50°. It grows to a height of 10 feet, and is valuable at this season, blooming from the present time onwards. In the temperate-house at Kew the flowers on several plants are just beginning to expand. These are about 6 inches across, the eight petals being pure white, the centre yellow. Cuttings may be obtained by plunging an old tuber with buds in bottom-heat in February and March, and the young plants must be shifted on in pots as they require it until they get into 20-inch pots. They are gross feeders, and require abundance of manure-water after the pots are filled with roots. It is advisable to house the plants about the same time as the Chrysanthemums. *W. B.*

Trees and Shrubs.

THE PYRAMIDAL HORNBEAM.

In the very pretty town square at Rouen, known as the Jardin Solferino, is a very perfect example of this seldom seen variety. It stands isolated on one of the lawns, is flame-shaped, and perfectly symmetrical. When we saw it, it was covered with golden-bronze foliage as with a robe, altogether forming a most beautiful object. A label stated that the specimen was presented by M. Constant Lesueur, pépiniériste.

The Enemy of the Big Trees.

It is curious to note how unrelentingly the fungus Cercospora Sequoiæ pursues the great Mammoth trees. In its own Calaveras forests, I have noted here and there a few young trees struggling through, but most are killed, and it is a frequent observation of travellers, that they see no young ones at all coming on. Now and then a locality is seen where the young ones are abundant and vigorous—where the vapour-laden clouds condense against the rocks, and make an almost continual atmosphere of mist; but in the older and dryer spots the little enemy gets them all. In our grounds here, in Germantown, Philadelphia, they are all devoured before they are two years old from seed. I brought with me in 1883 a few large plants, to try and get a good start, but all have been destroyed but one. The fungus commences at the bottom, and usually reaches the latest summer growth before fall, when the whole tree dies; once in a while it does not quite reach the top, when there is a little green left to begin a new year with. I have but one tree left, and that has this season only a little tuft of green—about enough to fill my hat at the top. I send you a piece, to show how it works. I suppose your cool and moist climate is not so favourable to the growth of the fungus. [It is not known here. Ed.] It does not seem to be voracious here till soon after midsummer. *Thomas Meehan.* [What if the Americans of the future have to come to the old country to see the Sequoia, will they then be reconciled to the garden name of Wellingtonia! Ed.]

Red-berried Elder.

Your correspondent, "H. M.," p. 474, believes that the Red-berried Elder rarely fruits in England. My experience may enlighten you. Formerly it fruited beautifully on my grounds, but in an evil hour the city of Philadelphia voted 100 dols. for an importation of 1000 house sparrows—English sparrows we now call them. There are millions of them now. They eat every berry before they begin to colour. In order to get the specimens figured in my *Flowers and Ferns of the United States*, the flowers had to be covered with gauze. I have not had a solitary berry on my plants for ten years at least. The strangest part of the story is, that on a large bush of the black-fruited Elder—the American ally of your Sambucus nigra — no berry is ever taken. As I remember my early English days, the sparrow does not eat black Elder berries with you either.

Truly, as "H. M." says, it is a beautiful plant. One of the loveliest sights I ever met was a specimen on the Pacific coast, near Fort Wrangel, in Alaska, This, as I remember it, must have been 10 or 12 feet high, and about as wide, with hundreds of its short racemes covered with bright-red, currant-like fruit. The Holly at Christmas could scarcely be more soul-inspiring. This is, of course, the Sambucus racemosa var. arborescens, of Torrey and Gray, which, besides its larger size, has the leaflets more closely and deeply serrate than in the usual form, which is rather common in the mountain regions of the Eastern United States, as well as rather generally diffused in the woods of Canada. *Thomas Meehan.*

Vegetables.

VICTORIA SPINACH.

This useful vegetable deserves extended cultivation, and my object in sending this note is to draw attention to the merits of a comparatively new kind sent out by Messrs. Veitch; it is called by them Victoria Improved Round-seeded. It is classed as a summer Spinach, and for this season it is far in advance of any other variety, as it will remain a much longer time fit for use before running to seed, and the leaves being much finer than other Spinaches, it requires more room to grow. In sowing the seed, we give it 18 inches between the rows, and thin it out in the rows to 8 inches from plant to plant. It is of a darker tint of green than other Spinach, and is more valued in the kitchen for that reason. I have for the past two years cultivated it as a winter Spinach, and the first time I did so I did not sow much of it, but it grew and withstood the rigours of the winter so well, that I decided to grow very little prickly-seeded Spinach the next season; and now that I have tried it on different soils, and found it is good on all, I shall grow no other sort. At the present date the size of the leaf is remarkable, and there are no bare spots, as is sometimes seen in the Spinach quarter. I have a piece of the new Viroflay Spinach for trial this winter; I have not tried it previously, but a good dish of it was shown at the Royal Horticultural Society's Conference. It has likewise large dark green leaves, and is the variety which is much grown about Paris.

It was sent out by Messrs. Vilmorin, Andrieux & Co. *G. Wythes, Syon House.*

Bean, Carter's Longsword.

Too much cannot be said in praise of this excellent Bean, whose pods measure 9 inches in length, and which is a most prolific cropper, in that respect excelling Ne Plus Ultra, which I also grew last season.

Tomato, Carter's Perfection.

This fine Tomato has done so well with me as to be the talk of my neighbours, and some of the fruits I took to the local show weighed 1 lb. each.

Pea, Green's King of the Marrows.

There cannot be a better Pea than the above variety to sow for the main crop, it being of good flavour and great cropper. I have grown it for the second year, and am therefore enabled to speak as to its merits. *G. Howes, Merton.*

Plants and Their Culture.

The Fernery and Ferns.—Most of these plants will have completed their growth and may be kept somewhat dry at the root, and with less atmospheric moisture. When watering becomes necessary it should be done effectually, and also early in the day.

Temperature should be reduced so that the plants get a rest, and to enable the fronds, if cut for bouquets, to be more lasting; 60° will be sufficiently high at night for many of the stove species, a few degrees higher than this being afforded during the day. During cold weather a 5° lower night temperature will benefit the plants—stronger growth will result when the plants are started. Gymnogrammas and Cheilanthes should be kept free from drip, and at the drier and warmer part of the house; Nothochlænas need similar treatment, but what water the plants require should be freely given, as if in a pot-bound condition they soon suffer from drought. Adiantums will often need the decayed fronds to be removed to prevent them from damping, and the plants kept for cutting will be best if kept in a drier house, at about 55°.

Platyceriums should be kept a little drier at this season. Pteris cretica and P. serrulata should be kept cool if grown for cut fronds. Pot up seedlings as soon as large enough, and grow them in a warm house. Tree Ferns should have plenty of moisture, and the trunks be syringed on all favourable occasions, or the plants will suffer and thrips attack them. Basket Ferns should be rested if possible by their removal to a cooler temperature, but if this be impracticable, two sets of baskets should be used, then they can be given a rest in turns. Deciduous kinds should get no more water than is necessary to kept them in good condition. If too much be given at this season, the plants will start into premature growth, and the fronds will be weak. They may be placed on their sides at the cooler end of the house, out of the reach of drip. Any species that have got infested with scale should be taken in hand during the winter, and cleansed. If deciduous Ferns are in small pots, the laying them on their sides is not to be recommended, they being sometimes overlooked and then get too dry; but if possible a shelf or bed where they can be examined occasionally is the safest place in which to put them.

Any unsightly damp spots in the fernery may be planted with Adiantum-capillus veneris; these will often grow where no other plant could exist. Pteris serrulata and its varieties are good for cutting, and require very little root space, if kept well syringed. These small-growing Ferns are often of use for table decoration.

Selaginellas.—These plants may be increased in numbers if they are required early in the spring. If any of them in pans are not growing freely, and they they are choice species, a few pieces should be put into small pots, thus avoiding loss from damping off, which often happens to dense clusters in large pans. In the spring these little potsfull may be placed in pans. Dense-habited species require closer attention than the spreading and freer-growing ones, and must not be damped overhead during the winter. The scandent species should get a few new pegs and some fresh pieces of fibrous peat, and lumps of charcoal as a top-dressing. The roots often get exposed during the summer months by heavy syringing and waterings.

A good stock of Ficus repens and F. minima should be secured, and some also of the useful Panicum hispidulum variegatum; Pilea muscosa is useful in small pots. These plants are good for intermixing in ferneries and draping bare places. Asparagus plumosus nanus, A. tennissimus, are of value trained to the walls of ferneries, or on strings carried up to the roof, being always acceptable when cut, for bouquets, &c. *G. Wythes, Syon House, Brentford.*

Fruits Under Glass.

Pine-apples.—Suckers of these will require at this season much care, so as to strike the happy mean of not stunting or starving them, or unduly exciting them. The temperature in the pits should range from 55° to 60° at night, and 65° to 70° by day, with sun-heat, giving air, but endeavouring to keep it nearer to the former than the latter. A bottom-heat of 75° to 80° should be maintained, and very little watering will be required with this amount of warmth, but a little damping of the walls and paths on very fine days will be beneficial to the plants. The three great things to avoid in Pine growing, at this time of year especially, are overheating, over-crowding, and over-watering. It is much better to weed out and throw away some portion of the stock rather than to have them growing too closely together. I have seen them before now, when taken out of the pit, with the foliage so drawn and weak, that the leaves would fall down round the pot unless they were supported. Such plants, with all the care imaginable, would never give satisfactory fruits.

Succession fruiters intended to ripen next summer should still be kept quiet, as advised in last month's Calendar. Afford the plants no water unless they are in a very dry state—certainly very little will be required in such weather as we are experiencing in the Midlands—the densest fog. In resting the plants, do not starve them with too low a degree of warmth. A mean of 58° will do at night, raising or lowering it a few degrees in accordance with the conditions of the weather outside. A mean of 65° by day is a good one, giving air as the sun causes the temperature to rise. The botton-heat must be watched carefully, and it must not fluctuate, but be kept at about 75°.

Plants starting.—Any plants starting now should be favoured with a light sunny position, care being taken to protect them from any drip or condensed moisture settling on them. Fruits swelling must also be encouraged as much as possible with a moist, warm, growing atmosphere, the night temperature about 70°; the day temperature may be 75° to 80°, taking advantage of any sunshine to give air, so as to keep the crowns from drawing and getting too large, a moist atmosphere being kept up meanwhile. A good bottom-heat must be maintained, and manure-water applied to the plants when required, the necessity for this depending on the source of the bottom-heat. If it be from pipes, and there is not much plunging material between them and the plants, they will require much more water than if they were plunged in tan alone. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Pruning and Dressing Trees.—As soon as the foliage has fallen, no delay should occur in getting most kinds of fruits pruned and dressed. The best remedy for scale, &c., I find, is paraffin and soap-suds, well mixed in the following proportion, that is, one gill of the former to four gallons of the latter, and applied with the syringe. In pruning trees, espaliers, and wall trees horizontally trained, the removal yearly of some of the old spurs is to be advised; and these if sawn off within half an inch of the main branches, and pared over with a knife, will push fresh healthy buds at the base, and become fruitful in a year or two. This operation should be followed at each winter pruning, so that fruitful buds will always abound close to the branches, instead of standing out 1 foot or more, as they are sometimes to be seen. Young trees which may not have reached their proper height, should have the leaders stopped just above where the next pair of branches should push forth. As the pruning proceeds, remove all the previous year's ties, and replace them with fresh ones, and do not tie so tightly as to cut into the bark.

Bush Fruits.—These should be pruned so that the branches are kept at fairly wide distances apart, to admit light into the head. If this operation be well done, fine fruit will be the certain result. All side shoots should be shortened back to two buds, and the leading ones to varying lengths according to their position. It may be well to mention that bushes and trees grown on the system of restricted root-run and top-growth, should be transplanted or root-pruned as may seem necessary, and especially when the soil is rich and deep.

Plums on walls may now be pruned, and as the most profitable system of training the Plum is that known as the fan, gaps caused by branches dying out, can now, by duly regulating the branches, be covered. Prune lateral shoots back to within a few buds of the main branches, and lay in young shoots, to fill in course of time the space occupied by old ones. When fastening the branches—if it is done with nails and shreds—in driving in the nails be careful not to bruise the bark with the hammer, as this kind of injury is, in many instances, the cause of gumming. *H. Markham, Mereworth Castle, Maidstone.*

The Kitchen Garden.

Broccoli.—The continued mild weather has caused Broccoli to continue to grow beyond the time that is deemed safe for it to do so, and pass the winter in safety. We may have a mild winter, but it is as well to use precautions, in case the winter should prove severe; no time should therefore be lost in checking growth, by partly lifting the plants, and laying their heads towards the north, the most damage being done by the sun shining directly into the heart of the plant when it is frozen. In laying down the plants, remove a good forkful or two of soil from the north side of the plants, and push it over, so that it lies in an almost horizontal position, and the soil from the plant next in the row should be thrown on to the stem of that first laid down, and so on. As the work of laying down proceeds, some litter, bracken, or dry leaves, should be placed amongst the plants, the plants themselves as they are laid over preventing this material from being blown about. Should the plants not be very long in the stem, they may be afforded the necessary protection, without having recourse to layering, by placing some loose material amongst them, and the looser it lays the warmer it is.

Celery.—All Celery in trenches should now be earthed up, as soil affords the best protection against frost and moisture; but when the soil is of a very heavy nature, I should be inclined to use dry bracken during hard weather, instead of almost covering the plants overhead with the soil. On the contrary, where the soil is light, there is no question as regards it being the best to earth up with. The plants when dry should be earthed up till only the tips of their leaves are visible. In wet heavy soils, the best way is to plant Celery in beds on the ground level, and dig trenches around them to supply the soil necessary for earthing up.

Asparagus.—The dead stems should now be cut off 2 inches above the ground, the beds cleared of weeds, evenly top-dressed with rotten manure, and, if manure on the surface be objected to, a little mould out of the alleys may be placed on the top of it, and smoothed with a rake, lining out the beds anew, and cleanly raking out the alleys. This applies to Asparagus beds on dry soils; on soil which is heavy, this course would only tend to hasten the destruction of the plants, and instead of using manure, I would advise covering the beds with dry leaves to the depth of 1 foot or more, thatching them over with straw. The alleys should be of the depth of 1 foot or 15 inches below the crown of the bed, so that good drainage may be assured. The top-dressing may in this case be applied in the spring, and in the form of artificial manures in preference to stable-dung. Plants to be forced should have some litter spread on the surface of the soil.

The beds which are being forced should be examined carefully daily to see that the heat is not excessive, especially in mild weather. Should the heat be found great on using the probe stick, holes of 2 inches diameter must be made in several places to allow the excessive heat to escape, and a trifling amount of air may be afforded the pit during the night. Whenever the crowns begin to push above the soil, abundance of light and air must be secured on fine days, so as to secure a green crisp head, for if blanched, it is almost useless, the white part being tough and stringy, and it is fit only for soups. *W. M. Baillie, Luton Hoo.*

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

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APPOINTMENTS FOR THE ENSUING WEEK.

SHOWS.

WEDNESDAY, Nov. 27—Barton-on-Humber.
THURSDAY, Nov. 28—Pontefract (two days).
FRIDAY, Nov. 29—Dundee (two days).

MEETING.

TUESDAY, Nov. 26 { National Chrysanthemum : Floral Committee.

SALES.

MONDAY, Nov. 25 { Dutch Bulbs, at Stevens' Rooms. / Dutch Bulbs, at Protheroe & Morris' Rooms. / Clearance of Portion of Nursery Stock, at the Penge Nursery, Penge, by Protheroe & Morris (two days).

TUESDAY, Nov. 26 { Lilies, at Protheroe & Morris' Rooms. / Roots, Fruit Trees, Bulbs, &c., at the City Auction Rooms, by Protheroe & Morris. / Fruit Trees, &c., at Reading, by Protheroe & Morris.

WEDNESDAY, Nov. 27 { Roses, Fruit Trees, Shrubs, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms. / Plants and Hardy Bulbs, at Protheroe & Morris' Rooms.

THURSDAY, Nov. 28 { 10,000 Lilium auratum and other Bulbs and Roots, at Stevens' Rooms. / Dutch Bulbs, at Protheroe & Morris' Rooms.

FRIDAY, Nov. 29 { Established Orchids, at Protheroe & Morris' Rooms.

SATURDAY, Nov. 30 { Roses, Fruit Trees, Shrubs, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms. / Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—41°.4.

Forestry.

WORKS on gardening, and especially on forestry, are too often conspicuous for their defects as regards general principles. They are written for the most part by untrained specialists, who have learnt by tradition and by personal experience only, and their books too often stand in need of editorial pruning and revision.

No one underrates the value of inherited knowledge, while everyone appreciates the fact that experience is the best of all tutors. But the experience of an individual, even under the most favourable circumstances, must needs be limited, and to turn it to the best account, it is necessary that it be combined with a sound and comprehensive knowledge of general principles. The typical gardener or forester is one whose acquaintance with the principles of his art is of such a nature as to be available for use in the varied circumstances and exigencies, often unforeseen, of practice. If the possessor of such knowledge be not able to apply it practically, he is a theorist. Such an one may be useful as a writer of books, or a teacher in the lecture-room, but is only indirectly serviceable so far as practice is concerned. On the other hand, when the man of practice, deficient in knowledge of principles, and ignorant of method, sits down to write a book, he too frequently fails either to convey his meaning clearly, or to add anything material to what is already known.

The contrast between the literature of forestry in this country and that on the Continent, especially in Germany, is rather a painful one. Of course, one great reason for this inferiority in our literature arises from the comparatively small degree of importance which we in this country attach to sylviculture. So far, we have enough coal; up to this time we can import enough timber for our requirements from the Baltic or elsewhere. Timber growing is not very profitable at any time, and the capitalist must needs, in any case, wait a long while before he reaps the benefit of his investment. Still, under the existing conditions of agriculture, when it becomes necessary to reduce the cost of labour and of production generally, it is only natural that landed proprietors should turn their attention to their woodlands, and even consider whether or not it may not be advisable to turn some of their waste land to account in the future by the growth of trees. From this point of view, it is undeniable that there are thousands of acres at present unproductive, or nearly so, which might be converted in course of time into profitable areas. Of course we are not alluding to deer forests or game preserves, wherein the protection of deer forms a revenue-producing item, in comparison with which sylviculture proper may be said to be almost non-existent. In these (in so far degenerate) days, there is a tendency to appeal to the Government to undertake what has hitherto been undertaken by private agencies. In a matter like re-afforestation, the intervention of Government seems absolutely necessary—as in Ireland, for instance. In the Isle of Man, also, a work has been undertaken under Government auspices which could hardly have been done by private enterprise. As for our colonies—Canada, the Cape, or parts of Australia—the demand for forest conservancy is indeed urgent. In India—well, let us just copy what Dr. SCHLICH, the late Inspector-General of Indian Forests, has to say on this question in his recently published *Manual of Forestry*,* of which the first volume is before us :—

"The net revenue, after meeting all expenses of the department, has been as follows since 1864, the year in which the department was first established as a general State Department :—

1864—1867,	Average	Annual	net revenue	= £106,615
1867—1872	,,	,,	,,	133,929
1872—1877	,,	,,	,,	212,919
1877—1882	,,	,,	,,	243,792
1882—1887	,,	,,	,,	334,752

"The annual net revenue during the period 1882—1887, was nearly four times that of the period 1864—1867, and the increase is going on with undiminished rapidity. There is little doubt, if any, that twenty-five years hence the net surplus will be four times the present amount, if the Government of India perseveres in its forest policy as developed in the past. Indeed, if it would not be going too far to say, that the increased forest revenue bids fair to become a substantial set-off against the expected loss of the Opium revenue, a loss which may occur some day. This is the legacy left to the Treasury of the Indian Empire by the men who have directed its forest policy during the last twenty-five years." Can any one suppose that such results could have been achieved by the same unintelligent routine practice that has governed our home agriculture and forestry? Is it not rather a striking illustration of what science and the application of scientific methods to practice can do.

To the knowledge and zeal of Indian botanists, as we have often had occasion to point out, India owes an enormous debt. The introduction and extension of the culture of Tea, Cotton, Cinchona, and numerous other products, is mainly due to them, and among the latest of their triumphs is the consolidation of the forest economy of India on both sides of the Ganges. Dr. CLEGHORN, Sir DIETRICH BRANDIS, and other pioneers, found their labours immensely increased by the want of trained assistants. Military officers had habits of discipline, and a certain amount of general education, which was valuable, but naturally they were deficient in special knowledge, and quite innocent of practical training. To remedy this inconvenience, arrangements were made for the training in the forest-schools of Germany and France of a certain number of students who, at the close of two or three years' study and practical work in the forests, were, if found competent on examination, drafted off to India as Assistant-conservators of Forests; but, after awhile, it began to be realised that we could, if we chose, secure as good a theoretical education for the young foresters in Great Britain as they could obtain in either Germany or France. To this end, a forest school was established in connection with the Royal Indian Engineering College at Cooper's Hill. The organisation of this school was deputed to Dr. SCHLICH, who was specially well qualified for the work by his lengthened services in India. The want of text books abreast of the times and adequate to the requirements of the case, was of course early felt, and Dr. SCHLICH was instructed to prepare a handbook on the subject. The first volume of this is now before us, and we hasten to congratulate English foresters on its production, and to felicitate Dr. SCHLICH on the results of his labours.

A scientific treatise on forestry to a man unfamiliar with mathematics, and not so well versed in botany, geology, and half a dozen other sciences as he might be, is a formidable affair. Let us at once assure landed proprietors and others concerned in the management of woodlands, that they have nothing to fear from Dr. SCHLICH's book. There is no bewildering array of formulæ, no overpowering display of figures and tables, no overloading the text with a jungle of technicalities. On the contrary, Dr. SCHLICH's book is systematically arranged, lucidly written, and not overburdened with detail. An excellent table of contents is at once a boon to the reader, and an illustration of the excellent method followed by the author. An alphabetical index would have been an additional advantage, but possibly this may be supplied in future volumes.

Lest the reader should suppose that this work only concerns Indian forestry, it is necessary to point out that it deals with the utility of forests generally, and next with the fundamental principles of sylviculture, and both these matters, of course, are as applicable in Connemara as in Cochin. Financial considerations are largely treated of—points in which mere scientific treatises are generally defective, but which are all important for practical purposes, and which, if well-handled, inspire the reader with a confidence that the discussion of scientific theories or tech-

* *A Manual of Forestry*, by W. SCHLICH, Ph.D., &c. At vol. i., The utility of Forests, and [the] fundamental principles of Sylviculture. 8vo, pp. 232. BRADBURY, AGNEW & Co.

nical details would not impart. The style, as we have said, is for the most part, clear and uninvolved, the lucidity being aided by occasional summaries. Here and there, we suspect, the scientific purist would question some expression or some presentation of chemical facts, but these are minor points. We had marked several passages for comment, but it is far better that the reader should be his own commentator. We can assure him that the task is one which he will appreciate, and from which he will derive benefit. Our space only permits us to add the following extract, which will be read with interest at the present moment:—

"*Forestry in Great Britain and Ireland.*—The labour question in connection with afforestation is of some importance in these islands. If the forest area were increased by 6,000,000 acres during the next twenty years, it would be necessary to plant annually some 300,000 acres, which would fully employ at least 15,000 labourers (one labourer for 20 acres), corresponding to a population of 75,000 people. After the forests had been created, they would give steady employment to perhaps 100,000 labourers, corresponding to a population of half a million of people, apart from special forest industries which the existence of extensive forests tends to create. Large as these figures are, they show that forests give but small employment when compared with the cultivation of field crops on equal areas; it follows that, as regards the labour question, no lands required for field crops could be made available for forests. The latter must, in this respect, be restricted to surplus areas, as long as forest produce is obtainable at a reasonable rate from abroad. If, however, large numbers of people are in want of work, it would be a judicious measure to give them employment by afforesting available waste lands, a consideration which is of special importance to Ireland. With the exception of the duties performed by the administrative staff, the work connected with forest operations can be made to fit in with agricultural occupation, and the smallest cultivator, especially in the poorer parts of the country, can take advantage of every spare day to earn a day's wages by work in the forest, and so add to his income, which would be a substantial help in enabling him to meet the payment of rent, taxes, &c. As regards Ireland in particular, afforestation would prove to be a useful auxiliary in solving the land question, and through it, the ultimate restoration of peace and quietness in that country."

Gardeners' Royal Benevolent Institution.—At a meeting of the committee, held on November 19, it was resolved to put fifteen pensioners on the list on January 16, six of whom will be placed on the list without the trouble of an election, as having subscribed during fifteen years, in accordance with rule 6. The remaining nine approved candidates will be ballotted for in the ordinary manner. There were in all twenty-five applications. It was further resolved to add the sum of £500 to the reserve fund, making a total of £22,500 invested in Government securities. Voting papers will be in the hands of the subscribers about the middle of December.

Linnean Society.—A meeting took place on November 7, Mr. W. Carruthers, F.R.S., President, being in the chair. Messrs. Miller Christy, John Fraser, W. T. Rabbits and Col. Swinhoe were admitted Fellows; and Mr. Thomas Scott, of Leith, and Mr. A. J. Campbell, of Melbourne, Australia, were ballotted for and elected. Mr. H. Veitch exhibited a beautiful series of East Indian hybrid Rhododendrons, on which Prof. Henslow made some valuable remarks on the effects of cross fertilisation in regard to colour and alteration of structure, upon which some critical observations were



Fig. 83.—transplanted hollies. (see p. 600.)

made by Mr. Veitch, Prof. Bower, and Capt. Elwes. Mr. E. M. Holmes exhibited and made remarks upon some new British Marine Algæ, describing their origin and affinities. Mr. W. B. Hemsley then read a paper by General Collett, C.B., and himself "On a collection of Plants made in the Shan States, Upper Burma." An interesting discussion followed, in which Messrs. J. G. Baker, C. B. Clarke, and Capt. Elwes took part.

National Rose Society.—The arrangements to be submitted to the next general meeting, are the Metropolitan Exhibition to be held at the Crystal Palace, on Saturday, July 5, 1890; and the Provincial Show at Birmingham, on Thursday, July 17. In the latter show, silver cups of the value of £10 10*s.* have been presented by the Right Hon. Lord Calthorpe, the Right Hon. Joseph Chamberlain, M.P., and R. H. Griffiths, Esq. The annual meeting will be held at the rooms of the Horticultural Club on Wednesday, December 4, at 3.30 p.m., and the annual dinner will be held at the same place on the same day at 6 p.m., when the chair will be taken by the Very Rev. the Dean of Rochester, President of the Society.

The Eiffel Tower.— The observations of three months, quoted in *Nature*, show that the velocity of the wind at the top of the tower is about three times greater than at the bottom. The minimum occurs (as in mountains), about 10 a.m., the maximum at 11 p.m., whereas on level ground the average minimum is at sunrise, and the maximum at 1 p.m.

Flora of China.—We have repeatedly called attention to the great interest attaching to the flora of China as now being worked out by Mr. Hemsley, in conjunction with Mr. F. B. Forbes. The interest is not merely botanical, though that is very great; but it is in a special degree horticultural. It is a misfortune that Dr. Henry, from whom so many novelties have been received, should have been removed by the Chinese Government from Y Chang to Hainan. Baron Richthofen reports that there is a splendid field for research in the Tsingling Mountains, the province of Szchuen, and its elevated region west of Ching tu fu. Introducers of new plants please note.

Science and the Civil Service.—We are glad to find the University of Cambridge calling attention to the educational value of natural science, and to the fact that the training which it affords, combining, as it does, both theory and practice, is such as peculiarly to fit a student for the pursuits of practical life. It must surely be admitted that such a training is likely to be far more useful to the majority of lads, who have to make their way in the world, than drilling in classics and mathematics. Cambridge, as befits a great University, has known, especially during the last quarter of a century, how to adapt itself to modern ideas, and how to supply not one or two sets of requirements, but many.

The Vegetable Conference at Chiswick.—This important exhibition forms the subject of an interesting article by M. Henry de Vilmorin, in the last number of the *Revue Horticole*. Celery is said to be better cultivated in England than in France, and a good word is said in favour of our Beetroots, Turnips, and Parsnips. French Radishes are superior to our own; English Potatos are greatly admired, and the production and setting up of the tubers for exhibition is said to be carried by us to an incredible degree of perfection. And yet such is the caprice of fashion, few of these fine varieties would find favour in French eyes because they have not yellow flesh!

Municipal Honours to a Nurseryman.—On November 9, Mr. W. H. Rogers, the well-known Southampton nurseryman, was elected an alderman of Southampton. Some years since, Mr. Rogers was an active and popular member of the Corporation, but party discipline deprived him of his position. Howevèr, party discipline has brought him back again, and, should he be spared health and strength, Southampton may have the benefit of his services as a local governor for six years at least. In a town so richly endowed as Southampton is with public land and parks, it is to be deplored that party exigencies should have deprived the town of such capable services as Mr. Rogers can render. Happily, however, he is restored to the position in the borough he is so eminently fitted to occupy.

Vegetables for Exhibition.—Mr. A. Dean, of Bedfont, is announced to read a paper before the Reading Gardeners' Mutual Improvement Society, on Monday next, November 25, on the above subject.

Chiswick Horticultural Society.— The autumn show was held on the 14th inst. in the Chiswick Vestry Hall. There were some capital blooms and plants of Chrysanthemums, and the cottagers' classes for these, as well as for vegetables, were well sustained. Messrs. W. Fromow & Sons, nurserymen, Chiswick, led well for a group of Chrysanthemums, lightly arranged, and containing some fine heavy incurved blooms. Mr. Webb, gr. to J. R. Starling, Esq., Chiswick, who came 2nd, had chiefly Japanese blooms, the arrangement being too stiff and crowded, and the front-row plants elevated on extra pots, as though Chrysanthemums were too dwarf! Mr. E. Saunderson, Willesden, had the finest incurved flowers; and Mr. C. J. Waite, Esher, led for Japanese, and also in the chief class for eighteen blooms of each section. Mr. J. C. Cowley, gr. to F. G. Tautz, Esq., Shepherd's Bush, had a fine plant of Cypripedium insigne. The Royal Horticultural Society sent Apples, Grapes, and a group of single and Pompon-flowered Chrysanthemums. Mr. May, Chiswick House Gardens, and Mr. Reynolds, Gunnersbury Park Gardens, Acton, both contributed non-competitive groups of plants; and Messrs. Manda & Pitcher exhibited blooms of Mrs. Alpheus Hardy. Other prize-winners included Messrs. Palmer, Wood, Mears, Aitken, and Chadwick.

Popular Names.—It turns out that the rare Shortia, figured in the *Gardeners' Chronicle*, March 30, 1889, p. 397, is not so rare or so little known as not to be endowed with a popular name. *Garden and Forest* tells us that in the valleys of the Alleghany Mountains, where the plant occurs, it is called Little Coltsfoot, from the resemblance of its leaf to that of the Coltsfoot. But alas for popular names! the Coltsfoot of the Alleghanies is not our Coltsfoot —but Galax, a plant unknown to the average Englishman.

Catalogues of Fruit, and the Public.—The question of how our fruit supplies may be augmented is constantly receiving attention in one quarter or another, but no one has as yet shown how the nursery trade could render efficient assistance to that end. It is matter of general complaint amongst buyers, and would-be buyers, of fruit, trees who may not be possessed of special knowledge, that the lists usually sent out by the trade are too lengthy, as well as misleading. It is selection that is wanted by these persons, and not long lists of names, which merely confuse them. The matter could readily be put right by the nurserymen issuing small sheet lists of fruits of—say—note-paper size, for distribution by messenger or by the post amongst occupiers of land in the district, not omitting the cottager and small householder who may have a home paddock or large garden—a common occurrence in most villages in England. The list need not extend to more than six or eight varieties of Apples for the dessert, viz., King of the Pippins, Cox's Orange, Ribston, Kerry Pippin, Irish Peach, Devonshire Quarrenden, Scarlet Nonpareil, Worcester Pearmain, and Wyken Pippin. For cooking: Stirling Castle, Hawthornden, Dumelow's Seedling, Lane's Prince Albert, Tower of Glamis, Beauty of Kent, Keswick Codlin, and Alfriston. The chief points observed in making the above selection are the length of time covered by the varieties, good cropping and travelling properties, and first-class quality. Many fine fruits are reluctantly omitted, but that is unavoidable in selection; moreover, the fruits named are those which obtained the greatest number of votes at the Chiswick Apple Conference, as being those which are generally found to be of value all over the country. Pears to be planted on walls or fences, six varieties of which we indicate: Williams' Bon Chrétien, Jargonelle, Emile d'Heyst, Beurré d'Anjou, Thompson's, Knight's Monarch, Glout Morçeau and Marie Louise; for standards or bushes, Louise Bonne of Jersey, Eyewood, Suffolk Thorn, Dunmore, Marie Louise d'Uccle, Beurré Diel, Josephine de Malines and Seckle. Then a short list of Plums should be given of varieties both early and late, and which will grow and ripen almost anywhere south of the Humber, of which mention may be made of Denyer's Victoria, Old Orleans, common Green Gage, Fellenberg, Pond's Seedling, the small yellow Mirabelle, Czar, Monarch, and Pershore, large and small Damsons, a few; the best Currant, red, white, and black; good cropping Gooseberries of large size, as well as a few of the best dessert varieties, which always sell well in the market; Raspberries, say, Baumforth's Seedling, Semper Fidelis, good for jam, and an immense bearer; Fastolf and Red Antwerp; Strawberries of approved good travelling varieties might be included. The list should contain a few simple directions about tree planting and preparations of the ground, and hints as to the pruning and future management of the trees, bushes, &c., together with the price per plant or per 100.

Chrysanthemums in Jersey.—On the 13th and 14th inst., an exhibition of Chrysanthemums was held in the Oddfellows' Hall, St. Heliers, and attracted much attention. Incurved and Japanese blooms were both finely shown, the best twenty-four of each being from Mr. R. B. Colley, who, with Messrs. Morris, May, Brown, and Captain Thomas divided the chief prizes in other classes in close competition. For a group arranged for effect, Mr. Morris led, six groups being shown. With specimen plants grown for the premier prize, a Silver Cup, Mr. Grant was adjudged the winner, for six finely-shaped plants, well-filled with flower. Mr. Becker exhibited some new varieties, amongst which was Mrs. Alpheus Hardy.

Sheffield and Hallamshire Gardeners' Society.—The twelfth annual show of Chrysanthemums was held in the Cutlers' Hall, on the 16th inst. The entries were not only above the average of preceding shows, but that the quality was very high. Mr. Redmill, gardener to Mr. J. Grayson, Lowood, had splendid blooms in the open class for twenty-four, winning 1st with good incurved and Japanese. Elaine being very fine. Mr. Redmill was again in the van in the class for twelve Japanese, distinct. The group competitions were well patronised, and well-grown plants and artistic grouping were to be seen. In the 10 feet by 6 feet groups arranged for effect, Mr. Spate, gardener to Mrs. Fawcett, Clarkehouse Road, came off with the 1st prize. Groups, not for competition, were sent by Messrs. Fisher, Sons, and Sibray; Mr. B. Crossland, Richmond Nursery; Mr. T. Moore, Glossop Road; and Mr. H. Slaney, Nether Edge. The first-named group included greenhouse Rhododendrons, a specimen Gleichenia, and several Orchids. Mr. Clements, gr. to T. P. Wood, Esq., Chesterfield, sent a very dark sport from Criterion, named T. P. Wood.

Chrysanthemums Sixty Years Ago.—The *Eastern Daily Press* of last Saturday (November 16), in drawing attention to the show to be held during the past week at Norwich, says:—"It is now just sixty years since the first Chrysanthemum Show was held in Norwich, and it is believed in England. On November 25, 1829, the Norfolk and Norwich Horticultural Society held its first exhibition at the 'Swan' Inn, St. Peter's, and as it was apparently considered to be an undertaking of a somewhat rash description, no prizes were offered. Amongst the exhibits at that show were twenty-four pots of Chrysanthemums, sent by Messrs. Mackie, florists, of this

city (Norwich), amongst which were the following:—Curled Lilac, Early Blush, Semi-double Quilled Pink, White Quilled, Tasselled Yellow, Park's Yellow, and Purple Quilled; and forty pots sent by Mr. Charles Middleton, comprising Tasselled Lilac, Early Blush, Changeable Pale Buff, Changeable Pale White, Park's Yellow, Spanish Brown, Tasselled Yellow, Changeable Purple, Quilled Orange, Two-coloured Red, Early Crimson, White Quilled, and Purple Quilled. These names are, with one or two exceptions, practically unknown now."

The Isle of Man.—Mr. Farrant kindly sends us a magnificent cone of Pinus Ayacuité, which is as large as finely-developed native specimens, and much finer than that which we figured from Cheshunt on a former occasion. Mr. Farrant also sends leaves of Rhododendron Falconeri, the blade of one of which measures 11½ by 6¼ inches. The tree has stood in the open air for the last twenty-eight years, and is now about 16 feet high, and very bushy.

Chrysanthemum Sports.—Two very curious and interesting cases are before us. One was sent us by Mr. Maries, of Lytham. The flower was from a plant of Source d'Or, half the flower-head consisted of spreading, flat, canary-yellow ray-florets, while the other half of the flower-head consisted of recurved golden-bronze florets with revolute edges. Thus two distinct types were represented in one head. The other flower came from Mr. Smale, of Torquay, and is from the variety known as Mrs. N. Davis. It is an incurved flower, the florets on one side being provided at the back with hairs, and projecting tooth-like lobes like those of Mrs. Alpheus Hardy. Of all florists' flowers, the Chrysanthemum is the most satisfactory and delightful to many people, precisely because it kicks over the traces and refuses to be throttled by arbitrary, and in some respects, irrational standards.

Gravesend.—The taste for growing the Chrysanthemum has for a long time held place at Gravesend, and the show held there on the 13th and 14th inst. was in no way behind its fourteen predecessors. Trained plants were well shown by Mr. Richardson, Sir Jas. Ferguson's gardener at Inglewell; by Mr. Stevens, Mr. Jobhurst's gardener, Northfleet; and by Mr. Pope, Gravesend. Cut blooms were very good for the season—an early one, and the lion's share of prizes fell to Mr. Simon, gardener to Mr. A. E. Roberts.

Hybrid Dahlias.—Mr. E. J. Lowe sends us some interesting flowers, the results of a cross between Dahlia White Queen and D. Merckii. The flowers are of medium-size, single, and of varied shades of colour, from white to primrose, yellow, orange, red, violet, purple. The outermost involucral scales are five in number, and spreading. There is, we think, no doubt at all of the success of this cross. Mr. Lowe also sends a flower purporting to be a cross between a Dahlia and a perennial Sunflower. Far be it from us to say such a cross is impossible; all we can affirm is that the flower we examined was a Dahlia, with little if any trace of Helianthus. With reference to supposed bi-generic crosses, we have often observed a great disturbance of the natural structure in such cases, but without the occurrence of any change indicating a true cross or admixture of separate elements.

Ladoga Wheat.—According to some experiments made in Canada, under the superintendence of Professor W. Saunders, it appears that the Ladoga is a productive and valuable variety of hard Wheat, which has ripened all over the Dominion on the average ten days earlier than the Red Fife, while it contains an equal proportion of gluten.

Scented Chrysanthemums.—Considerable difference of opinion exists as to whether Chrysanthemum flowers, apart from the foliage, have any perfume, or, if they have, whether that perfume is agreeable or not. Obviously every one must judge for himself as to the last-named point, but in the meantime we may mention a few varieties which are in good repute for their fragrance, as Progne, Dr. Sharp, Faust, and Cullingfordi.

Rose Duchesse de Dino.—A hybrid perpetual, like Madame Victor Verdier, with dark crimson flowers, which do not fade in the sun so soon as some other Roses do. It is sent out by M. Lévêque, of Ivry, and is figured in the *Revue Horticole*, November 16.

The Clyde Disaster.—The following additional sums have been either paid or promised:—

	£	s.	d.
Messrs. Sander & Co.	5	0	0
Mr. John Seden ...	0	10	6
John Cowan, Esq. ...	1	1	0
Mr. Howe'l	0	10	6
Mr. E. Jenkins ...	0	5	0
Chas. Toope, Esq., Stepney	1	0	0
Mr. White, Dorking ...	0	5	0
Mr. W. Osborne, Fola Island	1	0	0
Fredk. Tautz, Esq., Studley House ...	2	2	0
W. R.	0	10	0
Mrs. Robt. Crystal, Glasgow	5	0	0

The following sums were collected at Mr. H. G. Smyth's stand at the National Chrysanthemum Show, Royal Aquarium:—

	£	s.	d.
Mr. W. Holmes ...	0	5	0
Mr. W. Howe	0	2	6
Mr Crute	0	2	6
Mr. F. Wilson	0	2	6
G. Mayor, Esq. ...	2	2	0
Mr. J. Roberts... ...	0	2	6
J. H. W.	0	1	0
Mr. R. Davis	0	5	0
Mr. Don...	0	2	0
Mr. Ballantine ...	0	2	6
Mr. S. Deards	0	2	6
Mr. Brangwin	0	2	0
Mr. W. May	0	2	0
Mr. J. Reynolds ...	0	2	0
A. B.	0	2	0
J. M.	0	2	0
Mr. Jos. Arnold ...	0	2	6

Second list of subscriptions sent by Mr. W. Thomson, jun., Clovenfords:—

	£	s.	d.
John Jair, Esq., Falkirk	5	5	0
Messrs. Austin & McAslan, Glasgow ...	3	0	0
W. Saunderson, Esq., Edinburgh	1	1	0
Messrs. Ireland & Thomson, Edinburgh ...	1	1	0
Mr. Keeling, Riding Mill	0	10	0
W. Little, Esq., Galashiels	0	5	0
Dr. Paterson, Bridge of Allan (second list)...	0	15	6
D. Mitchell, Esq., Corncley Bank, Edinboro'	1	0	0

Observations on the Temperature of Trees.—H. L. Russell, in the *Botanical Gazette*, says:—"The temperature of the tree, as a general rule, ranged higher than the outside, with two or three exceptions, when the air temperature was higher during the warmer portions of the day. The maximum temperature of the air was generally between 1 and 2 P.M., while the minimum ranged from 6 to 7 A.M. The following table indicates the average time of the maximum and minimum temperatures for the different depths:—

	Maximum.	Minimum.
Outside.	1.00 P.M.	6.45 A.M.
3 cm. deep.	2.00 P.M.	7.00 A.M.
6 cm. deep.	4.15 P.M.	8.00 A.M.
10 cm. deep.	6.15 P.M.	9.30 A.M.
12 cm. deep.	6.45 P.M.	10.00 A.M.

Comparative observations were made with the Pine, Larch, Oak, Poplar, and outside air, and in all cases the temperature of the Pine was found to be considerably lower than any of the remainder, with the exception mentioned. To what, then, is this lower temperature due? Presumably the thick coating of foliage on the Pine exerts a considerable influence upon it, as it would seem to have a tendency to prevent absorption of heat by the trunk, and would very likely interfere with radiation to some extent."

Stachys.—Under the name of "Stack'ys," we lately met with this new vegetable in the greengrocers' shops at Amiens, the price asked being 50 centimes the half kilo—say 5*d.* a pound. By the way, how is it that the French markets and shops in the provincial towns are supplied with so much better and fresher vegetables at so much lower cost than is the case on this side of the water? In these days of strikes, a strike might legitimately enough be made against the stale vegetables supplied at relatively enormous cost by the greengrocer, although the market growers do not as a rule find their business very profitable.

Les Fougères Rustiques.—Mr. Correvon has written a pleasant little work on hardy Ferns, illustrated with suitable illustrations. Descriptions are given of the principal species and varieties, and details are supplied as to their culture. Mr. Correvon waxes enthusiastic over the cultivation of these plants in this country, our climate, indeed, being more suitable for them than is that of the Continent. But Mr. Correvon does not forget the charms of Pregny, the domain of Baroness F. A. de Rothschild, near Geneva. He claims Goethe as the creator of the "wild garden," but we fancy it dates further back than the times of the great German poet. Mr. Wilson's garden at Wisley is selected as the most perfect type of the picturesque garden. Mr. Correvon's final recommendations are that Ferns should be planted everywhere and in abundance; but they should not be disturbed in their native haunts. "Raise them from seed, or buds, multiply them, divide them, but respect their temple, the great forest which protects and shelters them."

New York Horticultural Society.—The reason for the very partial success of this Society is thus summed up in the *American Garden*, and suggests matter for reflection nearer home:—"Well-to-do amateurs have not taken the interest which they might, if our New York societies had not been wholly run as advertising schemes for the exhibitors. If the same conditions as to membership and exhibitions, as pertain in the Massachusetts Horticultural Society, were aimed at here, we might have a prosperous horticultural society in Gotham. The tradesmen find the Boston shows of great value to them, the very restrictions on advertising schemes being an aid to business."

Orchids.—Mr. Watson's work on *Orchids*, published in monthly parts by L. Upcott Gill, 170, Strand, has now reached its sixth part. The genera treated of are Galeandra, Grammatophyllum, Houlletia, Lælia, Lissochilus, Lycaste, Masdevallia.

A Large Crop of Carrots.—We read in the *East Anglian Times* that Mr. C. Bint, of Dunmow, who sowed a quarter of an acre of ground of what is known as the Jubilee Allotments, with Carter's Scarlet Perfection Carrot, has just sold his crop by auction. The weight of the crop was upwards of 6½ tons, or about 26¾ tons per acre, many of the roots weighing 6 lb. each, and the average price made was 25*s.* 4*d.* a ton, or not quite £33 an acre.

Aberdeen Royal Horticultural Society.—On the 16th inst. a special general meeting of this Society was held in the Music Hall Buildings, Mr. J. M. Garden in the chair, to consider the proposal that the Society hold two shows in 1890—a summer and an autumn show. Mr. Reid moved, that only one show be held in 1890, and a spring show in 1891; and after some discussion, and the proposal of amendments, this was finally carried by 20 votes to 18.

Yarmouth and District Show.—The second annual exhibition of this Society was held at the Drill Hall on November 13 and 14, and was very successful. Exhibits were rather better than last year, except in fruits, which showed a falling off. The pot-plants of Mr. James Sutton, Great Yarmouth, and Mr. W. Turner (gardener), Royal Naval Hospital, Great Yarmouth, were very fine. They were of the usual kinds, and need not be enumerated. The 1st prize for twelve Japanese and twelve incurved, cut blooms, open class, was awarded to Mr. W. H. Althorpe, Cambridge, the best blooms being Sunflower, Mrs. H. Cannell, and Japonais. The premier blooms were Madame C. Audiguier, and Golden Empress. An extra prize was awarded to Mr. H. Newman, florist, Gorleston, for a fine bloom of Mdlle. Lacroix, not shown in any class, but was by far the best bloom in the hall.

Birmingham Chrysanthemum Show (*November 20 and 21*).—The finest exhibition ever seen in Birmingham, was the universal opinion of judges and exhibitors. Much interest was concentrated on the large prizes of £25, £15, £7, £4, £2, and £1 10*s.* for forty-eight blooms, and there were eight exhibitors. Mr. Parker, gr. to John Corbett, Esq., M.P., was placed 1st, and W. Marshall, Esq., Uttoxeter, 2nd; the judges admitting it to be a very close run, both lots being very fine and so close in merit; 3rd, Colonel Wingfield, with a very fine lot; 4th, Sir T. E. Moss, Bt.; 5th, Sir R. Morin, Bart.; 6th, Lord Heytesbury. For the large groups, Mr. Cooper, gr. to the Right Hon. Joseph Chamberlain, M.P., was 1st, with a splendid group, and the same exhibitor was 1st in each class for nine and six specimen Chrysanthemums. Some superb Grapes were staged, Mr. Goodacre, gr. to the Earl of Harrington, being 1st; Mr. J. Hollingsworth, gr. to J. F. Campbell, Esq., Uttoxeter, 2nd; and Mr. W. Iggulden, gr. to the Earl of Cork, 3rd.

Substitutes for Gum Arabic.—In connection with the recent disturbed state of the Soudan, and the consequent scarcity and high price of gum arabic, it is stated in a recent report, that the effects of this are now being felt in Persia, where gum is now being extensively collected from the wild Almond and other shrubs and trees, and measures are being taken to prevent the wholesale destruction of such woods. Consequent upon this, fire-wood and charcoal are expected to become scarcer and dearer in Persia, and supplies of the latter article have recently been received at Bushire from Kurrachee.

TRANSPLANTED HOLLIES.

A question often put by those who require the formation of new gardens and grounds is—"How long after planting will it take to give the place a fairly furnished appearance?" The answer depends on one or two matters. If the land to be dealt with has a few old trees upon it, or trees that have attained sufficient age to be effective, and the necessary judgment is brought to bear on the selection and planting of the shrubs and trees that are introduced, then from the first there will be an absence of that objectionable bareness which newly-made grounds invariably for some years present when planted with the ordinary small nursery stock.

As will be seen by the illustration, (fig. 83), from a photograph by Mr. Attwood, of Southgate, and which represents a view in the grounds of a new place in The Old Park, Southgate, Middlesex, laid out for Colin Docwra, Esq., by Mr. Baines, a few old trees were in this case present, and amongst the evergreen shrubs used, a sufficient number of good-sized Hollies were included. These consisted of various kinds, the largest of which were I. Shepherdii, some forty years old, ranging from 7 to 8 feet high, and as much through. They had been kept in right condition for removal by periodically cutting their roots well back, so as to cause the production of plenty of active feeding fibres near home. With a like object of removal, their tops had been kept cut in pyramidal fashion. This naturally gives them for a time a somewhat formal appearance, but in two or three years they will grow out of it. The plants were taken up with good balls, weighing from 4 to 6 cwt. each. The ground was prepared during the summer, and most of the evergreens were planted between the 1st of September and the middle of October, in 1888. The Hollies were put in first. Such of the evergreens as could not be got in within the time named were planted at the end of April this year. The photograph was taken in August, eleven months after planting.

The Hollies, prepared as described, may be said not to have known they were moved, losing scarcely any more leaves through the removal, and conveyance some forty miles by rail, than they would have done naturally if not disturbed at all. They have made from 4 to 6 inches of growth, evenly all over. An erroneous idea is often entertained that little, or nothing, is gained by planting anything larger than the ordinary trade-sized stock. Nor is this difficult to account for, especially as regards evergreens of most kinds. For, if due care be not taken to select such as are in right condition for moving, and if the taking up and replanting are not well done, and the work carried out at the right time, a large percentage either die, or suffer to an extent that death would be preferable, as when punished so much they remain for years more an eyesore than an ornament.

CUCUMBERS.

Our illustration (fig. 84) represents a house of Lockie's Perfection Cucumber, and is one which we should have had some hesitation in laying before our readers, unless we had actually seen with our own eyes, how prolific the variety is. One day in the autumn, we found ourselves at Mr. Lowe's nursery, at Uxbridge, not a little astonished at the profusion and excellence of the Chrysanthemums, and other market plants, of which we gave an account at the time, p. 268. But Chrysanthemums did not exhaust the supply of wonders, for there were two span-roofed pits, each 100 feet long, filled from end to end, with an even crop of Lockie's Perfection. One end of one of the houses is shown in our illustration. As a Cucumber, it merits its name, it is not too big, it is even and regular in shape, with a short neck, of good flavour, and wonderfully prolific, as our illustration shows. The Cucumber will be sent out by Mr. Charles Turner, to whom we are indebted for a photograph of the house.

Foreign Correspondence.

ANTWERP.

The Royal Society of Horticulture and Agriculture of Antwerp celebrated the Centenary of the introduction of the Chrysanthemum into Europe by a great exhibition, held in the Hall of the Royal Harmonic Society, on the 17th, 18th, and 19th inst. The large groups on the ground floor were nicely arranged in an undulating manner, to suit the shape of the building, each plant being staged in such a manner that all the blooms and foliage could be distinctly seen, and each plant adjudged according to its merit; so that there was none of the overcrowding that is often seen. The plants were well furnished and fresh, and generally good. The cut bloom left much to be desired both as to quality and staging. Mr. Phatzer, nurseryman, of Roubaix, staged a large collection, singly, in small bottles, some of the flowers, such as Pelican, Baronne de Prailly, Thunberg, &c., being quite up to exhibition form. A Silver-gilt Medal was awarded for this exhibit.

Messrs. H. Cannell & Sons, the only English firm represented, staged a nice collection of zonal Pelargoniums and Chrysanthemums, including a dozen blooms of Etoile de Lyon, which caused quite a *furore*. A Silver-gilt Medal was awarded to them. M. de Reydellet staged a collection of new seedlings, some thirty varieties of poor quality, but for which a Silver Medal was awarded. The premier bloom in the show, Thunberg, was taken from the stand of Mr. J. I. de Beucker. A Silver Medal was awarded. The same gentleman also staged a collection of 300 varieties, for which a Silver-gilt Medal was awarded.

The premier prizes for plants in pots were awarded as under. Amateurs.—A collection of a hundred varieties, distinct, variety and culture being the special feature. The 1st prize, a Gold Medal, was awarded to H. Vanderlinden, Esq.; the 2nd prize, a Silver-gilt Medal, to J. Everaerts, Esq., both of Antwerp. For nurserymen, the 1st prize, a Gold Medal, fell to Mr. J. I. de Beucker, who was 1st, with a grand collection of well-finished plants; the 2nd prize a Silver-gilt Medal, was awarded to Mr. F. Vermeulen; Mr. A. Lunden being 3rd. Prizes were also awarded for paintings of Chrysanthemums on canvas and glass, there being a good competition.

The arrangements of the show were carried out in the most satisfactory manner. The judging was done on the Saturday; several gentlemen were engaged in each class, division of opinion being settled by ballot. After the judging, the jury and other gentlemen connected with the Society sat down to dinner, the President of the Society, Baron Ed. Osy de Zegwart, in the chair.

Home Correspondence.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

Direct Influence of Pollen on the Orange.—Having read with great interest Mr. Phelps' valuable article on the direct influence of pollen on the Orange in a recent number of the *Gardeners' Chronicle*, I should like to ask him for a little further information on this subject, which would make the matter clearer to one unlearned in Oranges. I should be very glad if he would state what are the distinctive characters of the cellular pulp, flavour and shape of Navel Oranges, which distinguish them from the two kinds of Blood Orange which he mentions as having been affected directly by the pollen of the Navel variety; one might then judge better from his description of the fruits how far the Navel character appeared in the fruits borne by the Blood Orange trees. Also one would like to know the characters of the Majorca and Ribbed du Roi Orange which he mentions, and to what classes of Orange they belong. Further, am I right in judging from Mr. Phelps' remarks on the sterility of the Blood Oranges bearing the Navel marks, that he considers this sterility due in some way to the direct influence of pollen having occurred? From what he says further on in his article on the character of the seeds of the Navel Bahia Orange when influenced by the pollen of the St. Michael's variety, one would infer that seedlessness does not always occur in fruits which show the direct influence of pollen. It would be very interesting to know how far it is usual to find sterility accompanying the direct influence of pollen on the fruit. In the account given by Maximowicz and others of this phenomenon, I do not remember any mention of sterility appearing in the fruits described by them. Is it possible that those fruits which, through cultivation or other causes, have become more or less sterile, such as Gourds, Cucumbers, &c., may be those which are most easily influenced directly by pollen; for, according to Mr. Phelps, the Imperial Blood or Maltese Blood usually only produce one or two seeds. It would also be very valuable to know whether Mr. Phelps or other observers have ever noticed any after-effect on the mother after the direct influence of pollen on the fruit has occurred; *i.e.* whether a tree which has once had its fruits directly influenced by pollen has ever been known to produce more anomalous fruits without again receiving the pollen of the variety or species which affected it before. Mr. Burbidge, in his book on *Cultivated Plants*, quotes an instance of a white Calceolaria plant producing red flowers on a branch on which some flowers had been crossed with pollen from a red variety; and these red flowers were not merely those which had been crossed with the foreign pollen. It is possible that Mr. Phelps or others who have studied this interesting subject, might be able to add some more instances to the few already known of this further influence of pollen on the mother plant. *A. B.*

Kniphofias.—Not wishing to accept any honour not due to myself, I hope Mr. Gumbleton will permit me to amend some of his statements relative to these plants. K. nobilis is not a hybrid, and was not raised by myself; it is a variety of K. aloides, ranging with grandis and grandiflora, which also belong to aloides, but nobilis is by far the best. It was introduced from the Cape to a small garden in the South of England, where it was discovered by that famous horticulturist, Mr. R. Parker, of

Tooting, and afterwards sent out by him. K. Saundersi is a very distinct plant, and should, perhaps, range as a species. In all probability it was sent by Mr. Cooper, then exploring some parts of the Cape Colony for the late Mr. Wm. Wilson-Saunders, at Reigate. There was only one specimen, which flowered at Worthing about fifteen years ago, when I had the honour of paying a visit to this venerable scientist. I was so charmed with the beauty of this plant, that he wished me to take it away with me. This I declined to do, but the year afterwards he liberally presented me with half of the plant, and a few years after I sent it out; the plant remaining at Worthing died the following spring, as did also that of Mr. Wilson-Saunders. *Max Leichtlin, Baden-Baden.*

GLOBE ARTICHOKE.—What is this vegetable that we are eating? was the question passed round the table. Reference to the elaborate *menu* showed it was called Chardon, some said it was Celery, others Seakale badly cooked by the foreigner. All were wrong; for having asked in the Brussels market what would be done with some shoots of Cynara Scolymus (Globe Artichoke), 3 feet long, I was told it was called Chardon, and used as a vegetable. We found it very agreeable and full of flavour, and in some places it is said to have a very favourable effect in dropsy. My friend at my left said it is a common vegetable in Italy, and he found it well cooked on this occasion in London. Several of the gentlemen who have gardens, said that they should experiment and try to utilise this plant with the view of obtaining a similar agreeable result. *Thos. Christy.* [The plant was probably Cynara Cardunculus, the Cardoon. Ed.]

GARDEN WALKS AND CARRIAGE DRIVES.—Various letters have appeared as to having grass walks in kitchen gardens, perhaps you will allow me to say a word or two on the matter of the walks and light roads used in and around the gardens and pleasure grounds. So far as paths are concerned, what is needed is to have a surface which is always smooth and dry, upheld by a substratum of hard material which will bear any weight likely to be placed on it, and which is sufficiently porous to keep dry, or when frost comes, it expands the water in the material composing the path, and reduces the whole into a state of mud so soon as the surface thaws. The same applies to carriage drives, save that the surface material must be hard enough to stand the heavier wear of both hoofs and wheels, and a thicker substratum of hard material must be used, as the width of the road, and the greater weights to be borne renders this necessary. Now as to materials. For the substratum of paths and roads, brick rubbish makes the best, for while binding together into a hard mass, it is yet sufficiently porous to allow of free drainage, and besides it will bear a heavy weight without breaking up. Failing this, clinkers and chalk, clean stone and chalk, or similar material will answer well if properly put down. Under paths, from 4 to 6 inches in thickness is enough; but under roads, from 6 to 9 inches or more, for very heavy traffic, will not be too much. The surface material of both paths and roads will vary with the district, but where obtainable a good binding gravel not too heavily charged with clay will give the best results; as with moderate rolling, weeds will not give much trouble, and even when they do show up, a dressing of Cuprolene once or twice a year will keep them within bounds. In some cases, however, shell gravel, crag, broken sandstone, and other soft gravels will have to be used, and these need more rolling to keep smooth, and more weed destroying than binding gravels. In the kitchen garden, where gravel is scarce, furnace ashes may be used with advantage, and the Dutch hoe will keep the paths clean with but little trouble; but they break in winter after frost. Carriage drives should have a coating of clean hard stone well rolled down, and on top of this a thin layer of fine gravel, but this latter should rarely exceed an inch in thickness, as, where much is used, traffic reduces it to a muddy mess in wet weather. Concrete, tar-paving, asphalte, and other hard materials, make good paths, but they are not good for carriage-drives, on account of the bad foothold they give for horses. Their cost, again, is greatly against them, and precludes their being used to any great extent generally, as cost is always an important item in laying down paths or other works in a garden. In fact, there are few people now-a-days who will allow of even a fair expenditure in carrying out garden work. Coming to grass walks in gardens, they are very well in dry weather, while grass is growing, but to keep them all right, wheeling must be done on planks, and hard paths for the service of the garden must also be provided, or the grass will be trodden out, and cost more for mending than the maintenance of hard paths would cost. In fact, unless in a show garden, grass is quite out of place, as the cost of maintenance is great, compared with hard paths, unless untidiness is the object aimed at. *Walter J. May, Walton-on-Thames.*

CLIMBING COMPOSITES.—A singular *lapsus* occurs in one of your contemporaries, wherein Kerria japonica is considered to be a composite and a climber; it being, as a matter of fact, neither one nor the other. Climbing composites are doubtless scarce, the best known being the Mutisia. *Jungia.*

TURF WALKS.—Just a few lines, to stop the flow of writing on the above subject, which would appear likely to fill your home correspondence columns to the exclusion of other matter. The hubbub arose about the walks at Hackwood Park, Basingstoke, which happened to be mentioned by your correspondent, "A. D." Now for the truth about those walks. Hackwood is situated on the chalk formation, as every one acquainted with that part of Hants knows, and this substance is near the surface, rendering the overlying soil by reason of its numerous fissures, dry and firm; moreover the soil contains flints of all sizes in great quantity, also adding to its readiness for parting with water. All these facts would of themselves account for the employment of turf instead of the difficult-to-be-obtained gravel. And it is very probable that the walks are made up with chalk made firm and coated with the thinnest coat of soil in which the grasses may take root. Such a walk is almost as hard as one made with gravel, and may be wheeled on to almost any extent if the men run their wheelbarrows all over the surface instead of keeping to one rut. Besides, as every gardener knows, damaged turf is in country places just as easily mended after hard wear as gravel. All that is wanted are at the most some few new sods, or the surface to be raised with a fork, a little soil strewn over it, and a pinch of grass seeds sown, and all is again in order. As to the dew and rain, are our young men getting so delicate that they cannot

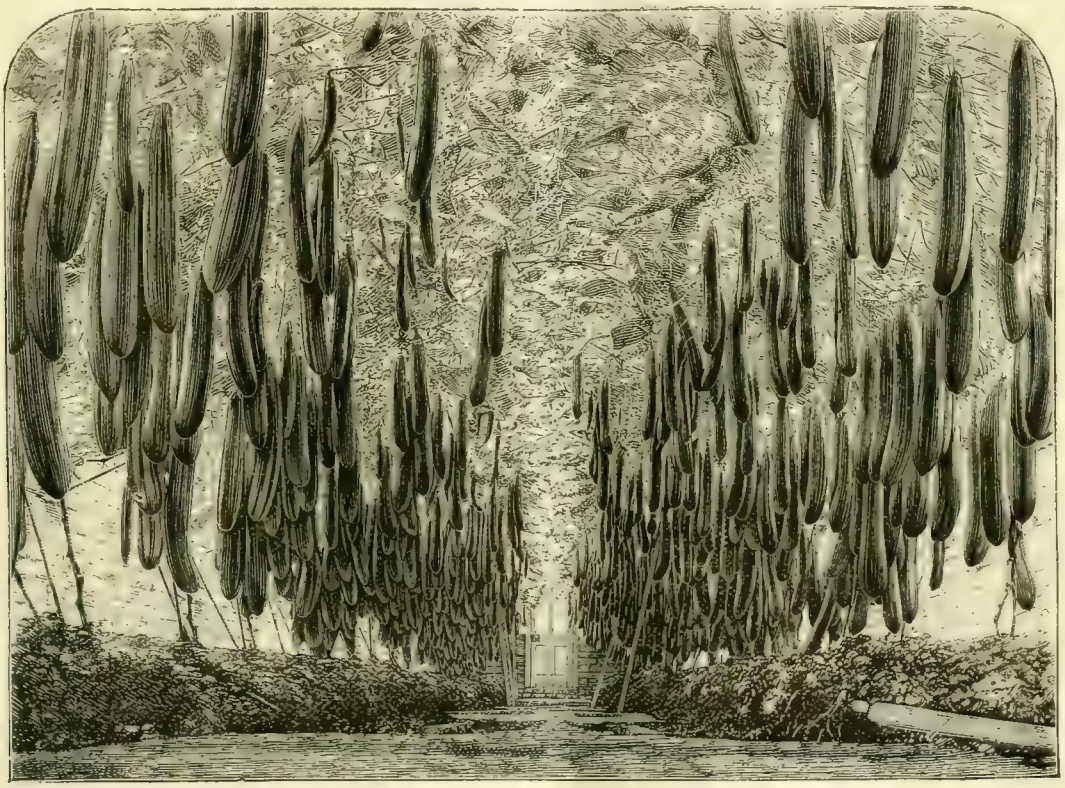


Fig. 84.—Lockie's perfection cucumber. (see p. 600.)

walk on grass when wet with either of these? We think the objectors to turven walks are poor advocates, and the objections they have raised on those grounds do not "hold water." As for the ladies, they rarely come out in the early morning, when the dew lays on the grass, and in wet weather—well, if they will not wear thick-soled shoes, the kitchen garden is no place for them. *An Old Gardener.*

—— I do not think turf walks will ever come into general use for kitchen gardens, but still there are of course some exceptional cases where they can be adopted to some extent. Concrete is costly, and in some places gravel is difficult to get, and always troublesome to keep in order. I wonder if any of your readers have ever tried the following very simple and inexpensive path—cinder ash and gas-lime mixed? If not, I would strongly urge them to make an experiment. It is always pleasant to walk on, quite as dry as concrete, and very durable. The Great Eastern Railway are using it for some of their platforms, and it can be seen at the station here. *Walter Kemsley, Woodford, Essex.*

THE SEASON.—The extraordinary mildness of the weather up to the present time has caused a far greater number of plants to be in bloom than I have ever before recorded. It, therefore, seems desirable to place a list on record for comparison with other localities and for future reference. The summer temperature between the 6th and 9th inst. was exceptional, the maximum ranging between 57°.5 and 60° in the shade. As yet no frost has occurred sufficiently severe to injure Dahlias, Kidney Beans, or Vegetable Marrows. Within a radius of half a mile in the gardens, park, and woods, I gathered on the 12th inst., 292 different plants in flower, seventy-seven of which are native plants, and ninety-six of these 292 were well in bloom. Mignonette and Papaver bracteatum are in splendid condition in Mrs. Currie's garden; Senecio pulcher, Schizostylis coccinea, Rosa viridiflora, Salvia involucrata, Dahlia Juarezii, Geranium Endressei, Hydrangea hortensis, Nicotiana affinis, Phytolacca decandra, Achillæa ægyptica, Aster diffusus, pendulus, Convolvulus sepium, Chrysogonum virginianum, Fuchsias and Chrysanthemums are a blaze of bloom. There are still many Blackberries, and an enormous crop of Medlars. Nuts have been a complete failure, and Apples also, except on the Paradise stock, and even this fruit is not eatable, as a small caterpillar has travelled all over the pulp, so that when an Apple is cut open, it has the same appearance as the Potato when attacked by the Potato-disease. Insects and slugs have been fearfully destructive, chiefly owing to a scarcity of birds, especially sparrows, swallows, and flycatchers. There are scarcely any thrushes, and the black-cap, whitethroat, fire-crab, chiff-chaff, and many other birds have not been seen this year. There is also a scarcity of frogs and toads, whilst wasps have never been known to be so numerous. In the *British Association Transactions* (Bath, 1888), there is a report on the birds, insects, &c., from this place, which may be compared with the present report. Last winter, although for a time severe, was not destructive to vegetable life. Salvia involucrata, Clerodendron fœtidum, Abutilon vitifolium, and many other delicate plants were uninjured, and bloomed grandly this summer. *E. J. Lowe, Shirenewton, Chepstow.* [With this came a list, subsequently added to, of more than 300 of the species and varieties, too numerous in fact to be recorded in our limited space. Ed.]

—— The consequent mildness of the present season, due to absence of frost, is being markedly shown in the numerous wild flowers that are still to be found by those who know their haunts. Upon some of our commons the Furze-bushes are producing flowers in abundance, and the pretty little Harebell may be seen with its blue petals in striking contrast to the golden yellow of the Furze. The wild Geranium, or Herb-Robert, the various species of Speedwell, May-weed, Ox-eye Daisies, Primroses, the field Scabious Yarrow, Knapweed, and the autumnal Handbit may be seen adorning our hedgerows and hedges in comparative plenty. Even the rich hues of the Marsh Marigold may occasionally be seen in our water meadows. The herbaceous borders of our gardens are still quite aglow with their varied tinted flowers, and the sweet scent of the double Violets and Mignonette may be detected from the far distance. More than one plate of ripe Raspberries has been gathered in this usually cold district within the past few days. The song of the lark, the blackbird, and the thrush may be heard from early morning until the shades of evening fall, and our migratory feathered friends still linger around us, as if loath to depart for other shores while we can offer them such warm hospitality. *J. J. Willis, Harpenden, Herts.*

DAHLIA ROOTS IN WINTER.—Some persons put a small mound of soil or ashes over the roots where they lie buried in the earth. This may do if the winter be a mild one, but it is more effectual if a large flower-pot with a bit of tile over the hole be turned over the heap. This keeps all dry and proof against frost; small boxes would answer equally. A friend of mine digs up his roots in November, and after letting them get dry in a cellar, that is, in about a fortnight or three weeks, he puts them thickly together into shallow boxes, and covers them with finely-sifted coal-ashes, still keeping them in the cellar, which is a dry one. In the spring they are quite plump. *The Dahlia Grower in Town.*

LAPAGERIA ROSEA.—On visiting Low Hill, Mr. H. Lovett's residence at Bushbury, in September last, I observed a very fine specimen of the above plant in a pot in the conservatory, and which bore upwards of 500 expanded blossoms. The plant measured 5 feet in height, by 3 feet 4 inches in width—a well-grown, splendid example of pot culture. *W. T., Wolverhampton.* [The accompanying photograph showed a beautiful specimen. Ed.]

THE ROYAL HORTICULTURAL SOCIETY AND ITS MEETINGS.—I am glad to notice in your issue of the 9th inst. (p. 538), that "A. D." is also of opinion that one o'clock would be a more suitable hour for the committees to meet; and I agree—as probably do the majority of the frequenters of the Drill Hall meetings—that during the two years which have elapsed since they were first held there, the public have not, and do not seem likely to patronise them. The real inducement which brings the trade-growers there, is the publicity accorded their exhibits by the horticultural press—in fact, the gratuitous advertisement; indeed, at a meeting held last year, for the purpose of considering the advisability of renting the Drill Hall for the current year, a member of the Council, and head of an eminent horticultural firm, declared that, pecuniarily, he found exhibiting at the Drill Hall to pay, and he would therefore urge the continuance of the exhibitions at that place. Now, as the public who visit the hall are few in number (scarcely ever enough to pay the door-keeper), and not even what might be called a sprinkling of the City Fellows of the Society attend these meetings, it is evident that the success of the exhibitors is due to the press reports. Of course, I do not mean to say that such a system of advertising is not perfectly legitimate, but I altogether fail to see why the Royal Horticultural Society should subsidize enterprising exhibitors by providing them, free of cost, with a place in which to display their wares, and award medals to them in almost wholesale profusion. It is done, they say, in order to compensate them for the expense and trouble to which they have been put, for what, after all, is simply an undertaking for their own especial benefit. Surely some better means could be devised for the use of the Society's funds which would better advance the science and practice of horticulture. Doubtless medals might be appropriately awarded to meritorious exhibits of plants or groups of plants, but at present mere quantity is the chief factor in obtaining a medal—indeed, we have seen medals awarded to groups which would have cut a very sorry figure in Covent Garden Market. Of course, I do not lose sight of the contention that the hall must be furnished, and that those contentionists consider it necessary to in some way recompense those who do it. Just so; but is the game worth the candle—at least, as far as the Society is concerned? For myself, I think it is not, for, despite the efforts that have been made in the two years the meetings have been held at Westminster, it is beyond dispute that the Hall has not once had a completely furnished appearance—and, by the way, it would take some big things to give the Drill Hall, horticulturally, a furnished appearance. Different, indeed, was the appearance of the meeting-place at South Kensington, where the noble conservatory contained the backbone of an exhibition, in the shape of the permanent plants. However, return thence is, I believe, impossible, and as the shows (that is, using the term in the showman's sense) at Westminster have, so far, proved to be failures, would it not be better to give them up, and confine its bi-monthly meetings exclusively to the exhibition of new and rare plants, for which purpose the offices in Victoria Street would be sufficiently large. This would effect, without detriment to the interests of horticulture, a considerable saving in the expenditure, which might, if thought necessary, be applied to promoting the success of one or more grand metropolitan or provincial exhibitions, such as would be worthy of the old reputation of the Royal Horticultural Society. *F. R.*

LILIUM NILGIRENSE.—I can recommend this as a conservatory plant, having observed one here for about a month. It is in a pot near a door usually open: is 5 feet 4 inches high from bottom of pot; has three flowers. The first bud opened October 10. The plant has been brought into the house several days to be painted, but notwithstanding this the flowers are still (November 12), in beauty. I doubt if this Lily, or L. Wallichianum, are doing satisfactorily, as out-of-door Lilies, in this country. They bloom so late that buds are usually spoilt by frost, and I think that we must be content with L. polyphyllum and L. giganteum, out of the Indian Lilies for this purpose. *George F. Wilson.*

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.—Nov. 5.—Present: Mr. Michael, in the chair; Mr. Burbidge, Mr. Veitch, Mr. Pascoe, Mr. O'Brien, Dr. Müller, Dr. Oliver, Dr. Masters, and Rev. G. Henslow, Hon. Sec.

Monstrous Chrysanthemums.—Mr. Burbidge exhibited two flowers, in one of which the corollas had become partly virescent and distorted; in the other they were surrounded by a numerous progeny of buds, producing the "hen and chicken" form. The question was raised as to the possibility of fixing such peculiar monstrosities by breeding. It was observed by Mr. Veitch that a tendency to doubling is secured and intensified by self-fertilisation, as occurred in the Balsamiflorum section of his East Indian Rhododendrons. Mr. O'Brien remarked that the first double Begonias were secured in precisely the same way. Observations were made on the possibility of the effects of mechanical injury to plants being hereditary. It was the belief of Mr. O'Brien that Ferns may become tasselled, and transmit that feature solely from repeated injury to the fronds, judging from a case within his experience. Mr. Burbidge also corroborated the belief that irritations which are prolonged tend to produce effects which may be transmitted to the offspring. The cause of the monstrous condition of the specimens exhibited was thought to be over-nutrition, judging from the gross nature of the foliage, &c.

Origin of Chrysanthemum.—A communication was read from Mr. Hemsley, in which he recorded the fact that the earliest specific name given by Ramatuelle to the Chrysanthemum was not sinense, but morifolium, C. indicum being supposed to be a distinct species. Mr. Burbidge, however, observed that of seedlings from any Chrysanthemum, forms apparently identical with C. indicum, which is a native of China, always arise, leading to the supposition that this latter species is the real origin of both kinds in cultivation. All wild specimens are yellow and single, the other colours having arisen by cultivation.

Orchids Exhibited.—Mr. O'Brien showed the following plants, which were received from Mr. Tautz, of Hammersmith:—Cychnoches barbatum; this first flowered in 1849 with Mrs. Lawrence, of Ealing Park; It was (if dimorphic as other species) presumably the male form. A Botanical Certificate was unanimously awarded. Stelis micrantha, a minute flowering plant; Trichosma suaveolens, trilabellia, this being one of several Orchids now cultivated, with a tendency to Peloria, in that the two other petals are more or less coloured like the labellum.

Rhododendron Indico-javanicum, bigener. — Mr. Henslow described the foliage of this cross, exhibited by Mr. Veitch at the last meeting. Though smaller in size, the leaf agreed both in form and anatomical details with that of the Rhododendron, or female parent, in every detail of importance. That of Azalea was markedly different, being obovate instead of lanceolate; toothed and not entire; covered with fibrous hairs instead of being glabrous above, with minute peltate scales below; the cell-walls of the epidermis being sinuate instead of straight; and the

proportion of stomata being less than in the Rhododendron as well as the cross. The hairs of Azalea are very peculiar in structure. They grow on the branches, petioles, midrib, and veins below, and generally scattered over the upper surface of the leaf. They are composed of numerous fibres resembling short liber-fibres, graduated in length so that the longest form the point of the hair. Mr. Henslow observed that he could not discover any previous description of such a structure, which appears to have been hitherto overlooked. He also examined the foliage of the dwarf plant, sister to the above cross. The anatomical details exhibited a very considerable amount of arrest of structure, the number of cells being nearly twice that of the Rhododendron in consequence of their minute size, with fewer stomata. It also agreed in most other respects both with the sister-cross, as well as with the Rhododendron, except that the shape was more elliptical, and possessed glandular hairs instead of peltate scales It was observable that this cross followed the supposed rule that the female parent imparted its likeness to the foliage, while the male parent supplied that of the flowers. Mr. Henslow observed that in the 150 hybrids and crosses raised by Mr. Veitch, amongst seven East Indian species of Rhododendron, the rule was found to fail entirely, in that each parent would impart certain peculiarities either to the flowers or leaves, according to its own prepotency, but the cause of such a power was at present unknown.

Reversion in Potatos.—At a meeting of the Scientific Committee on November 13, 1888, Mr. W. G. Smith exhibited a Potato which was the result of a reversion. Mr. Fenn had crossed two long sorts of Kidney Potatos—viz., Early Coldstream and the Early Ashleaf. The result was a globular form which he called W. G. Smith. After eighteen years, during which this had come true, one plant suddenly reverted to the original type. The specimen exhibited was 5½ inches long, the round one being about 2½ inches in diameter. Mr. Henslow planted these tubers in March, 1889, and the round Potato yielded only 1 lb. 8 oz. of small tubers; the long one planted by the side of it, gave 6 lb. of large-sized tubers. Not only were the tubers true to their kinds, but the foliage was very distinct.

Clematis vitalba.—Mr. Henslow exhibited a photograph of, and described a plant of the Traveller's Joy, or Old Man's Beard, which grows in his garden near Drayton Green, Ealing. It is evidently of great age, as the stem at the base is about 9 inches in circumference. From this proceed several thick branches; half of the plant then spreads over a thick Holly hedge about 5 to 8 feet in height. The Clematis extends to about 30 feet each way, completely covering it with foliage and dense masses of blossom. One branch crosses an arched trellis, and climbs to the roof of the house, whence, intermingling with Virginian Creeper, it hangs in long festoons to the ground. The superficial area covered by the part on the hedge alone is about 150 square yards. The remarkable feature in the case is the enormous and vigorous growth the Clematis has made, and yet it is in ground with only a foot or two of earth over fine red gravel, constituting the uppermost and most ancient of the gravel beds of the Thames, there being, as far as is known, not a trace of calcareous matter in the soil. Nevertheless, the plant is usually described as a chalk-loving species. At all events, it is found abundantly on the chalk of Kent, the oolitic limestones near Cheltenham, and the carboniferous limestone near Bristol, &c. Mr. Burbidge suggested that it was just possible, growing so close to the house, that there might have been buried there a quantity of old mortar, &c. The ground, however, was lately excavated for a drain within 4 and 10 feet, when nothing but red gravel was exposed.

BRIGHTON AND HOVE CHRYSANTHEMUM.

The seventh annual exhibition was held on November 5 and 6, and proved in all respects superior to any previously held in regard to the number of exhibits and quality of the cut blooms. The exhibition was held under the Dome, and the adjoining Corn Exchange. A new and better arrangement was made this year, whereby the cut blooms were displayed on tables in the more spacious Corn Exchange, instead of under the Dome, as in previous years. The Dome itself lacked nothing because of this, for it was well filled with specimen plants of various kinds, standards, pyramids, and dwarfs. Bouquets and epergnes for the table found a place here, and also a few of the less important stands of cut blooms. Messrs. Balchin & Son, of Hassock's Gate, did their part well in decorating the orchestra; they were free to use any class of plants they liked, and the judicious arrangement of Palms and other foliage plants amongst the Chrysanthemums was in excellent taste.

The Corn Exchange was quite filled with an excellent assortment of everything that would tend to make a flower show attractive in November.

The groups of Chrysanthemums were the best we have seen anywhere, for quality in the plants and effective grouping. There were seven entries, and the groups occupied each a space of 100 square feet. Mr. G. House, gr. to F. Mowall, Esq., Withdean Hall, Patcham, was 1st, with plants of superior quality, and blooms of excellent finish. Mr. J. Spottiswood, gr. to Mrs. Duddell, Queen's Park, Brighton, was a good 2nd, the arrangements of his plants being excellent. Mr. J. Miles, Church Road, Hove, was a good 3rd in this class, his group being very well finished.

Prizes were offered for smaller groups, which were very meritorious. Mr. A. Fry, gr. to C. W. Catt, Esq., 52, Middle Street, Brighton, won the 1st prize with a well-arranged group, extending to 60 square feet. No fewer than twenty groups were arranged round the sides of the building.

The classes for cut blooms were much better filled than usual—the leading class was for forty-eight blooms of incurved and Japanese, and no less than ten competitors contended for the handsome money prizes and a challenge cup. Mr. W. Neville, gr. to F. W. Flight, Esq., Cornstiles, Winchester, easily won the 1st prize, the quality throughout being excellent. Messrs. Drover & Sons, Fareham, were a good 2nd, most of the blooms being of as good average quality as those of the winning stand, a slight failing only being observed in the front row flowers. For twenty-four incurved blooms there was no competition, and Mr. Russell, gr. to Dr. Lewis, Henfield, Sussex, was awarded the 1st prize. For twelve incurved blooms, there were some excellent stands, Mr. A. Emery, gr. to R. W. Tweedie, Esq., Avoca, Eastbourne, was awarded the 1st prize.

As usual, the strongest competition took place in the Japanese classes. The blooms throughout being fresh and of perfect development. The best collection of twenty-four was sent by Mr. T. Glen, gr. to Mrs. Montefiore, Worth Park, Crawley. The handsome white Japanese variety, Avalanche, won the 1st prize for Mr. Emery in the class for six blooms of one variety; Mr. Glen being 2nd with the same variety. It would take too much space to go into details of the minor classes of cut blooms; Mr. S. Coleman had the best reflexed, Mr. R. Phillips the best large flowered Anemones, and Mr. M. Russell the best Pompons. There were some very good specimen plants scattered about the exhibition, in positions where they would best add to the general effect. M. J. Hill, of Withdean, had excellent dwarf specimens. Mr. A. Scott, gr. to G. S. Jenkins, Esq., Franklands, Burgess Hill, had the best standards; Mr. Hill getting first for pyramidal trained plants. It would be well if other societies would imitate this one in offering prizes for other subjects in flower or in berry at this season. Excellent collections of Solanums in berry were arranged in the centres of the tables with single and double Chinese Primulas, well-grown pots of Mignonette, numerous collections of table plants, Cyclamens, &c.

The fruit was exceedingly good, as well as plentiful. The Gros Colmar Grapes from Mr. Phillips, gr. to Dr. Baker, Meopham, were excellent; as also the Muscat of Alexandria from Mr. Duncan, of Warnham Court, Horsham. Mr. Spottiswood showed excellent Pears. Mr. Stringer, of Cuckfield, was first for Pitmaston Duchess Pears, an excellent dish. Collections of vegetables was a good feature, and added much to the interest of the exhibition.

DEVIZES CHRYSANTHEMUM.

Tuesday, *November* 12.—The show of this Society took place in the Corn Exchange, and was equal to any previous show, and above the average in the cut blooms shown. The principal class, that for twenty-four incurved flowers, in not less than eighteen varieties, brought six competitors for the coveted 10-guinea prize, and which was won by Messrs. W. & G. Drover, Fareham, whose stand contained not a single weak flower, and the following varieties were finer than any of the same we have seen this season:—Empress of India, Lord Alcester, Golden Queen of England, Lord Wolseley, Princess of Wales, Mr. Brunlees, Violet Tomlin, Charles Gibson, and Lord Eversley. The 2nd went to Mr. Inglefield, gr. to Sir John Kelk, Bart., Tedworth, whose best flowers were much the same as in the 1st prize stand. F. W. Flight, Esq, Twyford, Winchester, was a very close 3rd.

There were twelve competitors for twelve distinct Japanese varieties. F. W. Flight, Esq., was awarded the 1st prize, his blooms being wonderfully fresh; the 2nd award went to Mr. Trinder, gr. to Sir Henry St. John Mildmay, Bart., Dogmersfield Park.

The class for twelve reflexed flowers, had but five entries, and the exhibitors showed well; the two highest prize-winners were Lord Justice Lopes, Heywood, Westbury, and E. N. May, Esq. The best flowers were Cullingfordi, Cloth of Gold, Amy Furze, Putney George, White Christine, and Pink Christine.

There were seven competitors for the two prizes offered for large Anemone-flowered, the 1st prize being awarded to Mr. W. Flight, and the 2nd to Mr. May.

The local classes for twelve incurved, twelve Japanese and Pompons, were well contested, and the flowers quite on a par with those in the open classes. These were some superb trained plants, a little too stiff, perhaps, but the flowers were well displayed and numerous; one plant of Mr. George Rundle had ninety-three flowers, all of which almost reached exhibition standard. This plant was the property of Mr. May (gr., Mr. Hale), who took all the 1st prizes in the plant classes. The other prize-winners in these classes were Mr. Clack, gr. to Major Colston, Roundway Park, and W. Brown, Esq., Devizes.

There were classes for bouquets and baskets of autumn foliage, and Primulas, in both of which the competition was spirited, and the plants of good quality. The Primulas shown by Mr. E. N. May, were very fine specimens of good culture. With the Chrysanthemum show is associated a bazaar in aid of the charities of the town, and spacious as the Corn Exchange is, it proved far too small for the purpose. The Chrysanthemum show alone would be just as remunerative as it now is combined with the bazaar.

PEMBROKESHIRE CHRYSANTHEMUM.

This young and flourishing Society held its fourth annual show in the Market Hall, Pembroke, on Tuesday, November 12, and for quantity and quality, far surpassed any previous exhibition, and was probably the best ever held in South Wales. On this occasion the larger collections were all of high quality, and would compare with those of many larger provincial societies. Groups for effect formed a leading feature, and numbered nine, the prize for the best going to Mr. French, gr. to Colonel Saurin, Orielton, for a splendid group of dwarf plants, carrying extra large flowers, and with foliage down to the pot's rim; Mr. Crichton, gr. to Colonel Lambton, Brownslade, was 2nd. For three trained plants of incurved varieties, Mr. Dumble, gr. to Sir Chas. Phillips, Bart., Picton Castle, Haverfordwest, was 1st with medium-sized, freely flowered plants, the same exhibitor was also 1st for three Japanese, having Bouquet Fait, La Nymphe, and Val d'Andorre; Mr. French was a good 2nd. The latter was 1st for a single specimen, a fine plant of Avalanche, the best in the show, and was awarded a Silver Medal.

Cut Blooms.—In the principal classes some excellent flowers were staged, especially in that for thirty-six, where Mr. Dumble secured 1st honours with very good incurved and Japanese blooms. For twenty-four, and for twelve varieties, this exhibitor was also 1st; and Mr. Crichton was 2nd in the latter class. The other classes were well contested; and cottagers and amateurs contributed excellent plants and cut flowers.

Fruit and vegetables were shown in good condition, collectively making a very attractive addition to the show.

SOUTHEND-ON-SEA CHRYSANTHEMUM.

November 13.—The great advance made in the culture of the Chrysanthemum, in certain districts, was illustrated on the occasion of the annual exhibition of this Society, on the above date, when the Public Hall was filled to overflowing with products of a very good character. Groups of plants were a leading feature, while cut blooms were in good form. Mr. G. F. Jones, the President of the Society, took the 1st prize with a group of plants; Mr. F. Wood was 2nd. Mr. Crook, gr. to Mr. J. G. Baxter,

Hutton Park, had some good specimen plants, and, in addition, he filled a table with some very good Orchids indeed, prominent among them being Sophronites grandiflorum and Cypripedium Spicerianum. The only exhibitors of twenty-four cut blooms of incurved Chrysanthemums were Messrs. Saltmarsh & Son, Chelmsford, but, in the event of a competition, they would have prejudiced their chance of winning by staging blooms of Golden Queen of England and Emily Dale—flowers scarcely distinct enough to appear in the same stand. Mr. Wood, Rochford, had the best twelve incurved blooms, very good, too; and in the class for twenty-four, not less than eighteen varieties, Mr. A. Coningsby was 1st. Messrs. Saltmarsh & Son put up twenty-four fine blooms of Japanese varieties, and had the 1st prize in another class for the same number. In eighteen varieties, Mr. A. Coningsby was 1st, and he also had the best twelve blooms. There were good blooms of reflexed, Anemone-flowered, and Pompon varieties. There were classes also for Chinese Primroses, &c., fruit and vegetables.

KINGSTON AND SURBITON.

NOVEMBER 12 and 13.—Held in the Drill Hall, Kingston, as usual, the show enjoyed delightful weather and ample light, but suffered appreciably from the damp mild weather which so severely injured blooms a fortnight since. There was a large competition as usual in the cut flower classes, but either because we have become accustomed to higher standards or because blooms were really less fine, there seemed to be a falling off in the high quality found at this popular show a few years since. Especially was this marked in the case of groups and trained plants. Only two groups of Chrysanthemums were staged, a sad falling off, owing, we were assured, to the mischief done to the best blooms by damp, whilst it does appear certain that trained plants are going out of fashion. Mr. H. W. Pitcher, gr. to Mrs. Durmage, Surbiton, had the best group of Chrysanthemums, a very effective bank of medium-sized flowers; whilst Mr. T. Hunt, gr. to Cecil Doyle, Esq., Wimbledon, was 2nd. Some very fine blooms of Thunberg formed the centre figure of this group. Mr. J. Fallows, gr. to Miss Vaughan, Twickenham, was the only exhibitor of six trained plants of incurved varieties, including Mrs. G. Rundle, Mrs. Dixon, and Mr. G. Glenny; Mr. W. Street, gr. to J. W. Ponsford, Esq., Esher, had the three best trained Japanese plants, in Mdlle. Lacroix, Mdlle. Paule Dutour, and Mr. Robinson. The same exhibitor was first with three capital standards in Elaine, Mr. G. Glenny, and Mrs. Dixon. Mr. Mead was the only exhibitor of 6 Pompon plants; they were good and finely bloomed.

Cut Flowers.—The vase competition for twenty-four Japanese and twenty-four incurved flowers, always a popular one, brought eight exhibitors. Mr. W. Furze, of Teddington, through his gardener, Mr. Coombes, was 1st here, thus winning the Vase right out, having secured it twice in succession. The flowers in the winning boxes were excellent in incurveds, but moderate in Japanese varieties; and Mr. W. Mease, gr. to A. Tate, Esq., Leatherhead, was 2nd, having fine Japanese. Etoile de Lyon, Avalanche, Mr. Cannell, Sunflower, Jean de Cant, Ralph Brocklebank, and Stanstead White were good Japanese blooms, and of incurved ones in Mr. Furze's stand specially taking were Violet Tomlin, Miss Haggas, Prince Alfred, Lord Alcester, Barbara, and Mr. Bunn.

In the class for twenty-four incurved flowers, Mr. Coombes was again 1st—repetitions of what were in the previous class, medium and good; and Mr. Woodgate, gr. to Lady Wolverton, Warren House, was 2nd.

With twelve blooms, Mr. R. Cawte, gr. to L. P. Robinson, Esq., was 1st; Mr. Beckett coming 2nd.

With six blooms, Mr. H. Agate, gr. to the Duchess of Wellington, Walton, was 1st with some good blooms. In the class for six incurved flowers of one variety, Violet Tomlin, really superb blooms, finely coloured, shown by Mr. Coombes, was 1st; Golden Queen of England, from Mr. J. Carpenter, coming 2nd; Empress of India, 3rd; Mr. Norman Davis, rich yellow, was also good in this class. Reflexed flowers were largely shown, the best twelve coming from Mr. Carpenter, who had good Cullingfordi; Putney George, deep red chestnut, tipped with gold; pink and golden Christine, Phideas, Amy Furze, &c.; and Mr. Mease was 2nd.

Turning to Japanese, which as usual made a showy display, the best twenty-four came from Mr. C. Holden, who had capital blooms fresh but not large. Mr. Mease, who was 2nd, had fine blooms, which were getting a little past.

With twelve Japanese, Mr. C. Beckett was 1st; and Mr. Hockings coming 2nd. Pelican, George Daniels, Jeanne Delaux, and Val d'Andorre were capital in this class.

Mr. Quarterman had the best six Japanese, with six flowers of Jeanne Delaux; Mr. Beckett with Stanstead White was 2nd, and Mr. Mease with Boule d'Or was 3rd. Mr. Woodgate had the best twelve Japanese Anemones, his Fabair de Mediana being exceptionally fine; whilst the best twelve ordinary Anemones came from Mr. Coombes—all good flowers. Pompons were well shown, both of the common and Anemone forms. Certificates of Merit were awarded to truly grand and beautifully-coloured flowers of Japanese Etoile de Lyon, and incurved Miss Haggas, shown by Mr. Molyneux; and to Lady Dorothy, a reddish-fawn sport from Hero of Stoke Newington, from Mr. J. Briss. Superb Marguerites, white-flowered, and Chrysanthemums, came from Messrs. Perkins & Sons, of Coventry, they being placed 1st; whilst Miss E. Clark, of Whitton, and Mrs. Gardiner, Twickenham, had the best table stands.

Table plants were as usual good, the best nine coming from Mr. Sullivan, gr. to D. B. Chapman, Esq., Roehampton. Mr. Street had the best six Chinese Primulas, in double white, the same variety taking 2nd place. With Solanums, neatly berried, Mr. Cusbon, gr. to T. Bancroft, Esq., Norbiton Park, was 1st.

TUNBRIDGE WELLS CHRYSANTHEMUM.

NOVEMBER 13 AND 14.—This flourishing Society held its annual exhibition on the above date in the Sussex Assembly Rooms and Corn Exchange, which were filled with a fine lot of plants, &c. In the respective classes note must be made of the fine group of eight trained plants exhibited by Mr. J. Smooker, gr. to Mrs. Hall, Brathay House; the plants were admirably finished, and well-flowered. R. Bailley, gr. to W. H. Tindall, Esq., Hallysham, was a good 2nd.

In the class for a group shown in a space 12 feet by 6 feet, and not less than eighteen plants, H. Scammell, gr. to C. Reily, Esq., The Priory, Nevill Park, was 1st, with a remarkably fine group, naturally grown, with very fine flowers, and well arranged. Equal 2nds, L. Dupond, gr. to J. Alchin, Esq.; and H. Hemsley, gr. to S. R. Brewerton, Esq.

In the open classes for cut blooms the principal prize-takers were W. Avis, gr. to the Hon. P. Petrie, Faircrouch, Wadhurst; L. Dupond, E. Luff, H. Scammell, G. H. Hichmott, &c.

Poinsettias were a fine class, well flowered; 1st, J. Smooker.

Berried plants were a good competition.

In the class for single-handed gardeners, some good groups were shown, especially that shown by G. Tickner, gr. to H. Hewetson, Esq., 3, Broadwater Down, Tunbridge Wells.

Fruit and vegetables were well represented. In Muscats, J. Legg, gr. to Rev. E. H. Boardman, was a good 1st; and in black Grapes, H. Scammell was a good 1st with Black Alicante. Collections of twelve dishes were good, the 1st going to Mr. W. Johnstone, gr. to Captain P. Green, Bayham Abbey.

Vegetables were well represented. The attendance was good, and the additional attraction of a concert in the evening made it a very successful gathering.

CROYDON CHRYSANTHEMUM.

NOVEMBER 13 AND 14.—The annual show of this Society was held in the Skating Rink Hall, and proved a success in every respect. The blooms were mostly of high quality, plants were fairly well represented, and the fruit and vegetables were excellent.

Sir Thomas Edridge, in an interesting opening address, especially complimented the cottagers on their productions, and also the Committee and Secretary for the able manner in which they had performed their duties.

Cut Blooms.—The leading open class for these was one for twenty-four incurved distinct varieties; Mr. E. Whittle, gr. to C. H. Goshen, Esq., The Ballards, Addiscombe, was 1st, with a grand lot; Mr. H. Alderman, gr. to G. Hatfield, Esq., Morden Hall, was 2nd. In the corresponding class for Japanese, Mr. H. Shoesmith, gr. to Mr. Hodgson, Esq., Shirley Cottage, had the best lot, which was greatly admired. He was closely followed by Mr. Whittle and Mr. Alderman.

In the local classes for twenty-four incurved varieties, Mr. Shoesmith again led the way; and for twenty-four Japanese he was also 1st, followed by Mr. Whittle.

For twelve incurved, Mr. C. Ritchings, gr. to W. Lindsay, Esq., Beddington, was 1st, with blooms of great excellence; and he was also the most successful in the class for twelve Japanese, and for twelve blooms with foliage.

The smaller classes were well filled, Emily Dale, Empress of India, Jeanne d'Arc, Golden Empress, Avalanche, Boule d'Or, and Ed. Molyneux were well shown in these.

Mr. G. H. Cooper, florist, Croydon, was awarded the premier prize for six trained plants, which were well grown, and loaded with bloom.

For a group of fifty Chrysanthemums staged for effect, Mr. Lane, gr. to E. H. Coles, Esq., Caterham, and Mr. W. Curd, florist, secured the awards in the order named.

Several exhibits not sent for competition call for special mention. Messrs. J. Cheal & Sons, Crawley, staged sixty dishes of Apples and Pears; A. H. Smee, Esq., The Grange, Wallington, had a similar lot; and Messrs. Peed & Sons, Streatham, contributed about forty-five dishes of these fruits. Messrs. J. Laing & Sons, Forest Hill, had an effective group of miscellaneous plants; Mr. T. Butcher, Croydon, decorated the stage with foliage plants and Chrysanthemums; and Mr. C. Gibson, Morden Park, put up fine stands of cut blooms, in his usual style.

ROYAL HORTICULTURAL SOCIETY OF IRELAND.

NOVEMBER 14.—The November show of Chrysanthemums and fruits was held in the Royal University Buildings, Dublin. There was a very large attendance—probably not fewer than 2000 persons passed the turnstiles. The display of fruit was excellent, and the appearance of the old Sculpture Hall, in which the tables were laid, was extremely attractive. Six groups were staged in competition for the prize, which Mrs. Gibson Black still offers, the honours being in this case awarded to Mr. P. J. Stewart, of Swords, whose name has not hitherto had the same prominence. Mr. Richard Pim, who was awarded 1st place last year, again showed well, and won the 2nd place. Mrs. Tedcastle, of Rathfarnham, and Mr. M'Cann received minor honours.

The display of Chrysanthemums was, as a whole, regarded as eminently satisfactory. For a collection of cut blooms, Mr. Lloyd Vaughan, of Golden Grove, Roscrea, took the chief prize. In this competition, the County Meath was well represented by collections from the Marchioness of Headfort, Mr. Pollok, and Mr. Naper. A fine collection was sent up from the County Waterford by Mr. De la Poer. There was a grand bunch of Gros Guillaume Grapes, weighing no less than 15 lb., sent by Lady Emily Bury. This was not for competition. Mr. J. F. Lombard, J.P., was awarded 1st for Apples and Pears, showing clean specimens.

WALTON, WEYBRIDGE, AND OATLANDS.

A NEW departure has this year been adopted by the energetic committee of the Walton, Weybridge, Oatlands, and Hersham Chrysanthemum Society, the annual exhibition, which took place on Thursday, November 14, being held, for the first time during the fourteen years' existence of the Society, at Hersham. The attention thus paid to this neighbourhood has already yielded good results, and it is satisfactory to learn that the Society's subscription list is of a most gratifying character. Her Grace the Duchess of Wellington—who is ever ready to give her patronage and support to any deserving movement—kindly consented to open the exhibition, and this fact itself largely contributed to the success of Thursday's show. Having performed this duty, the Duchess was thanked by Captain Courtenay Terry; she evinced considerable interest in the show, and, accompanied by Mr. H. Cobbett, President, and Captain Terry, Treasurer, inspected the various exhibits. Her Grace was presented with an admirable bouquet by Miss Adeline Cobbett (daughter of the President). The entry was the largest ever received by the committee, and the exhibits were arranged in the village hall with admirable effect. The dwarf-trained flowering varieties were excep-

tionally good, and the single specimen plants were very fine specimens, the quality of the show throughout being of a very high standard. The committee, who are to be congratulated on the successful issue of their labours, consisted of Messrs. Boxall, Hopkins, Doyle, Millican, Thorn, Morgan, G. Masters (of East Moulsey, as Secretary), Reed, Reeves, and Swan. During the afternoon the show was visited by large numbers of the gentry of the neighbourhood, the hall being crowded in the evening.

READING CHRYSANTHEMUM

November 14.—As is usual, there was a remarkably good display, and this annual exhibition having grown to be one of the most popular in the south of England, one of the two Town Halls was made available for it on this occasion, and space had to be found for the exhibits in the basement, in passages, corridors, and even on the steps leading to the Hall; and Mr. R. Catchpole must have been at his wit's end where to place the exhibits. A good deal of the judging had to be done by gas-light, and under inconvenient conditions. A spacious well-lighted building has become absolutely necessary for this exhibition.

Groups of Chrysanthemums arranged for effect were a very fine feature, and six prizes were awarded. The best came from Mr. Perkins, gr. to the Right Hon. W. H. Smith, M.P., Greenlands, Henley-on-Thames, who had well-grown plants, finely bloomed; Mr. Baskett, gr. to W. J. Palmer, Esq., Reading, was a close 2nd; indeed, all the groups well deserved recognition.

The best six large-flowered varieties came from Mr. Frost, gr. to Walter Palmer, Esq., Reading—undoubtedly the very best we have seen this season—grandly grown and flowered; the varieties were John Salter, Empress of India, Alfred Salter, George Glenny, Mr. G. Rundle, and Lord Wolseley; Mr. Farey, gr. to General Radcliffe, Caversham, was a good 2nd. Some good plants were also shown in threes. Mr. Armitage, gr. to N. Clarke, Esq., Reading, had the best six plants of Japanese; Mr. Farey being 2nd; Japs were also shown in threes. Six dwarf table Chrysanthemums were shown in one class, well grown and well bloomed plants, Mr. Farey had the best; and Mr. Surman, gr. to H. M. Best, Esq., Downington, was a good 2nd. Similar plants of Pompons were also shown, and the class for three standard Chrysanthemums brought a large number of entries.

Prizes were also offered for table plants, for berried plants and Orchids, Mr. G. May, Caversham, being placed 1st, with three pretty specimens. For single and double flowered Primulas, Poinsettias, specimens of Bilbergia of species, Mr. Turton, gr. to J. Hargreaves, Esq., Maiden Erleigh, Reading, was 1st with excellent specimens. Mr. Frost taking the 1st prize with admirably grown and bloomed plants of winter-flowering Carnation, Epiphyllum truncatum, Bouvardias, Palms or Ferns, Richardias, &c.

Cut flowers were hardly up to the usual mark. The early season had affected some of the incurved varieties; but the Japanese varieties were very fine.

In the class for eighteen incurved, Mr. Neville, gr. to F. W. Flight, Esq., Winchester, put up a very good lot indeed; Mr. Lane, gr. to Miss J. D. Smith, Ascot, being 2nd.

In the class for twelve incurved, good blooms being staged, Mr. Popple, gr. to Sir A. Stepney, Sunninghill, was 1st; and Mr. Trinder, Dogsmerfield Park Gardens, 2nd.

The reflexed varieties were very fine indeed; Mr. Boskett was 1st, with an excellent lot of blooms; and Mr. Popple 2nd. Mr. Perkins had the best twelve Anemone-flowered; and Mr. F. W. Flight was 2nd—very good blooms being staged.

The class for twelve cut blooms, any varieties except Pompons, shown with 9 inches of stem and foliage, brought an excellent competition, and it is a class deserving a place in every schedule of prizes. Where staged in this way, much of the formality attending the blooms shown on boards is lost. Six bunches of Pompons were only sparingly shown: Mr. Booker, gr. to W. B. Monck, Esq., Coley Park, was a good 1st.

Japanese Chrysanthemums were numerous, and very fine. Mr. F. W. Flight had the best twelve, showing superbly finished flowers of Etoile de Lyon, Ralph Brocklebank, Avalanche, Golden Dragon, Mr. H. Cannell, Mrs. H. Cannell, and Mrs. J. Wright, being especially conspicuous; Mr. Trinder had a fine lot, which gained the 2nd prize.

Table Decorations of Chrysanthemums were seen in large hall vases, table vases and bouquets of Chrysanthemums; all numerous and good. There were vases of other flowers for table decoration, stands and baskets of autumn leaves and foliage, and bouquets of Everlastings; the two latter especially bringing arrangements of a highly attractive character.

A very fine collection of the newer varieties of Chrysanthemums came from Mr. R. Owen, Floral Nursery, Maidenhead, and several First-class Certificates were awarded. Mr. Frank Lees, The Vineyard, Reading, staged in one of the corridors, a remarkably fine and striking collection of Chrysanthemums in pots, Ericas, Ferns, Palms, &c., cut blooms of Chrysanthemums, fruit, &c. This was very Highly Commended by the judges.

Fruit.—This as usual was well represented, some very fine Grapes being staged. The best two bunches of black Alicante Grapes, very well finished indeed, came from Mr. Pound, gr. to A. Sutton, Esq., Reading; Mr. Iggulden, gr. to Lord Cork, Marston, being 2nd; Mr. Ashman, The Gardens, Billingbear Park, had the best two bunches of Gros Colmar, small, but finely finished; Mr. Iggulden was 2nd. The best two bunches of any other Black was Lady Downes'. from Mr. Iggulden; Mr. Pound, gr. to A. Sutton, Esq., coming 2nd, with large bunches of Gros Guillaume. Mr. Iggulden had two bunches of fine Muscats; the 2nd prize going to Mr. Perkins. The best two bunches were good Mrs. Pearson, from G. May, Esq.; Mr. Perkins coming 2nd, with Foster's Seedling.

The best collection of six dishes of fruit came from Mr. Dockerill, gr. to G. W. Palmer, Esq., who had White Muscat and Alicante Grapes, two varieties of Pears, a dish of Apples, and two Pine-apples. Mr. R. Webb, of Benham, had the best six dishes of dessert Apples, staging a remarkably fine lot. Mr. Perkins was 2nd, with a very fine collection also. The best six dishes of culinary Apples, very fine indeed, came from Mr. Perkins, who had Mère de menage.

HIGHGATE, FINCHLEY, AND HORNSEY.

November 14 and 15.—The fifth annual exhibition was held in the Northfield Hall, Highgate. Among the special prizes, the principal one is the Westlake Challenge Cup, value twenty guineas, offered for the best incurved and Japanese specimen plants; this having been won three years in succession by Mr. James Brooke, gr. to Walter Reynolds, Esq., The Grove, Highgate, will now become his property; and the same exhibitor was successful in taking the 1st prize offered by the President, A. S. Harvey, Esq., for the best group arranged for effect, occupying 60 square feet; and Mr. Brittain, gr. to F. Recketts, Esq., Caen Wood Towers, was a good 2nd. The trained specimens were far in advance of what is generally shown.

Cut flowers were numerous. The prize offered by W. Reynolds, Esq., for thirty-six cut blooms, eighteen incurved and eighteen Japanese, was won by Mr. Calvert, gr. to J. A. Houblon, Esq., Bishop's Stortford; he also put up, not for competition, several collections previously shown at the Aquarium.

Fruit was not shown in abundance, but the exhibits were good; the Grapes, by Mr. Brooke, and Mr. Brittain; Apples, by Mr. Billington and Mr. Humphrys; Pears, by Mr. Brittain.

Table decorations formed an important feature, the prize offered by E. L. Shelton, Esq., for a set of three, composed of Chrysanthemums, Ferns and Grasses, and this was taken by H. Neary, the materials well selected and gracefully arranged.

Several collections, not for competition, were sent; Messrs. B. S. Williams & Son and Messrs. W. Cutbush & Son sent some fine decorative plants. M. Hunt & Son sent a collection of fruit, having some fine specimens of Pines, Grapes, Pears, Apples, Passion Fruit, Prickly Pears, Bananas, Medlars, Crocodile Pears, Mangoes, Custard Apples, Pomegranates, &c.

TEDDINGTON CHRYSANTHEMUM.

The seventh annual exhibition of the Teddington Chrysanthemum Society was held at the Town Hall, Teddington, on Thursday and Friday, November 14 and 15, and, taking the bad season into consideration, was well up to the average of previous years. It was largely patronised.

In the principal class—24 cut blooms of Chrysanthemums, twelve incurved and twelve Japanese—the prize is a Challenge Cup, value £5 5*s.*, and £1 10*s.* for the gr., the conditions being that the winner holds the cup until the next exhibition, when it is returned to the Society, and in the event of the same exhibitor winning the cup twice—not necessarily in consecutive years—it becomes his property absolutely. In 1886 Mr. W. Furze (gr., E. Coombes), of the Roselands, Teddington, became the possessor of the Society's first cup. In the following year Lieut.-General Vialls, C.B., of Teddington House (gr., T. Higginson), was 1st, and he held the cup until Mr. Howard, of the Grove (gr., G. A. Bishop), became entitled to it in 1888. This year, however, Lieut.-General Vialls was again successful, and he now, therefore, holds cup No. 2. His incurved and Japanese varieties comprises some splendid specimens. W. Cave, gr. to Mrs. Holberton, The Cedars, Teddington, was 2nd, and had many praiseworthy blooms.

J. Brittan, gr. to Mr. W. Brigg, Bankside Villa, Teddington, took 1st prize in the class for a group of Chrysanthemums in pots, 9 by 6 feet; Mr. H. T. Atrill, Rose Hill, Hampton, being 2nd. T. Gregory, gr. to Mr. J. F. Weymouth, Bushey Nook, Teddington, was awarded 1st prize for a group of miscellaneous plants, 8 by 4 feet, his being the only entry in the class. E. Coombs, gr. to Mr. W. Furze, gained premier honours for twenty-four incurved blooms of distinct varieties. The same exhibitor was also 1st in the class for twenty-four Japanese varieties. W. Davies, gr. to Mr. T. P. Chappell, of Weir Bank, Teddington, was 2nd in the latter class. T. Higginson was 1st, W. Davies 2nd, in the class for twelve incurved distinct varieties. The former's blooms were really exquisite, as were also those which he exhibited in the class for twelve Japanese, distinct varieties. His Fair Maid of Guernsey was a marvel of beauty.

E. Coombes carried off 1st prize for twelve large flowering Anemones (not less than six varieties); W. Piper, gr. to Mr. F. Braby, Bushey Lodge, Teddington, being 2nd. Mr. Coombes was 1st for reflexed (not less than six varieties); Mr. W. Bates being 2nd.

There were some full entries in several other classes, those of amateurs also being well entered for.

Grapes, Apples, Pears and vegetables secured excellent competition, cottagers being well to the front. Miss Braby was 1st in the class for a stand of cut flowers suitable for table decoration; Miss C. Wragge being 2nd. The latter lady and Mrs. Montgomery, of 3, Cambridge Villas, Teddington, took equal first for a stand of autumnal flowers, leaves and berries, all grown out-of-doors. Among the exhibits not for competition, were several bunches of black Grapes (Black Alicante and Gros Colmar), by Mr. H. Tite, florist and nurseryman, of Hampton.

REIGATE CHRYSANTHEMUM.

The Reigate and District Chrysanthemum Society held an exhibition at the Public Hall on Friday, November 15, under most successful auspices, in aid of the Gardeners' Royal Benevolent Institution and Orphan Fund. A fine display was got together, reflecting great credit upon the neighbourhood; and the show, which was under the patronage of the Marchioness of Anglesey, Lady Henry Somerset, and most of the nobility and gentry of Reigate, was visited by a large and influential company. The exhibition being for a charitable object, no premiums were offered, but next year it is intended to give prizes. The following were the contributors:—

Plants in Pot.—Groups not exceeding 50 and 30 feet super., Mrs. A. J. Waterlow, Great Doods; Mr. T. B. Haywood, Woodhatch; Mr. E. Horne, J.P., South Park; Mr. Geo. Simpson, Wray Park; Mr. Waring Finch, Duncroft; Mr. Geo. Taylor, Margery Hall; Mr. W. L. Barclay, The Briars; and Mr. J. Carr Saunders, Shagbrook. Four specimen plants, Mrs. Grice, The Beeches; and Mr. J. Welch, Blackstones. Two specimen ditto, Mrs. Grice.

Cut Flowers.—Forty-eight blooms, any variety, Mrs. A. J. Waterlow and Mr. Haywood. Twenty-four ditto, Japanese, Mr. E. Bell, Raglan Road, and Mr. Haywood and the Marchioness of Anglesey, the Priory. Twelve ditto, Mr. Simpson and Mr. Horne. Six ditto, Mr. John Hart, Lochinvar; Mr. A. Mordan, Stone House; Mr. F. C. Pawle, J.C., C.C., and Mr. W. D. Freshfield, The Wilderness. Twenty-four incurved varieties, Mr. Haywood. Twelve ditto, Mr. G. Bell. Six ditto, Mr. Hart and Mr. F. C. Pawle. Twelve Anemones, Mr. Haywood. Twelve reflexed, Mr. Haywood and Mr. Hart. Twelve Pompons, Mr.

Haywood. Six varieties of any kind, Mr. Mordan, Mr. Freshfield and Mr. Haywood. Six Primulas, Mr. Horne, Mr. J. Clutton, Mr. E. Bell, Mr. Hart, and Mr. Waring Finch. Six Cyclamens, the Marchioness of Anglesey. Six table plants, Mr. Simpson and Mr. John Watney. Six plants of any kind, the Marchioness of Anglesey and Mr. Simpson.

A group of Bouvardias was also sent by the Marchioness of Anglesey, and a group of Calanthes and Ferns by Mr. Haywood. There were fine collections of Apples and Pears from Great Doods and Messrs. Cheal's Nurseries; Sir Arthur Watson, of Reigate Lodge, being likewise a contributor in this department.

BRADFORD AND DISTRICT CHRYSANTHEMUM.

THE third annual show of the Bradford and District Chrysanthemum Society was held on Friday, the 15th inst., at the Bradford Technical College, and remained open for the following day. The increasing popularity of Chrysanthemum culture is reflected in the progress of the Society, which surpassed all previous shows. The exhibits were double in number those of a year ago, and in quality the advance was no less marked. Over £100 was offered in prizes.

The winner of the 1st prize for forty-eight blooms in thirty-six varieties, twenty-four of which must be Japanese, and twenty-four incurved, was Mr. D. Lindsay, gr. to Sir T. Edwards Moss, Bart., of Otterspool, Liverpool, with a collection of superb flowers, which included no less than seven new varieties. The whole class was excellent, although, of course, stronger in Japanese than in incurved sorts, for the latter, as every Chrysanthemum grower knows, are the more difficult of cultivation. The 1st prize taker was run very close by Mr. P. Blair, gr. to the Duke of Sutherland, who was awarded the 2nd prize. Mr. T. Carling, gr. to Mrs. E. Cope, Liverpool, took the 1st prize for twenty-four varieties, noticeable among which was a very fine specimen of the Etoile de Lyon.

In the remainder of the open classes, four 1st prizes were secured by Mr. Blair, the Duke of Sutherland's gardener. In bouquets and fruits in the open classes, local competitors took a fair share of the awards.

In the classes for Grapes, 1st prizes were taken by Mr. Midgley, gr. to Mr. Henry Mason, Bingley, and Mr. Cull, gr. to Mr. James M. Bottomley, Buttershaw, who showed splendid bunches. In the local classes the varieties were similar to those in the open classes, and, although not so fine, they were highly creditable to local floriculture. Mr. Midgley, and Mr. Lamb, gr. to Sir H. Mitchell, were among the most successful exhibitors, and the latter was awarded a Cup valued at 5 guineas, presented by Alderman Moulson, President of the Society, for the best group of Chrysanthemums interspersed with other plants. For this honour he was run very closely by Mr. Keighley, gr. to Mr. V. Edelstein, Manningham, who carried off the 2nd prize. The show of miscellaneous plants included Roman Hyacinths, exhibited by Mr. J. Collier, gr. to Mr. George Firth, of Manningham.

HITCHIN CHRYSANTHEMUM.

NOVEMBER 15.—This, the fourth exhibition, took plate in the Corn Exchange, on the above date, and showed a marked improvement both in extent and quality upon those which had preceded it. Groups of Chrysanthemums were numerous and very good, and made an excellent display. The best came from Mr. Joynes, gr. to J. Gatward, Esq., Hitchin; Mr. J. T. Hartless, gr. to Mrs. Wilson, Hitchin, being a close 2nd. From Mr. Springham, gr. to J. H. Tuke, Esq., Hitchin, came six very good trained specimens, awarded the 1st prize, and to one of these, viz., Edwin Molyneux, carrying nearly forty good flowers, the Silver Medal of the National Chrysanthemum Society was awarded as the best specimen in the show. Three very remarkable specimens of Japanese Chrysanthemums were shown in the cottagers' division, by Mr. J. Saunders, a labourer in the Gasworks —they were finely grown and bloomed.

In the cut flower classes some admirable blooms were shown. The best thirty-six incurved flowers came from Mr. R. Adams, gr. to G. B. Hudson, Esq., Hertford—a very fine lot indeed; Mr. J. Kipling, The Gardens, Knebworth, being 2nd. In the class for thirty-six Japanese varieties the contest between these two was very close, Mr. Adams being again 1st; and Mr. Kipling 2nd. Mr. J. T. Hartless had the best twelve incurved varieties, and also the best twelve blooms of Japanese.

In the amateurs, Mr. W. G. P. Clark, Hitchin, proved very successful, being 1st in several classes for excellent blooms.

The best six blooms of any one variety of Chrysanthemum, came from Mr. J. Kipling, who had Ralph Brocklebank in superb form; Mr. Hartless coming 2nd with Fair Maid of Guernsey. Some very good blooms of Japanese Anemone types were shown. A very attractive section.

Mr. J. Kipling received the Silver Medal of the National Chrysanthemum Society, for the best bloom in the show—a very fine one indeed, of the yellow Japanese, Ralph Brocklebank; and the Bronze Medal of the Society offered in the amateurs' division, was awarded to Mr. W. G. P. Clark, for the same variety.

The best table decorated with Chrysanthemums, came from Miss Tuke, Hitchin; Miss Mary Ramson, Hitchin, being 2nd.

Messrs. E. & F. Newton, Horticultural Builders, exhibited their patent Reform System of Glazing, and the judges awarded it a Certificate of Merit. The system of glazing is highly approved by many gardeners of note.

MANCHESTER.

NOVEMBER 19 AND 20.—The Royal Botanical and Horticultural Society held its annual exhibition of Chrysanthemums in the Town Hall. The collections of plants and cut flowers staged were of first class quality and very extensive. Chrysanthemums in pots occupied the whole of one side of the hall, the other being devoted to miscellaneous collections. A charming collection of Chrysanthemums in pots, Palms, Ericas, Dracænas, &c., was staged by Messrs. W. Clibran & Son, Altrincham.

There were three competitors in the class for nine large flowered Chrysanthemums in pots, the 1st prize going to J. C. Chorlton, Esq., Didsbury, for a very fine well grown collection; the plants bearing from eight to ten fine blooms each, and being in excellent health.

N. A. Earl, Esq., of Kersal, had the best six Pompons; while for six Japanese the 1st prize was awarded to a fine collection exhibited by W. Holland, Esq., Higher Broughton.

For twenty-four cut blooms of incurved varieties there were three competitors, the 1st prize being deservedly allotted to A. Heine, Esq., Fallowfield, whose specimens were of excellent quality. There were five stands of twelve cut blooms incurved, A. Heine, Esq., again securing the 1st prize with his very beautiful and perfect specimens.

Twenty-four Japanese, of which six stands were shown, were good in all cases, but that of the Earl of Harrington, Derby, which obtained the 1st prize, was exquisite, every bloom being of high quality.

Of twelve cut blooms (Japanese) there were also six stands, the 1st prize being awarded to A. H. Sykes, Esq., of Stockport.

For the best collection of miscellaneous cut blooms the competition was very keen. Eight lots were staged, most of them of fine quality, the 1st prize being awarded to J. C. Chorlton, Esq., for forty-eight splendid specimen blooms, these being undoubtedly the best in the show.

In addition to the plants and flowers put up for competition, Messrs. Dickson, Brown & Tait, Manchester, staged a collection of Cyclamens, Roman Hyacinths, Ericas, Palms, &c. Messrs. Dickson & Robinson, Manchester, put up a similar group; and Messrs. Sutton & Sons, Reading, had a large collection of Cyclamens of fine quality. Messrs. Clibran & Son received the Society's Silver Medal for the group of plants put up by them, in the centre of which was an immense cross of flowers, standing about 5 feet high. Mr. Robson, Bowden, put up several stands of cut flowers of stove and greenhouse plants. Mr. Broome, of Llandudno, and Mr. S. Barlow of the same place, sent boxes of flowers cut from the open ground, reminding one of summer, and speaking of a very different climate experienced at Llandudno in November from that in Manchester. Messrs. R. Smith & Co., Worcester, staged a very fine collection of Apples; as also did Messrs. Caldwell, of Knutsford.

EDINBURGH CHRYSANTHEMUM.

Nov. 21 *and* 22.—The show was an unqualified success; total entries about 800 in Chrysanthemum cut blooms, and about 4,000 in all classes. Competition for the City of Edinburgh Cup was very keen. Mr. McHuttie, Newbattle, Midlothian, was placed 1st; Mr. Parker, Impney Hall, Droitwich, Worcestershire, was 2nd. The Scottish Challenge Cup, for thirty-six blooms, twelve Japanese, twelve reflexed, twelve Japanese reflexed, was won by Mr. Milne, Broomknowe, Row, Dumbartonshire. The Buccleuch Medal for eight Chrysanthemums in pots was won by Mr. Calder, Edinburgh. Fruit was an excellent feature. Apples from Messrs. Bunyard & Co., Maidstone, Kent; and Nova Scotia Apples were greatly admired.—*From our Special Correspondent, by wire.*

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending November 18, is furnished from the Meteorological Office:—

"The *weather* has continued in a very dull, damp, and misty condition very generally. In most parts of the kingdom slight drizzling rain has at times prevailed. In the eastern parts of England and Scotland, however, the sky has been less cloudy than elsewhere.

"The *temperature* has continued considerably above the mean in all districts, the excess having ranged from 3° in 'England, N.E.,' and 'England, N.W.,' to 5° in Ireland and the east and west of Scotland, and to 6° in 'England, S.,' and 'England, S.W.' The highest of the maxima, which were registered on the 15th, varied from 55° over some of our eastern and northern districts, to 59° in 'Ireland, S.,' and 'England, N.W.,' and to 60° in England, S.' The lowest of the minima, which were recorded on the 13th over England, and on the 17th over Ireland and Scotland, ranged from 25° in the north and east of Scotland to 35° in 'Ireland, S.,' to 43° in the 'Channel Islands.'

"The *rainfall* has again been much less than the mean in all districts.

"*Bright sunshine* has continued very deficient in nearly all pasts of the kingdom. In 'Scotland, E.,' however, 35 per cent. of the possible amount of duration has been recorded, and in 'England, E.,' 28 per cent.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending November 18.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	5 +	32	7	+ 200	— 13	6 —	214	36.1	9	23
2	4 +	32	18	+ 11	— 12	7 —	177	24.0	35	29
3	3 +	27	8	+ 2	— 37	5 —	163	22.3	7	27
4	4 +	33	6	— 11	+ 78	5 —	166	23.9	28	32
5	4 +	31	5	— 17	+ 21	5 —	157	24.8	9	29
6	6 +	48	0	+ 42	+ 31	6 —	156	23.6	14	31
7	5 +	33	3	+ 49	— 59	8 —	182	35.6	14	30
8	3 +	32	0	+ 43	— 42	4 —	174	28.3	15	29
9	6 +	60	0	— 87	+ 75	9 —	172	31.0	2	35
10	5 +	37	0	+ 61	— 80	7 —	203	33.8	15	26
11	5 +	53	0	— 4	— 27	6 —	183	32.0	16	32
12	4 +	64	0	+ 114	— 17	7 —	183	25.9	22	41

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, November 21.

Business very quiet. A slight improvement in price of Grapes. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve ...	1 6	7 0	Lemons, per case ...	21 0	45 0
— Nova Scotia, brl.	8 0	21 0	Pine-apples, Eng., lb.	1 6	3 0
Cobs, per 100 lb. ...	140 0	...	— St. Michael, each	2 0	6 0
Grapes, per lb. ...	0 6	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb. ...	0 9	...	Mushrooms, punnet	1 6	...
Beet, red, per dozen	1 0	2 0	Onions, per bunch ...	0 5	...
Carrots, per bunch...	0 6	...	Parsley, per bunch ..	0 4	...
Cauliflowers, each ...	0 3	...	Rhubarb, per bundle	1 6	...
Celery, per bundle ...	1 6	3 0	Seakale, punnet ...	2 6	...
Cucumbers, each ...	0 6	0 9	Shallots, per lb. ...	0 6	...
Endive, per dozen ...	1 6	...	Spinach, per bushel...	2 0	...
Herbs, per bunch ...	0 4	...	Sprouts, per lb. ...	0 3	...
Leeks, per bunch ...	0 3	...	Tomatos, per lb. ...	0 11	...
Lettuce, per dozen ...	1 6	...	Turnips, per bunch, new	0 5	...
Mustard and Cress, punnet	0 4	...			

POTATOS.—The only marked alteration in the trade is the demand for prime samples and good quality, showing fully 10*s.* per ton advance. *J. B. Thomas.*

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Evergreens, in var., per dozen	6 0	24 0
Aspidistria, doz. ...	18 0	42 0	Ferns, in var., per dozen	4 0	18 0
— speci. plants, each	7 6	10 6	Ficus elastica, each .	1 6	7 0
Begonias, dozen ...	4 0	12 0	Foliage plants, various, each	2 0	10 0
Chrysanth., dozen ...	6 0	15 0	Marguerites, doz. ...	6 0	12 0
— extra large, each	2 0	5 0	Palms in var., each	2 6	21 0
Cyclamen, dozen ...	15 0	24 0	Pelargoniums, scarlet, per dozen ...	4 0	6 0
Cyperus, per dozen .	4 0	12 0	Roman Hyacinths, per dozen pots ...	9 0	12 0
Dracæna terminalis, per dozen	30 0	60 0	Solanums, per dozen	6 0	12 0
— viridis, per doz.	12 0	24 0			
Epiphyllum, per doz.	12 0	18 0			
Ericas, various, doz.	8 0	24 0			
Euonymus, in var., per dozen	6 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun. ...	2 0	4 0	Marguerites. 12 bun.	3 0	6 0
Azaleas, doz. sprays	0 9	1 6	Narciss., paper-white, French, doz. bun.	4 0	6 0
Bouvardias, per bun.	0 6	0 9	— Eng., doz. sprays	1 0	1 6
Calla æthiopica, 12 bl.	3 0	6 0	Pelargoniums, 12 spr.	0 9	1 6
Camellias, white, doz.	2 0	4 0	— scarlet, 12 spr....	0 4	0 6
— various, per doz.	1 0	2 0	Primulas, double, 12 sprays	1 0	1 6
Carnations, 12 blms.	1 0	2 0	Roman Hyacinths, Eng., doz. sprays...	0 9	1 6
Chrysanth., 12 bun.	3 0	9 0	Roses, Tea, per doz.	1 0	3 0
Chrysanth., 12 blms.	0 6	3 0	— coloured, dozen.	2 0	4 0
Cyclamen, doz. blms.	0 6	0 9	— French, dozen ...	1 0	2 0
Dahlias, 12 bun. ...	2 0	4 0	— red, per dozen ...	1 0	2 0
Eucharis, per dozen	3 0	4 0	— Safrano, dozen...	1 0	1 6
Gardenias, 12 blooms	2 0	4 0	Stephanotis, 12 spr.	3 0	6 0
Gladioli, 12 sprays ...	1 0	1 6	Tuberoses, 12 blms....	0 6	1 0
Heliotropes, 12 spr.	0 3	0 6	Violets, 12 bun ...	1 0	2 0
Lilac, white, Fr., bun.	6 0	8 0	— French, bunch ...	1 6	2 6
Lilium, var., 12 bl....	2 0	6 0	— Parma, 12 bun...	3 0	4 0
Maiden Hair Fern, 12 bun.	4 0	9 0			
Mignonette, 12 bun.	2 0	4 0			
— French, per bun.	1 6	2 0			

ORCHID-BLOOM in variety.

Trade slack. Supply more than equals demand.

SEEDS.

LONDON: *Nov.* 20.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report some little business doing in Cloverseeds. The principal inquiry runs upon choice samples of Red, for which higher prices are asked. Nevertheless, the range of values is still remarkably low. Inferior grades of seed are neglected. There is not much doing in either Alsike, White or Trefoil. Blue Peas keep firm. Former cheap rates prevail for Birdseeds. Haricot Beans realise former terms. Some choice new Wrinkled Seed Peas just arrived from New Zealand are attracting attention.

FRUITS AND VEGETABLES.

SPITALFIELDS: *Nov.* 20.—American Apples, 17*s.* to 20*s.* per barrel; English, do., 3*s.* to 6*s.* per bushel; Pears, 2*s.* to 2*s.* 6*d.* per half-sieve; English Tomatos, 4*s.* to 5*s.* per 12 lb.; foreign Tomatos, 9*d.* to 2*s.* per box; Brussels Sprouts, 9*d.* to 1*s.* 3*d.* per half-sieve; Spinach, 1*s.* per bushel; Cauliflowers, 3*s.* to 6*s.* per tally; Savoys, 2*s.* to 3*s.* do.; Cabbages, 1*s.* 6*d.* to 2*s.* do.; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Greens, 1*s.* to 1*s.* 3*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 1*s.* 9*d.* do.; Parsley, 1*s.* 3*d.* to 2*s.* do.; Carrots, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Celery, 4*s.* to 10*s.* per dozen bundles; Horseradish, 12*s.* to 15*s.* do.; Parsnips, 4*d.* to 8*d.* per score; Beetroots, 4*d.* to 6*d.* per dozen; Leeks, 2*s.* to 2*s.* 6*d.* do.; Endive, 1*s.* to 1*s.* 6*d.* do.; Mustard and Cress, 1*s.* 6*d.* to 2*s.* per dozen baskets; Spanish Onions, 5*s.* to 6*s.* per case; English Onions, 6*s.* 6*d.* to 7*s.* 6*d.* per cwt.; Dutch Onions, 5*s.* per bag of 110 lb.; Belgian Onions, 5*s.* to 5*s.* 3*d.* do.; Carrots, 20*s.* to 30*s.* per ton.

STRATFORD: *Nov.* 19.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done, at the undermentioned quotations:—Cabbages, 2*s.* to 6*s.* per tally; Savoys, 3*s.* to 6*s.* do.; Cauliflowers, 4*s.* to 6*s.* do.; Turnips, 2*s.* to 3*s.* per dozen bunches; do., 20*s.* to 30*s.* per ton; Carrots (household), 26*s.* to 35*s.* do.; do. (cattle feeding), 22*s.* to 25*s.* do.; Parsnips, 40*s.* to 50*s.* do.; Mangels, 13*s.* to 15*s.* do.; Swedes, 13*s.* to 18*s.* do.; Onions, English, 130*s.* to 140*s.* do.; do. Dutch, 5*s.* to 6*s.* per bag; do. Oporto, 6*s.* to 8*s.* per case; Valencias, 5*s.* to 6*s.* do.; Apples, English, 2*s.* 6*d.* to 7*s.* per bushel; Watercress, 6*d.* per dozen; Pears, 3*s.* to 6*s.* per bushel; Celery, 7*s.* to 9*s.* per dozen rolls; Grapes, 12*s.* to 24*s.* per barrel; Horseradish, 1*s.* to 1*s.* 4*d.* per bundle.

POTATOS.

BOROUGH AND SPITALFIELDS: *Nov.* 19.—Quotations:—Regents, 50*s.* to 70*s.*; Hebrons, 50*s.* to 95*s.*; Magnum Bonums, 45*s.* to 80*s.*; Imperators, 45*s.* to 70*s.* per ton.

SPITALFIELDS: *Nov.* 20.—Quotations: Early Rose, 45*s.* to 50*s.*; Hebrons, 50*s.* to 60*s.*; Magnums, 45*s.* to 65*s.*; Regents, 60*s.* to 75*s.*; Imperators, 50*s.* to 70*s.* per ton.

STRATFORD: *Nov.* 19. — Quotations: Magnums, light, 50*s.* to 65*s.*; do., dark, 45*s.* to 50*s.*; Hebrons, 40*s.* to 70*s.*; Imperators, 50*s.* to 60*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Good supplies, very dull trade. Prime old Clover, nominally, 115*s.* to 126*s.*; current prime, 80*s.* to 98*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 95*s.*; inferior, 20*s.* to 50*s.* Straw, 20*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

BOOKS.—GREENHOUSE AND STOVE PLANTS: *J. P. A.* Mr. B. S. Williams' Manual on these, sold by him at the Paradise Nursery, Upper Holloway. OUTDOOR GARDENING: *Handy Book of the Flower Garden*, by D. Thomson (Blackwood & Son, London and Edinburgh).—INSECTS INJURIOUS TO FRUIT TREES: *Nursery. Manual of Injurious Insects, and Methods of Prevention*, by E. A. Ormerod. Swan, Sonnenschein & Allen, Paternoster Square, London.—*M.* Mr. E. Molyneux's book on the Chrysanthemum is published at 171, Fleet Street, *Journal of Horticulture* office.

CAMELLIA BUDS DROPPING: *A Subscriber.* If you have not over-watered the plants, but followed our instructions, we should suppose that the falling of the buds is due to London fog. We have observed several instances of this in previous years, and a little of it this autumn. Can any of our correspondents suggest a remedy for the bud-falling?

CHRYSANTHEMUM SPORT FROM MABEL WARD: *H. Nye.* It is at least worth growing another season, if only to test its merits.

CINERARIA LEAVES CURLING: *W. H.* The leaves have the appearance of having been subjected to a cold draught. They are not likely to recover.

CORRECTION.—In report of National Chrysanthemum Society's Show, p. 569, col. *a* (Incurved Blooms, line 3), for "Judson" read "Hudson."

CYCLAMEN: *S. L.* The grubs are those of the weevil—a most destructive pest.

GARDENERS' SITUATION IN FRANCE: *A. N. P.* Write to Williams and Norgate, foreign booksellers, Henrietta Street, Covent Garden, and state to them what you require. We cannot answer your other question. Advertise in the *Gardeners' Chronicle*, it circulates widely on the Continent.

"GARTEN UND BLUMENZEITUNG:" *G. M.* This periodical is published by Dr. Edmund Goeze, Kgl. Garten Inspektor in Greifswald, and is to be obtained from Herr Robert Kittler, Hamburg.

NAMES OF FRUITS: *R. S. P.* 2, Court Pendu-Plat; 3, King of the Pippins.—*Old Subscriber.* 1, Millot de Nancy; 2, Chaumontelle; 3, Uvedale's St. Germain; 4, Beurré Superfin; 6, General Todtleben.—*J. E. Nelson.* Your Pear seems to be distinct, but we were unable to determine its quality, as one of the fruits sent was rotten, and the other was unripe.—*D. W.* 1, Chaumontel; 2, Beurré Diel; 1, Cox's Pomona; 2, not recognised.—*W. T.* 1, quite decayed; 2, Josephine de Malines; 3, Beurré de Capiaumont.—*R. A. M.* 1, Duchess of Oldenburgh.—*F. W.* 1, Bedfordshire Foundling; 2, Warner's King; 3, Yorkshire Greening; 4, London Pippin.—*F. B. S.* 1, New Hawthornden; 2, Northern Greening; 3, Kerry Pippin (?); 4, Scarlet Russet; 5, Maltster.—*George Hawes.* 1, not known; 2, Gravenstein; 3, Scarlet Russet.—*W. H. W.* Fruit rotten.—*J. Joyce.* Your Grape was so much bruised in transit, that we are unable to identify it.

NAMES OF PLANTS: *S. T.* 1, Abies cephalonica var. Apollinis; 2, Cupressus, probably the upright form of sempervirens; 3, Juniperus sinensis, probably; 7, Podocarpus andina; 8, Cupressus, perhaps torulosa.—*E. C. L.* Abies homolepis, one of the species sent out accidentally under the name of Veitchii. It is superficially like brachyphylla, but is, we believe, quite different. Your specimen is rather yellow in colour, as if the soil were not quite suitable for it.—*C. H. W.* Pinus pinaster.—*Camjee.* Pholidota imbricata.—*H. R. W.* Odontoglossum tripudians.—*F. B.* 1, Adiantum hispidulum; 2, A. mundulum; 3, A. Capillis-veneris daphnites; 4, A. amabile; 5, A. assimile; 6 is a Veronica which we do not recognise.—*T. Smith.* Platyloma rotundifolium.—*A. W.* 1. Dendrobium bigibbum; 2, Vanda cœrulea.—*R. L.* We do not recognise your specimen.

PANSY SEEDLINGS: *R. O. B.* If the soil is of an adhesive nature, the plants may be transplanted with a ball into whatever place you please; but if it be light soil, the transplanting had better be deferred to March. You may cover the plants with a frame, but it should be a shallow one, and the glass must be kept very clean. Give air to the Pansies whenever the weather is not actually frosty. We cannot occupy our space with names of varieties. Get a nurseryman's list.

REMOVING BRANCHES FROM OAK TREES: *T. G.* If the branch be dead, cut it back to perfectly sound live wood, even if it be close to the trunk; and if the wound be a large one, paint it over with lead-coloured paint, after smoothing the edges of the bark. As a rule, no live branch should be cut back quite close to the stem, but a stump should be left of a few inches in length, and this being relatively small, will heal over in a few years, causing no blemish in the timber. Snags, when surrounded with living tissue, either form unsound places or knots in the timber, and are the frequent cause of decay in the interior of a tree.

SCHEDULE: *G. D. C.* "Any other variety of Apple," would mean one dish of any variety. It is in the singular number.

SUCCULENTS: *W. R.* Lists and some figures of the succulents commonly employed in outdoor gardening are to be found in the catalogue published by Messrs. H. Cannell & Sons, Swanley, Kent.

TACSONIA VAN VOLXEMI: *Mrs. K.* After the plant has covered the space allotted to it, the shoots annually made may be cut back in the winter season to various lengths, the shortest to a mere spur of 1 inch or less in length. The plant always shows to the best advantage when the flowering shoots hang *négligé* from the rafters of the conservatory. The permanent growths in this position should be fastened to the rafters securely.

THE NATIONAL CHRYSANTHEMUM SHOW: *P.* The complaint you make should be addressed to the committee.

VANDA CŒRULEA: *W. L.* The flower you send is rather above the average size, but the colour is not quite so deep as in many cases. As the plant is yet young, it may prove to be a good variety.

COMMUNICATIONS RECEIVED.—F. W.—G. Hawes.—R. & A. M.—W. T.—D. W.—J. B. (too late).—H. J. B.—P. Sewell.—H. W. W.—Justus Corderoy.—R. A. R.—J. R. J.—Michigan Agricultural College.—W. S.—T. Meehan.—J. E. J.—J. O'B.—J. D.—A. D.—E. J.—W. J. B.—*Journal of Horticulture.*—W. F.—T. C. E.—Webb & Sons (of no interest to gardeners).—W. G. P.—P. W.—W. B. H.—H. W. W. (thanks).—P. S., La Mortola.—A. B.—H. M. (many thanks).—G. H.—F. H.—V. L.—W. G. S.—McC.—A. Ker & Sons (next week).—R. Y.—T. C.—W. C.—A. L. R.—W. F., Isle of Man.—W. B.—L. P.—E. J. L.—H. C. (many thanks).—J. B.

CHRYSANTHEMUM
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SHORT HILLS, N.J.,

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LILIUM AURATUM.
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DIELYTRA SPECTABILIS.
SPIRÆA JAPONICA.
GLADIOLUS BRENCHLEYENSIS.
LILY of the VALLEY.

Finest Berlin Crowns, and strong Dutch Clumps.
Special Low Prices on application.

New Fern. 1889.

ADIANTUM WALTONII DIFFUSUM.—First-class Certificate was awarded by the Royal Horticultural Society on October 9, 1888. See opinions of the Horticultural Press, October 11 and 13, 1888.

The Executors of Henry Walton have pleasure in announcing that this very fine Adiantum is now being offered to the Public. We have every confidence in recommending it, and feel certain that it will give every satisfaction either as a specimen plant or for cutting purposes, the fronds being light and graceful, three to five times divided, from 2 to 2½ feet in length, and, when mature, are of a pleasing shade of glaucous green. A great improvement on A. Waltonii (T. Moore), and a more desirable variety than A. fragrantissima (see *Gardeners' Chronicle*, November 16, 1889, p. 557). All who have seen the parent plant have pronounced it to be a great acquisition.

Strong Plants, 3*s.* 6*d.* each.
Small Plants, from boxes, 1*s.* 6*d.* each, 12*s.* per dozen.
We hold a fine healthy stock of French and Show PELARGONIUMS, in 3-inch pots, per dozen, 4*s.*; per 100, 30*s.*, our selection. Price to the Trade on application.
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BEECH, 2 to 3 feet high.
ASH, 3 to 4, and 4 to 6 feet high.
HORNBEAM, 3 to 4, and 4 to 6 feet high.
LARCH, 3 to 4, and 4 to 6 feet high.
SPRUCE, 1½ to 2, and 2 to 3 feet high.
OAK, English, 3 to 4, and 4 to 5 feet high.
PRIVET, Evergreen, 3 to 4, and 4 to 5 feet high.
LAUREL, Common, 1½ to 2 feet, bushy.
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Large quantities of the above to offer. Strong plants and well rooted at low prices, of which samples may be had.
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And in 6*d.* and 1*s.* packets.

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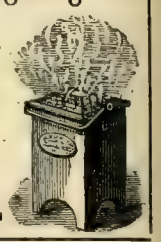
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Is vastly superior to any other.
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(Limited)
The Royal Seedsmen,
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N.B.—COCOA-NUT FIBRE, per sack, 1*s.*; 10 sacks, 8*s.* 6*d.*; Truckloads at special prices.

SPECIAL PRICE, LOOSE FIBRE PEAT (all waste extracted), and LEAF MOULD, 1*s.* per bush.
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SELECTED specially for Orchids, Choice Plants, Ferns, and Rhododendrons. PEAT-MOULD, LEAF-MOULD, LOAM, Coarse and Fine SILVER SAND, SPHAGNUM, COCOA FIBRE REFUSE, CHARCOAL, &c. A First-class Stock of FOREST, FRUIT, and ROSE TREES, CONIFERS, RHODODENDRONS, &c. PEAT MOSS LITTER.
EPPS & CO., The Old-established Peat Dépôt, Ringwood, Hants.

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Mr. G. WYTHES, *Syon House, writes:*—
"Bentley's Insecticide is a great saving in comparison to others. We use it largely, and it never fails to thoroughly eradicate all insect pests."

For particulars apply to **JOSEPH BENTLEY**, Chemical Works, Barrow-on-Humber, **HULL.**

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

"PICRENA," THE UNIVERSAL INSECTICIDE.

SAFE—ECONOMICAL—EFFECTUAL.

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Victoria and Paradise Nurseries, Upper Holloway, London, *January* 7, 1888. "GENTLEMEN—I have given your Insecticide, 'Picrena,' a good trial in competition with many others. I am pleased to say that I have found it to be more effectual in destroying Mealy Bug and other insects than anything we have ever used. It ought to command a good sale. (Signed) B. S. WILLIAMS."

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in Bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.*; in Tins (1 and 2 gallons), 10*s.* 6*d.* and 20*s.* each; in quantities of 5 gallons and upwards, 9*s.* per gallon.

Prepared only by
DUNCAN, FLOCKHART & CO., Chemists to the Queen, Edinburgh.

May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.

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Is admitted by the leading Nurserymen to be **the Best Quality** obtainable in the Trade.

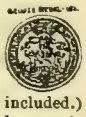
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Quality, THE BEST in the Market. (All sacks included.)

COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each.

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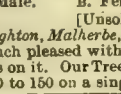
BROWN FIBROUS ORCHID PEAT 31*s.* 6*d.* per Ton, or 12*s.* per Truck of 4 tons; Bags 5*s.* each; 10 Bags, 45*s.*

BROWN and BLACK FIBROUS PEAT, 21*s.* per Ton, or 84*s.* per Truck of 4 tons; Bags, 5*s.* each; 10 Bags, 45*s.*

PEAT, for forming Rhododendron, Bog, and American Plant Beds, 15*s.* per Ton, or 90*s.* per Truck of 6 tons.

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For Catching the Winter Moths upon Fruit Trees should be applied at once. Where trees have been infested with Luper Caterpillars this summer, its use will prove invaluable. Write for particulars and price,

W. HORNE,
PERRY HILL, CLIFFE,
ROCHESTER, KENT.

A. Male. B. Female.

[Unsolicited Testimonial.]

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GISHURST COMPOUND, used by leading Gardeners since 1859 against Red Spider, Mildew, Thrips, Green Fly, and other Blight. 1 to 2 ounces to the gallon of soft-water; 4 to 16 ounces as winter dressing for Vines and Orchard-house Trees; and in lather from the cake against American Blight. Has outlived many preparations intended to supersede it. Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.*

GISHURSTINE keeps Boots dry and soft on wet ground. Boxes, 6*d.* and 1*s.*, from the Trade, Wholesale from PRICE'S PATENT CANDLE COMPANY (Limited), London.

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A Large Stock always on Hand.

Special quotations for quantities.

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At lowest possible prices.

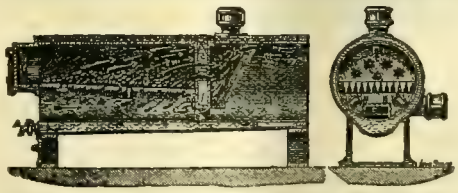
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21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.

English Glass, cut to buyers' sizes, at lowest prices, *delivered free and sound* in the country, in quantity.

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LEAD, GLASS, OIL, and COLOUR MERCHANTS,
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Stock Lists and Prices on application. Please quote *Chronicle.*

ORCHID BASKETS,
RAFTS, BOATS, AND CYLINDERS,
AND ALL GARDEN SUNDRIES.
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REGISTERED TRADE MARK

CANVAS.

From Damp, Frost, and Cold Winds. A perfect Non-Conductor of heat, keeping wherever it is applied an even temperature.

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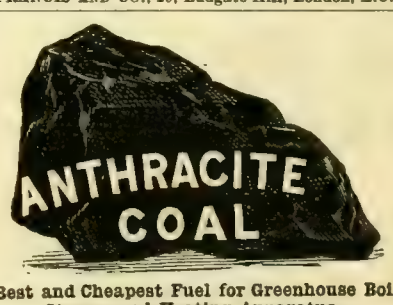
The words "Frigi Domo" are registered as a Trade Mark, and in two recent actions of Benjamin Edgington, Limited, Plaintiffs, *v.* John Edgington & Co., Defendants, and Benjamin Edgington, Limited, Plaintiffs, *v.* Osman & Co., Defendants, judgments have been obtained against the Defendants for a Perpetual Injunction, restraining them from using the words "Frigi Domo" as a Trade Mark for any material intended to be used for Horticultural or similar purposes not manufactured by or for the Plaintiffs or selected by them, and the Defendants, John Edgington & Co., and Osman & Co., were ordered to pay Damages and Costs.

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(LIMITED),
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RUSSIA MATS.—New Archangel Mats, and all kinds of Petersburg Mats, supplied Wholesale, to the Trade only. Also RAFFIA, TOBACCO PAPER and CLOTH, CANES, and all SUNDRIES.
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THE GARDENERS' CHRONICLE

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Head Line charged as two.

4	Lines	..	£0	3	0	15	Lines	..	£0	8	6
5	,,	..	0	3	6	16	,,	..	0	9	0
6	,,	..	0	4	0	17	,,	..	0	9	6
7	,,	..	0	4	6	18	,,	..	0	10	0
8	,,	..	0	5	0	19	,,	..	0	10	6
9	,,	..	0	5	6	20	,,	..	0	11	0
10	,,	..	0	6	0	21	,,	..	0	11	6
11	,,	..	0	6	6	22	,,	..	0	12	0
12	,,	..	0	7	0	23	,,	..	0	12	6
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26 words, including name and address, 1*s*. 6*d*., and 6*d*. for every additional line (about 9 words) or part of a line.

THESE ADVERTISEMENTS MUST BE PREPAID.
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BIRTHS, DEATHS and MARRIAGES, 5*s*. each insertion.
Advertisements for the current week MUST *reach the Office by Thursday noon.*

All Subscriptions Payable in Advance.

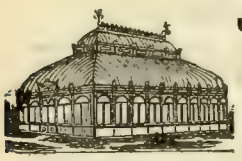
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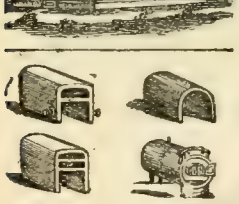
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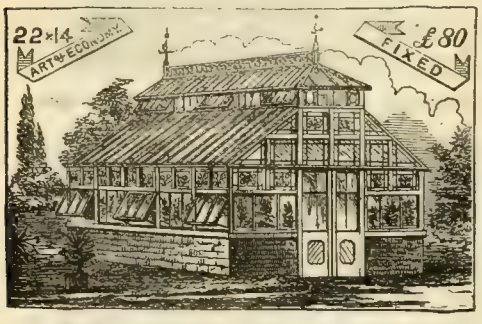
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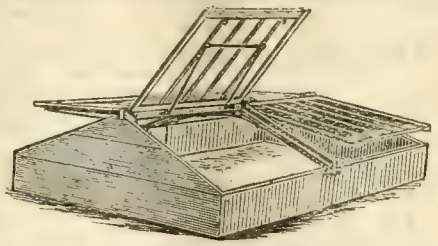
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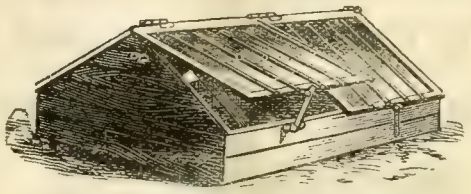
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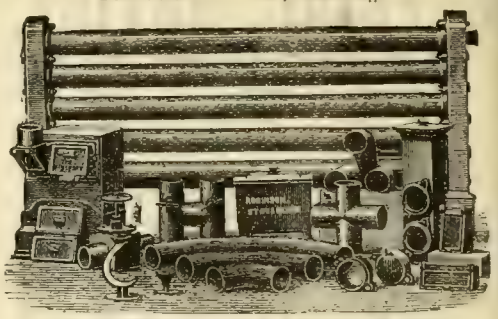
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GARDENING APPOINTMENTS.

Mr. JOHN MUTCH has succeeded Mr. TAYLOR at Loch Park, Denny, not Bonnybridge, as was stated in our last issue.

Mr. CHARLES FLETCHER, for three years Foreman at Mrs. MEYNELL INGRAM'S, Temple Newsam, Leeds, has succeeded Mr. CLARK, as Gardener to C. G. MILNES GASKELL, Esq., Thornes House, Wakefield.

Mr. THOS. SINGLETON, late Foreman at Ravensworth, has been appointed Head Gardener to W. R. INNES HOPKINS, Esq., Witton Tower, Witton-le-Wear, Darlington.

Mr. JAMES WASLEY, for the last three year Foreman at the Hendre, Monmouth, has been engaged as Head Gardener to C. LETHBRIDGE, Esq., Sherfield Manor, Basingstoke.

Mr. MAURICE FIELD, has been engaged as Head Gardener to Captain TERRY, The Shrublands, Hersham, Walton-on-Thames.

Mr. G. OSBORNE, seventeen years' Head Gardener to J. N. MAPPIN, Esq., Southgate House, Southgate, has been engaged as Head Gardener to C. ROGERS, Esq., Brandfold, Goudhurst, Kent.

WANTED, a HEAD GARDENER, in Nobleman's Establishment. Good character indispensable.—Apply by letter to B. W., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, GROOM-GARDENER.—Light work; in the House; all found.—Apply, with full particulars, stating wages required, to G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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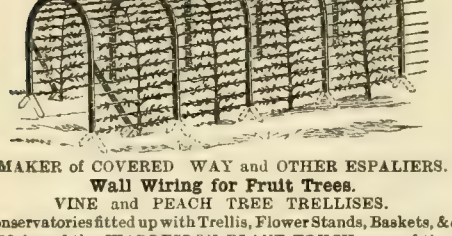
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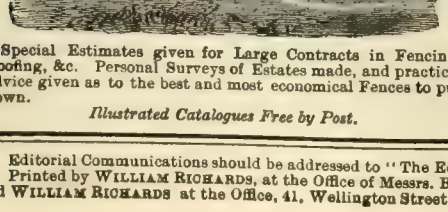
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, November 23, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2553.

No. 153.—Vol. VI. { Third Series. } SATURDAY, NOVEMBER 30, 1889. { Regt. as a Newspaper. WITH SUPPLEMENT. } PRICE 3d. POST-FREE, 3½d.

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The Subscription to America, including Postage, is $4.30 for Twelve Months.
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GREAT UNRESERVED SALES, every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., every MONDAY, WEDNESDAY, THURSDAY, and SATURDAY, at half-past 11 o'Clock each day, extensive consignments of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit the Trade and Private Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

Standard and Dwarf ROSES of the best sorts; CONIFERS, AMERICAN PLANTS, ORNAMENTAL FRUIT TREES, GREENHOUSE PLANTS, CARNATIONS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, December 3, at half-past 12 o'Clock, without reserve.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Tuesday Next.

1,000 LILIUM AURATUM.
2,500 LILIUM ALURM KRŒTZERI.
1,600 LILIUM LONGIFLORUM and RUBRUM CRUENTUM.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 3, at half-past 12 o'Clock precisely, 10,000 unusually fine BULBS of LILIUM AURATUM, just received from Japan in splendid condition; 2500 imported LILIUM SPECIOSUM ALBUM KRŒTZERI (so useful for forcing), 1600 LILIUM LONGIFLORUM and RUBRO CRUENTUM; a great variety of other Lilies, including LILIUM RUBRO VITTATUM, KRAMERI, LEITCHLINI, HARRISSI, and SPECIOSUMS; Japanese IRIS, together with a large assortment of various Hardy BULBS.

On view morning of Sale, and Catalogues had.

Wednesday Next.

PALMS, FERNS, and other PLANTS in variety, 100 Lots of DAFFODILS, first-class HYACINTHS, TULIPS, CROCUS, and other DUTCH FLOWER ROOTS, LILIES, and MISCELLANEOUS BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 4, at half-past 11 o'Clock precisely, without reserve.

On view morning of Sale, and Catalogues had.

Friday Next.

UNRESERVED SALE of ESTABLISHED ORCHIDS by order of Messrs. J. W. Steel & Co., who are giving up their Nursery. Important to the Trade and Gentlemen forming Collections.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, December 6, at half-past 12 o'Clock precisely, the second portion of this Collection of ESTABLISHED ORCHIDS; also about 200 lots of various ESTABLISHED ORCHIDS, another property, the whole for SALE ABSOLUTELY, without Reserve.

On view morning of Sale, and Catalogues had.

Clapham Road, S.W.—Absolute Clearance Sale.

In consequence of the expiration of the lease.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, 262A, Clapham Road, S.W., near the Swan Inn, on TUESDAY, December 10, at 12 o'Clock precisely, the Erections of 19 GREENHOUSES, HOT-WATER PIPING, BOILERS, PITS, GARDEN LIGHTS; also the whole of the Plants, 2000 PALMS, 4500 FERNS, 250 CAMELLIAS and AZALEAS, mostly white; 2 SPRING VANS, Bay HORSE, 4 MOWING MACHINES, GARDEN ROLLERS, and numerous other effects.

May be viewed the day prior to and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Friday, December 13.

THE COLLECTION of ESTABLISHED ORCHIDS, formed by the late A. Travers, Esq., of 28A, Addison Road, W.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY, December 13, at half-past 12 o'Clock, a choice COLLECTION of ESTABLISHED ORCHIDS, including several plants of Phalænopsis Schilleriana and P. amabilis, Cattleya labiata, autumn flowering; Lycaste Skinneri alba, Angræcum sesquipedale, and A. eburneum, Dendrobium, good plants of Cattleya Mendelii, C. Mossiæ, and C. Trianæ, Odontoglossums, &c.

On view morning of Sale, and Catalogues had.

ABSOLUTE SALE.

In Bankruptcy.—Re Maurice Young.

THE MILFORD NURSERIES, GODALMING

HIGHLY IMPORTANT SALE

of the First Portion of the exceptionally choice and remarkably well-grown

NURSERY STOCK,

extending over several acres of ground, and comprising the healthiest Stock that has ever come under the hammer, affording to Gentlemen, the Trade, and Large Buyers, an unprecedented opportunity for securing unlimited quantities of SHRUBS and TREES in the best possible condition for transplanting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above by AUCTION, on the Premises, the Milford Nurseries, Godalming, Surrey, on MONDAY, December 16, and four following days. The stock comprises about 48,000 CONIFERS, EVERGREENS and BORDER SHRUBS; 103,000 FOREST TREES, 20,000 STANDARD ORNAMENTAL TREES, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, of W. LEE, Esq., 143½ High Street, Guildford; and of the Auctioneers, 67 and 68, Cheapside, E.C.

Splendid Bulbs from Holland.

SALES every MONDAY, WEDNESDAY, and SATURDAY, in Large and Small Lots, to suit all Buyers.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., every MONDAY, WEDNESDAY and SATURDAY, at half-past 12 o'Clock precisely each day, first-class consignments of choice named HYACINTHS, TULIPS, CROCUSES, SCILLAS, NARCISSUS, and other BULBS, arriving daily from well-known farms in Holland.

On view mornings of Sale, and Catalogues had.

Wednesday and Saturday Next.

First-class Standard, Dwarf and Climbing ROSES, including most of the best known varieties; Pyramid and Dwarf-trained APPLES, PEARS, PLUMS, PEACHES, NECTARINES, and other FRUIT TREES to name; CARNATIONS, PICOTEES, and other BORDER PLANTS; AZALEA INDICA and MOLLIS, from Ghent; CONIFERS, LAURELS, EVERGREENS, and other SHRUBS; also choice named HYACINTHS, TULIPS, CROCUSES, NARCISSUS, LILIUMS in great variety, named GLADIOLI, SPIRÆA JAPONICA, LILY of the VALLEY, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on WEDNESDAY and SATURDAY NEXT, December 4 and 7, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday next.—(Sale No. 8057).

10,000 Grand BULBS of LILIUM AURATUM, and extensive consignments of L. AURATUM MACRANTHUM, L. SPECIOSUM, ALBUM, and RUBRUM, L. LONGIFLORUM, L. KRAMERI, &c., just received from Japan, in very fine order. Also 10,000 Berlin LILY of the VALLEY crowns for forcing. A fine Collection of Home-grown LILIES, Hardy Japanese IRIS, fine clumps of SPIRÆA JAPONICA, DUTCH BULBS, &c.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 5, at half-past 12 o'Clock precisely.

On view morning of Sale, and Catalogues had.

Thursday, December 12.

SPECIAL SALE of ORCHIDS in FLOWER and BUD.

MR. J. C. STEVENS begs to announce that his NEXT SPECIAL SALE of ORCHIDS in FLOWER and BUD will take place at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY, December 12, at half-past 12 o'Clock precisely, and he will be glad if Gentlemen desirous of ENTERING PLANTS FOR THIS SALE will please SEND LISTS not later than THURSDAY NEXT.

London, N.W.

FOR SALE, Capital FLORIST BUSINESS, with 13 Glasshouses and Pits, all heated; Zinc erections of Stable, Coach-houses, and Potting Sheds; six-room Dwelling-house and Conservatory. Lease about 76 years. Ground Rent £54. Price, including Stock, £1500. Open to an offer.

Further particulars of PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

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Apply, 55, Brown Street, Leicester.

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Apply, R. F. N., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

To Gardeners, &c.

TO LET, a nice compact FRUIT FARM and MARKET GARDEN, consisting of 5 acres, at Sherburn in Elmet, half an hour's ride by Rail to Leeds. Good Dwelling-house, consisting of Dining, Drawing, Breakfast Room, and Kitchen, Bath-room, Pantry, Coal-house, &c., on ground floor; 4 Bed-rooms and Servants-room, Wash-house, Coach-house, 2-stall Stable, Pigstyes, Poultry-houses, Greenhouse, Pits, Frames, large Orchard, scores of Apple, Plum, and Pear Trees; about 1600 Gooseberry and Currant Trees; an acre of Strawberries; nearly an acre of Raspberries in good bearing condition. To a steady respectable person with good references, the proprietor would let at a very reasonable rent. Apply to WILLIAM TAYLOR, Saville House, Princes Square, Harrogate

TO LET, a NURSERY, seven Houses and Pits, Stabling, two-roomed Cottage, &c., on lease, £55 per annum.—Apply on premises, 5A, Clifton Villas, Maida Vale, W.

London County Council.

TENDERS ARE INVITED for the SUPPLY of TURF to any or all of the Parks and Open Spaces under the control of the Council. Persons tendering will be required to declare in their tender that they pay such rates of wages and observe such hours of labour as are generally accepted as fair in their trade. Persons desirous to submit tenders may obtain form of tender, and other particulars, on personal application at the Office of the Architect of the Council, at Spring Gardens, during office hours, until THURSDAY, December 12, 1889. The tenders, which must be on the form supplied from this office, and be addressed to "The Clerk of the Council," and endorsed "Tender for Turf," are to be delivered at the Office before 5 o'Clock on the last-mentioned day, and no tender will be received after that hour. Any tender which is not fully filled up in every particular will be rejected. The Council does not bind itself to accept the lowest or any tender.

H. DE LA HOOKE, Clerk of the Council.

Spring Gardens, S.W., November 29, 1889.

Landscape Gardening.

ARTHUR M. KETTLEWELL (late of St. John's College, Oxford), is willing to undertake the Laying-out of Ornamental Grounds, Gardens, Parks, Cemeteries, &c. For some time under the supervision of one of the first Landscape Gardeners in England. Excellent testimonials. Charities, half commission.—Address, Titley House, Titley, R.S.O., Herefordshire.

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THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

CHRYSANTHEMUMS, best sorts true to name, strong Cuttings now ready from 1s. 6d. per dozen, 10s. per 100. Many of the best prizes in the country are taken by my customers. For Price of New Japanese Incurved, &c., see CATALOGUE, 2 stamps, of W. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

FERNS—FERNS.—Trade offer.—Great Annual Sale of Surplus Stock, cheap; 100,000 to select from, in 20 most saleable sorts; 10s. and 12s. per 100. Adiantums, Pteris, &c. Adiantum cuneatum and Pteris Mayii, 12s. per 100.
SMITH, The London Fern Nurseries, Loughboro' Road, Brixton.

Pteris cretica nobilis.

H. B. MAY offers the above beautiful and distinct PTERIS, undoubtedly one of the most useful of all the Crested Ferns. See illustration in *Gardeners Chronicle*, November 16, 1889. First-class Certificate from the Royal Horticultural Society. Free by post, 2s. 6d. each; larger specimens, 3s. 6d.

Dyson's Lane Nursery, Upper Edmonton.

N.B.—The largest stock of Ferns in the Trade. Priced LIST on application.

CLOSE OF DAFFODIL SALES.—At this season, we Close the Sales in South of Ireland. I have to again thank my English and Scotch friends for the very large support hitherto accorded me, and I really do not know what I should have done but for the efforts (through the *Garden* in particular on my behalf), of Messrs. Engleheart & Barr, they have made me so very famous by their praises of the Daffodils coming from Ireland. I do wish someone would give us a Seedling White Daffodil, the size of Emperor. *I am doing my best.*

WM. BAYLOR HARTLAND, Seedsman, Cork, Ireland.

ADIANTUM REGINÆ.—A most distinct and beautiful variety of the Maidenhair Fern. The fronds and pinnules are about the size of A. Farleyense, but are of greater sub-tance, and will stand exposure better. See Illustration in *Gardeners' Chronicle*, November 16, 1889. First-class Certificate from Royal Horticultural Society. Free by post, 2s. 6d. each.

H. B. MAY, Dyson's Lane Nursery, Upper Edmonton.

N.B.—An immense Stock of all the most useful Ferns. Priced LIST on application.

THORN QUICK, 3-yr. old, 2-yr. transplanted, very strong, 3 to 4 ft., 14s. per 1000. 2-yr. old, 1-yr. transplanted, 2 to 2½ ft., 11s. per 1000.

Scarlet CHESTNUTS, 12 to 15 ft., fine, 4 ft. through, 18s. per dozen; ditto, 8 to 10 ft., fine trees, 12s. per dozen.

Standard ROSES, best sorts and good trees, my selection, 12s. per dozen.

Late GREENGAGE PLUM, very prolific fruiting trees, an excellent late fruit and good flavour, 15s. per dozen.

Apply to N. LAWRENCE AND SON, Burnsfield Nurseries, Chatteris, Cambs.

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GARLIES MITCHELL, Nurseryman, Stranraer.

EVERGREEN HEDGES.

ARBOR VITÆ, American, bushy, 5 to 6 feet, 15*s.* per dozen, 100*s.* per 100; 6 to 8 feet, 21*s.* per dozen.
PRIVET, oval-leaf, 3 to 4 feet, 10*s.* per 100; 4 to 5 feet, 20*s.* per 100.
THUIA LOBBII, 2 to 2½ feet, 8*s.* per dozen, 50*s.* per 100; 2½ to 3 feet, 9*s.* per dozen, 60*s.* per 100; 3 to 4 feet, 10*s.* per dozen, 75*s.* per 100.
YEW, English, 1½ to 2 feet, 6*s.* per dozen, 35*s.* per 100; 2 to 2½ feet, 9*s.* per dozen, 60*s.* per 100.

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CONIFERS and SHRUBS.—Abies Douglasii, 4 to 5 ft., 50*s.* per 100; 6 to 7 ft., 70*s.* per 100; Araucaria imbricata, 2 to 2½ ft., 20*s.* per doz.; 3 to 3½ ft. 36*s.* per doz.; 4 ft., 48*s.* per doz.; Cupressus Lawsoniana, 2 ft., 25*s.* per 100; 3 to 3½ ft., 32*s.* per 100; 5 ft., 50*s.* per 100; Cupressus erecta viridis, 1½ to 2 ft., 30*s.* per 100; 3 ft., 40*s.* per 100; Picea Nordmanniana, 2 to 2½ ft., 50*s.* per 100; 3 ft., 12*s.* per doz.; Retinospora plumosa, 1½ ft., 25*s.* per 100; 3 to 3½ ft., fine, 50*s.* per 100; R. squarrosa, 1½ to 2 ft., 32*s.* per 100; Thuia Lobbii, 3 to 4 ft., 30*s.* per 100; 4 to 5 ft., 50*s.* per 100; T. dolabrata, 2 ft., 30*s.* per 100; 4 ft., extra, 36*s.* per doz.; Berberis Aquifolium, 2 ft., 12*s.* per 100; Box trees, 2 to 3 ft., 20*s.* per 100; Japan Box, 12 inch, 12*s.* per 100; Cotoneaster Simonsii, 3 to 4 ft., 16*s.* per 100; Sea Buckthorn, 12 to 15 inch, 8*s.* per 100; 2 to 3 ft., 16*s.* per 100; Dogwood, 2 to 3 ft., 12*s.* per 100; Escallonia macrantha, pots, strong, 24*s.* per 100; Laurels, common, 2 to 3 ft., 12*s.* per 100; L. Colchiaca, 3 to 3½ ft., 20*s.* per 100; L. caucasicum, 3 to 3½ ft., 20*s.* per 100; L. rotundifolia, 2 ft., 16*s.* per 100; Rhododendron ponticum, 1½ to 2 ft., 30*s.* per 100; 2 to 2½ ft., 40*s.* per 100; 4 ft. buds, 100*s.* per 100; R. hybrida, 2 to 2½ ft., 60*s.* per 100; 4 ft., 120*s.* per 100. Special prices per 1000.

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PICEA CONCOLOR, 2, 3, 4, 5, and 6 feet.
" GRANDIS, 4 to 8 feet.
" LASIOCARPA, 3, 4, 5, 6, to 8 feet.
" MAGNIFICA, 3 to 5 feet.
" PUNGENS GLAUCA, 1½ to 3 feet.
PINUS AUSTRIACA, 3, 4, 5, 6, to 7 feet.
RETINOSPORA PISIFERA AUREA, 3 to 6 feet.
" PLUMOSA AUREA, 6 to 8 feet.
THUIOPSIS BOREALIS, 4 to 6 feet.
" DOLABRATA, 3 to 7 feet.
THUIA LOBBII, 4, 5, 6, and 7 feet.
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BERBERIS AQUIFOLIA, 1 to 1½ feet.
COTONEASTER SIMMONSII, 1½ to 2, and 2 to 3 feet.
HAZEL, 2 to 3, and 3 to 4 feet.
HORNBEAM, 1½ to 2, and 2 to 3 feet.
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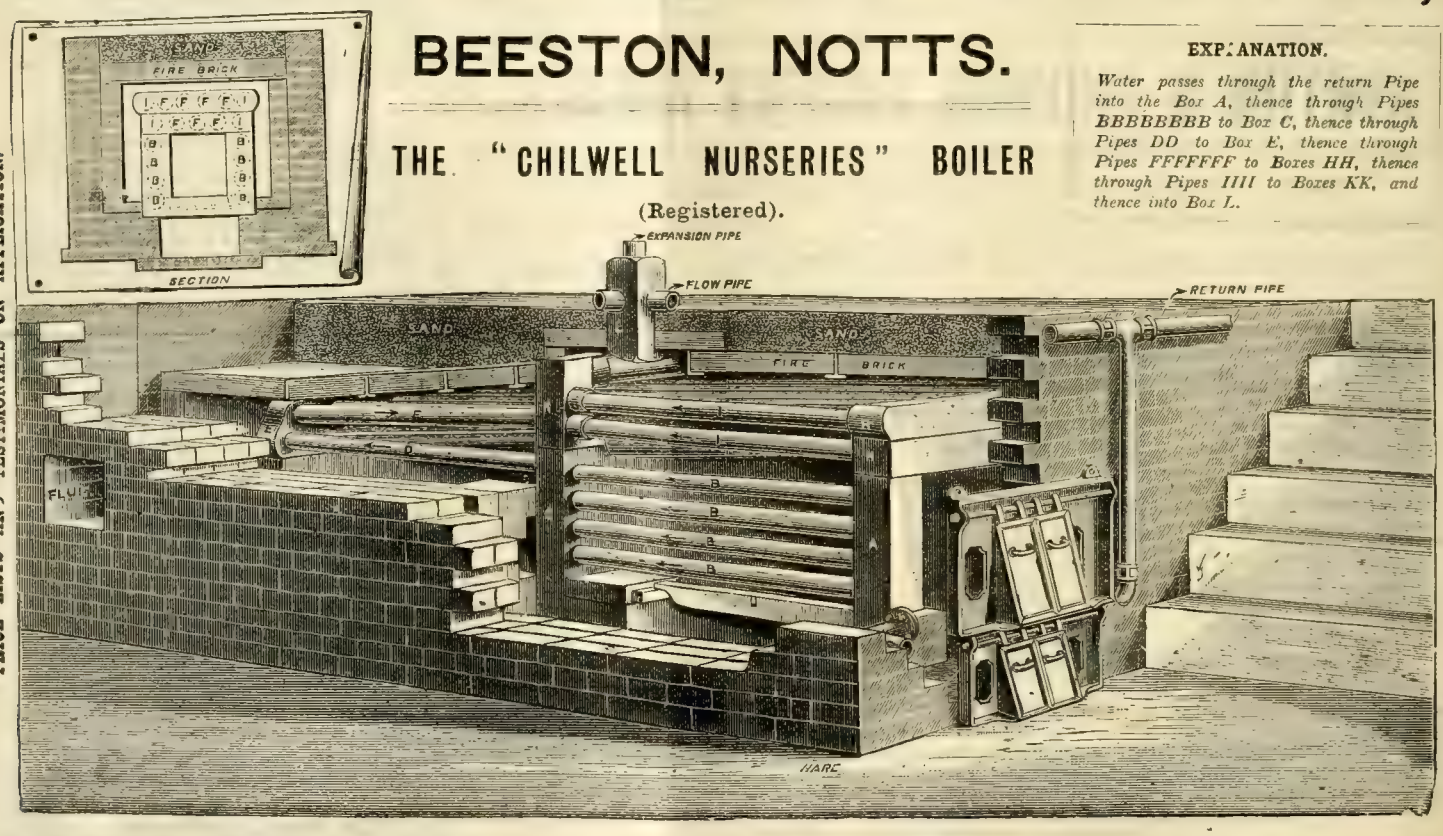
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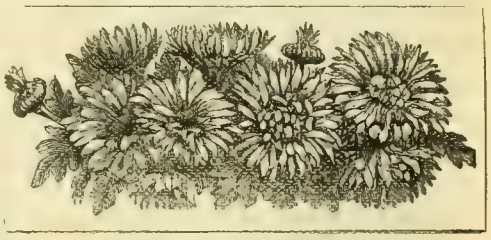
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THE

Gardeners' Chronicle.

SATURDAY, NOVEMBER 30, 1889.

HOLLAND PARK GARDENS.

HATFIELD House and Holland Park are the most famous existing gardens whose origin can be traced to the time of Elizabeth; and as the seat of the Hollands has recently been the object of discussion, a brief reference to its gardens may not be considered out of place in these pages.

The modern history of the place may be said to have commenced with Henry Fox, who became subsequently Baron Holland, and who, in 1749, leased the place at a rental of £182 16*s.* 9*d.* Eighteen years afterwards he purchased the estate. But the period which is included in the interval between Elizabeth and the second George is full of historical associations, which unquestionably had a more or less accentuated influence on the condition of the gardens. The "grand tour" had become a rage among the sons of nobility, and it was, probably, through them that the various systems of continental gardening became adopted in this country. The inelegant formality of the Dutch, the pseudo-classic of the Italian, not to speak of others, became partly acclimatised. Old Hentzner dwells with much affection on the "labyrinths made with great labour," on the *jets d'eau*, the "many pleasant and fair fish-ponds, and abundant statues," and the artistic value of these adventitious helps to gardening may still be seen, to some extent, at Holland Park. In reading the history of this famous place—so rich in its literary and political associations—one wonders how the objects of grotesque formality must have irritated the temper of the great Joseph Addison, who had, in the *Spectator*, pleaded so much for a return to the natural style of gardening. Perhaps, if his brief and unhappy mastership of the place had been real rather than nominal, he would have carried his precepts into practice. But Mr. Spectator had to satisfy himself with contemplative walks through the shade groves of this estate, to which he had a prescriptive right through his marriage with the widowed Countess of Warwick in 1716. Indeed,

it was in the present dining-room, on the first floor, looking northward over the gardens and park, that the spotless career of the great essayist closed, where, in fact, he desired his stepson to see "how a Christian meets death."

To leave the literary for the practical, it may be stated that the architecture of the place is of a very mixed character. The third Lord Holland effected several sweeping alterations. These are the gates by Inigo Jones, and the later decorations are very classical in style; "but the trace of the old Gothic feeling is everywhere." The modern history of the garden dates from the third quarter of the last century, and very many improvements were then effected. Lady Holland herself was fond of gardening. In this the advice of Lord Holland's friend, Charles Hamilton, of Pain's Hill, "a gentleman celebrated for his exquisite taste in gardening," proved of great assistance. It appears that Cedars, Oaks, and a variety of American trees were planted, and are now flourishing in the manhood of perfection. Writing to a friend in 1750, Lord Holland says:—"I want to raise a quantity of male spreading Cypress and other Cypresses from seed. . . . I want likewise some acorns of scarlet Oak, and a bushel or more of Chestnuts for sowing." A recent writer points out that there is an MS. letter in the British Museum in which Lord Holland, writing in 1751, says:—"Mr. Watson advised me to sow something with a hard name, to creep on the ground, and cover with green all the vacant spaces in my young plantations. I wish you would tell me what it was." This letter, addressed to Peter Collinson (the distinguished botanical friend of Franklin and Linnæus, and after whom the genus Collinsonia is named), is thus endorsed by the recipient:—"Double Snowdrops, to remind him in March to sow Candytuft, rock stock, Venus' Looking-glass, &c."

From the interesting and exhaustively illustrated monograph on Holland House by the Princess Marie Liechtenstein (1874), the reader may obtain some very faithful views of the gardens, and of some of its famous beds and trees. The flower-beds in frameworks of Box, separated by zigzags, are peculiarly Dutch. Towards the end of this Dutch garden is "a kind of evergreen curtain, formed by an arcade covered with Ivy. Through the arcade we notice another flower garden (also Dutch), in which the Dahlia stands monarch of all it surveys. And has it not the right to do so here? For though it owes its name in botany to Dahl the Swede, does it not owe its existence in England to the third Lady Holland? She brought seeds of it from Spain, and had them sown in this very garden, whence it appears to have spread over our island."

Unfortunately this is only sentimentally true, and the statement is corrected in a note; Dahlias were first introduced into England by Lady Bute, in 1789, and failed. Lady Holland's attempt in 1804 to acclimatise was equally unsuccessful, and their effective introduction dates from 1815. Her claims, however, afford a sufficient base for the verses of her spouse:—

"The Dahlia you brought to our isle,
Your praises for ever shall speak,
Mid gardens as sweet as your smile,
And in colours as bright as your cheek."

Holland Park is in many respects unique, and probably there is no large city which contains another such extensive estate in its very midst. Although a large slice of it has, in the past, been handed over into the utilitarian clutches of the demon builder, it is to be hoped that it will for ever be preserved as one of the great "lungs" of this vast city. *W. Roberts.*

New or Noteworthy Plants.

LÆLIO-CATTLEYA × CASSIOPE, *n. hyb.*

Already three hybrids of bigeneric extraction have been raised from Lælia pumila, as the seed parent, and now a fourth appears upon the scene. Three of them were raised in the Royal Exotic Nursery, and are the products of Mr. Seden's skill. In the present instance the pollen was obtained from Lælio-Cattleya × exoniensis ×, and the seed was sown in 1881. A note supplied by the Messrs. Veitch states that the plant has eleven pseudobulbs, from 1 to 3 inches long, the leaves varying from 2 to 5 inches long by 1¼ inch broad, and that the habit of the plant is intermediate between that of the two parents. The flower received is 4¾ inches in diameter, the petals twice as broad as the sepals, and both of a beautiful rosy-lilac. The lip is very obscurely three-lobed; the front lobe undulate, bright crimson-purple, the veins a little deeper than the ground colour; the throat and side-lobes are buff-yellow, the margin of the latter rosy-lilac, and the base of the disc maroon-red. The face of the column is bright purple. It is a very pretty hybrid, with much of the general shape of L. pumila, though the shape, and especially the colour of the lip, are largely derived from the pollen-parent. All these hybrids from L. pumila are dwarf and compact, and very charming little plants.

Liparis fulgens, *Rolfe, n. sp.*

A Liparis with bright red flowers is certainly something unusual, but one which is certainly a very pretty little plant, was sent recently to Kew by Messrs. Fred. Horsman & Co., of Colchester. It was obtained a few years ago from the captain of a Dutch merchantman, and is supposed to have come from the Philippine Islands. The locality does not seem to be ascertained, as another plant which came with it for determination, and which was obtained from the same source, proved to be Cœlogyne Rossiana, Rchb. f., which is said to be a native of Burmah. Of course I cannot say that the Dutch captain obtained both plants from the same source. Some day it may come to light again, and its origin may then be proved. It belongs to the section Coriifoliæ, and stands nearest the Javan L. crenulata, Lindl. The characters are as follows:—Pseudobulbs ovoid-oblong, sub-compressed, a little constricted in the middle, 2 inches long; leaves lanceolate-linear, 5 to 6 inches long, 10 to 12 lines wide; raceme terete, 5 inches long, about twenty-six-flowered; bracts subulate-lanceolate, 3 to 4 lines long; pedicels 6 to 7 lines long; flowers of an uniform deep red colour; sepals and petals reflexed, 3 to 4 lines long, the former linear-oblong, three-nerved, the latter very narrow and one-nerved; tip about equalling the sepals, cuneate-obcordate, the apex divided into a pair of obtuse, minutely crenulate lobes. There is a pair of rounded calli near the base of the lip. I believe only one plant is known in cultivation. *R. A. Rolfe, Herbarium, Kew.*

Notices of Books.

Manual of Orchidaceous Plants. Part V., Masdevallia (London: J. Veitch & Sons, Kings Road, Chelsea).

The part last issued of this very useful work is devoted to Masdevallia, Pleurothallis, Cryptophoranthus, Restrepia, Arpophyllum and Platyclinis, and cannot fail to be of great interest and service to all who are concerned in the history and cultivation of orchids. No doubt, when dealing with genera, some of whose species are showy, while others are small in the individual flower, making handsome specimens only when large enough to produce many flowers simultaneously, great difficulty is experienced in restricting a work not expressly intended for botanists to the bounds of the horticulturists' requirements. It is evident that Messrs. Veitch have in this case experienced difficulty in selecting their material, and probably no two orchidists would agree as to what should be selected and what passed on one side. Nevertheless, in a *Manual of Orchidaceous Plants cultivated under glass in Great Britain*, it would not be unreasonable to expect brief descriptions of a larger number of species of such a genus as Masdevallia than are included in the present work. If the limits of the works precluded the extension of the descriptions, an enumeration at the end of the book of the over one hundred well-determined species, without counting species which are considered varieties by Messrs. Veitch, and of the more than one hundred and fifty species and varieties of Masdevallia cultivated in the Botanic Gardens, Glasnevin, Dublin, and in the collection of Mr Courtauld and others, might usefully have been supplied. Our own columns would supply material for at least a simple enumeration, or even a brief description, of the large majority of the species at present in cultivation in this country. Such a list could not fail to increase the value of the work, while it would not detract from its merit even in the eyes of the most exclusive florist. In illustration of our remarks, we may mention that taking the letter p. at random, we find no mention is made of M. pachyura, M. punctata, Rolfe; M. pulvinaris, M. porcelliceps, and others. We do not find the pretty M. nidifica, M. caloptera, recently sent us from Glasnevin, and various others which would have been as well worthy of mention as the very small M. simula and others that are included. Under Pleurothallis, P. scapha, so often noted and often seen in gardens, might well have been enumerated, though it is by no means to be wondered at that but few of this very large but very unattractive genus are deemed worthy of comment.

It is the excellence of the work done in the case of the species enumerated, the concise and instructive matter related about each, the freedom from errors, and the pleasant manner in which all that can be gleaned about the plants has been put together, that makes us wish that in the interests of the work itself, and of the public, it should, in the case of the more important genera, have embraced more species.

Two noteworthy new arrangements appear in the part under notice both at the instigation of Mr. R. A. Rolfe, of the Herbarium, Kew, who has worked long and well on Masdevallia and allied genera. The large genus, Masdevallia, is divided into groups, and under these divisions, section 1, Eumasdevalliæ, has Coriaceæ, Cucullatæ, Polyanthæ, Coccineæ, Caudatæ, Amandæ, with the species respectively grouped under them.

The second section, Saccolabiatæ, has been made to embrace all the M. chimæra division; the third, Triaristellæ, has M. tridactylites, M. gemmata, and the others allied; whilst a fourth section includes M. Swertiafolia, &c. This, or some such arrangement, has long been needed to render more simple the classification of this large genus. The other new arrangement is the placing under Cryptophoranthus of Rodriguez those species previously known as Masdevallia Dayana, M. fenestrata, and others known as the windowed Masdevallias, according to Mr. Rolfe's enumeration in our columns December 3, 1887, p. 692.

In the illustration (fig. 85, p. 621), which we have selected from our stores to show the diversity of the forms of the genus, commencing at the upper left-hand corner, the first is Masdevallia coccinea Lindeni; next to which, with the leaf at the back, is M. ignea; M. Veitchii comes next in the centre, followed by M. Davisi in right-hand corner. In the second row from the top, beginning at the left, is M. coccinea Harryana; below which is M. Caudata Shuttleworthii, with a front and side view of M. Chimæra in the centre; to the right of which is the white M. Tovarense. At the lower left-hand corner is M. Ephippium = (Trochilus); and in the centre the bell-shaped M. Carderi with M. Melanopus at the extreme right-hand corner.



Fig. 85.—Group of Masdevallias. (see p. 620.)

ROOT PRUNING.

We can do little to improve our climate—though much has already been done in that direction by thorough drainage and by deeper and better cultivation. The latter, in fact, may be called an extension to the utmost possible limits of surface drainage. And in so far as it perfects and completes surface drainage, it improves the climate; for every drop of water that passes through the earth instead of being lifted off it by evaporation, renders the earth and surface atmosphere warmer and drier in consequence.

But root pruning deals directly with the plant, or tree—not indirectly upon it through its environment, like superior culture and its surroundings. The main results of root pruning are the limitation of the supplies of food, and the improvement of its quality, and both processes tend to augment and sustain fertility. It may be—is, in fact, difficult to explain the whys and the wherefores of the operations that lead to such desirable results; but the facts themselves have been demonstrated over and over again; and some of the more potent causes of them may be formulated thus:—Granted a limited amount of heat, light, air, elaborating or manufacturing forces, and an unlimited quantity of food or raw material, the producer becomes handicapped or swamped by the excessive supplies of the latter. He loses, as it were, his legitimate power over the products produced. Experience also proves that excessive supplies of plant food are mostly expended in wood-making. This is Nature's mode, unaided by art, of restoring the balance between supply and expenditure. The evils of an excess of plant-food may be modified if not cured by extending the area of their expenditure. As the plant grows larger, the pressure on over-fed vessels—congested elaborating organs—becomes less, and finally ceases. It may matter less to the plant than many suppose, whether the evils of an excess of food be cured through a mere extension of growth or augmented fertility. From the fact, that Nature left wholly to herself mostly takes the former course, we may infer that, on the whole, it is the best for the health and longevity of the plant. Both these plans, however, tend to rectify and adjust the balance between supply and demand, the acquisition and expenditure of force or food from without. Growth and fertility are both compensatory remedies for excessive supply.

Root pruning, on the contrary, is an instrument, and, as many too readily assume, an unnatural remedy for the same disproportion between force and functions. But really it is not at all unnatural, for what are our barren, hard subsoils—our shallow, poor tilths—our gravelly deposits, the prevalence of loose stones, and our solid strata of rocks, but so many natural instruments of root pruning, and a few of Nature's many means of cutting off perforce excessive supplies of food from the roots of our fruit trees and other plants? As what is most unnatural, is the planting of these on deep, rich, soft tilths, filled or mulched to repletion with stimulating manures, and with every obstacle or check to root extension carefully removed, and then to profess to marvel greatly that Nature returns us for such food-gorging conditions great crops of wood, chiefly—or only.

Had fruit growers learned more, and to better purpose, the great lessons that Nature teaches, in almost any natural soil, even the artificial practice of root-pruning might never have been needed. For the natural checks to growth caused by scarcity of plant-food are intended to check growth and establish and maintain a high state of fertility.

Forgetting these lessons, the cultivator who has over-manured, and so over-fed his trees, with the one hand, has been compelled to prevent their consuming it to excess by pruning off a large portion of their roots with his knife in the other. But whether practised by Nature or art, the object aimed at in all root-pruning alike, is the enhancement of fertility by reducing excess in the food supplies. In the manipulation of the roots, either by Nature or art, for this purpose, we gain secondary advantages of equal, or even more importance than the primary one. These have been briefly referred to as improving the quality of food supplies. Without going into minute details, no one conversant with the more obvious and immediate effect of root-pruning will deny that it metamorphoses pipe-like roots into masses of fibres. Further, all practical fruit growers agree that in these fibrous roots the basis of fertility is laid, and the habit of continuous fertility perpetuated.

But not only does root pruning change the character, but the situation of the roots; generally it raises them nearer to the surface, exposes them to more heat, and brings them into contact with sweeter—that is, better and more immediately available food.

That much may be done through raising roots to more genial plains or fields of labour, is abundantly proved by the mere act of root lifting, where little or no, or as little as possible, of root pruning has accompanied the process. Barren trees have thus been made fruitful, cankered stunted trees become clean, and grown into robust health by thus forcing the roots to gather their food closer to the surface. By these and other methods, the root pruning, readily and necessarily, limits the supplies of food and improves its quality, and by both processes they succeed in establishing and perpetuating fertility. Much of success or failure, however, in these great cultural and productive achievements, depends on the times, modes, and extent of rooting and pruning, and hence a second article may profitably be devoted to practical instructions on these important matters. *D. T. F.*

[The practical results of root-pruning are obvious. The benefits of the process when judiciously performed are also obvious. But while in our present state of nescience we should hesitate to supply any other explanation of the causes of the good results than that furnished by our correspondent, we are by no means satisfied that he is correct. The increased production of fibrous roots resulting from root-pruning, so far from limiting the supplies of food, must surely increase them, though it may regulate and diffuse the current of absorbed liquids. Again, the use of the word fertility in this connection is misleading. The growth of what we call the fruit is not necessarily an evidence of fertility, but only an extension of the vegetative growth by which leaves and shoots are formed. Real fertility consists in the development and ripening of the seed and of the embryo plant within it, which is another matter. Ed.]

A MEDITERRANEAN GARDEN.

At La Mortola, near Mentone, one of the greatest obstacles—perhaps the greatest obstacle—in the way of successful gardening, is the scarcity of water in the summer. The Riviera is a country where there is no rain during July, August, and September; where each spring, or well, is regarded as an invaluable possession, in which often many peasants will have shares for so many hours' use during the week. The rains of the winter months are collected into huge cisterns, for the watering of the Olives, Oranges, and Lemons. No wonder, then, that in such a garden as Mr. Hanbury's plant after plant should suffer from the drought, especially if once neglected by the gardeners. A much-deplored instance of this is to be seen in a shrub of Luculia gratissima, that queen of greenhouse plants in Britain, which is now withered and dead; yet, to all appearance, it grows in a very shaded and damp spot, as things are at present. Its position is one positively under trees, where from the south very little light has access; yet, such is the nature of the soil, and so destitute of water is that part of the garden where the underlying rock slopes steeply towards the sea, that the Luculia has succumbed. Acacias and Casuarinas—which in the latter case, at least, have grown to large trees—have also particularly suffered. In two or three notable instances trees have made marvellous efforts to reach water which has been in their neighbourhood, even if they have had to send their roots out to long distances in the search. A Eucalyptus, according to the assertions of the gardeners, had grown underground for more than 30 feet, seeking a well under a small cliff about the apparently solid rock of which it had in some strange manner pushed its roots. An Acacia had burst a cement tank that it might reach the precious fluid; so that next year it is proposed to lift out of the ground one of the stronger roots, and place it in the tank to absorb the desired water in the time of droughts.

As, thus, there is an eager striving after water in times of drought, so, with the perennial barrenness of the soil, there may be detected instances of greedy search for food, or richer soil. Thus, a Eucalyptus growing picturesquely among the Olives, near to Mr. Hanbury's stables, has, with that strange searching power of roots, the mystery of which botanists have not yet solved, contrived to find out a cellar where good soil, required for the garden, is at present stored. Its roots have traversed a considerable distance; but the most remarkable feature is, that they have had to find their way from the small terrace where the Eucalyptus grows, around, or across, a stony road (cut on one side from the solid rock), and also through the stonework of the foundations and the plaster of the walls. The heap of soil is filled with these roots, some of which, as they pass through the wall, are quite a third of an inch in thickness.

The amount of labour expended over the watering of the Lemon and Orange groves of the peasants is also very considerable; but for the right growth of the treasures in the acres of La Mortola, the care and labour needed must be imagined rather than described. *Philip Sewell.*

PLANT PORTRAITS.

Anthurium Scherzerianum, var. Madame de la Devansaye, *Illustration Horticole*, t. 89, a white form tinged with cream, of A. Scherzerianum—raised by M. de la Devansaye.

Calanthe masuca, *Lindenia*, t. 198.

Carludovica rotundifolia, *Bot. Mag.*, t. 7083.—A noble Palm-like species, native of Costa Rica, which flowered in Kew in 1876.

Catasetum macrocarpum var. chrysanthum, *Lindenia*, t. 197.

Cattleya labiata Gaskelliana, *Reichenbachia*, t. 75.

Crinum Schimperi.—A species with three or four medium-sized, funnel-shaped, pure white flowers. *Gartenflora*, t. 1309.

Cypripedium Arthurianum ×, a cross between C. insigne and C. Fairrieanum, raised in Messrs. Veitch's establishment. *Orchid Album*, t. 299.

Cypripedium Dauthieri marmoratum, *Revue de l'Horticulture Belge*, November.

Cypripedium macropterum ×, *Orchid Album*, t. 391.—A cross between C. Lowi and C. superbiens.

Dendrobium infundibulum, *Lindenia*, t. 199.

Epidendrum prismato carpum, *Lindenia*, t. 200.; and *Reichenbachia*, t. 76.

Gerbera Jamesoni, *Bot. May.*, t. 7087; and *Garden*, October 26..—See *Gard. Chron.* 1889, vol. v., p. 772, f. 122.

Gordonia anomala, *Garden*, November 2.

Gossypium Comesii, *Bulletin della R. Soc. Toxana di Horticultura*, October, 1889, t. 10.

Griffinia hyacinthina, *Garden*, October 26.

Odontoglossum Cervantesii, var. decorum, *Illustration Horticole*, t. 90.

Odontoglossum cuspidatum xanthoglossum, *Orchid Album*, t. 390. Sepals and petals rich golden yellow, blotched and barred with chestnut; lip pandurate, cuspidate, waved, and toothed; yellow, blotched with reddish-brown at the base.

Odontoglossum Brandtii, Kranzlin & Wittmack, *Garten Flora*, t. 1308.

Oncidium lanceanum, *Reichenbachia*, t. 73.—The temperature along the Rio Negro, where this species is found, is 95° in the shade, and never sinks below 75° at night. Fortunately the plant can be grown under a less extreme range than this.

Passiflora coccinea, *Illust. Monatshefte*, September, t. ix.—The plant, represented after a drawing by H.R.H. Princess Ludwig, of Bavaria, is assuredly not P. coccinea, but P. racemosa, or a hybrid from that species. [*M. T. M.*]

Phaius pauciflorus, *Bot. Mag.*, t. 7086.

Vanda Hookeriana, *Reichenbachia*, t. 74.

Xylobium leontoglossum, *Bot. Mag.*, t. 7085.—See *Gard. Chron.* 1889, vol. v. p. 458.

Plant Notes.

PERENNIAL SUNFLOWERS.

An important, bold, showy group of autumn-flowering plants, exceedingly well adapted for the back lines of herbaceous borders, or the centre of large blocks of plants, and perhaps never seen to better advantage than in the mixed shrubby and herbaceous arrangements. The predominant colour is yellow, varying from light to the deepest golden hue. The individually large flowers are numerously produced. The most useful and ornamental species are Helianthus decapetalus and its many varieties. The type itself is a dense habited plant, usually about 5 feet in height, each shoot being terminated by a much branched corymbose inflorescence; the flowers terminal, on slender twiggy branchlets, of a clear light yellow hue, and more than 2 inches in diameter. In the absence of frost, the flowers will last for many weeks in perfection. Of somewhat similar species are H. giganteus, H. divaricatus, and H. lætiflorus. But by far the best of the decapetalous group is multiflorus, of which there are several varieties, all of which are dwarfer, and have larger and many more flowers of a deep yellow colour.

Of the single-flowered varieties, H. major, of gardens is the best. Then there is the well-known H. multiflorus-plenus, and H. m. grandiplenus—a variety which has the ray florets suppressed, with those of the disk much more petaloid than in the ordinary form of plenus; however, I have occasionally seen all three forms in one plant, but in this case I failed to see any difference in the colour of grandiplenus from the disk florets of the ordinary form of H. multiflorus plenus. All the forms are equally worthy of being planted for autumnal flowering; and the ordinary H. multiflorus plenus, with its broad ray florets—which play a similar part in the flower to the guard petals of the double Hollyhock—is by no means inferior to any of the other varieties. H. strumosus, H. japonicus, and H. doronicoides are strong-growing species with orange-coloured flowers, and better adapted for the rougher shrubbery than the herbaceous border. Helianthus rigidus is, however, a very desirable plant, it being dwarf and early to flower. The variety H. r. semi-plenus is a grand plant, with large, deep yellow coloured flowers, which are very useful for cutting. This is a capital companion plant to those of the multiflorus section, and one that will be largely grown when better known. H. orgyalis, with its tall stems and narrow, short, drooping, cordyline-like foliage, is also a very distinct and ornamental species. *F. R.*

Cistus longifolius.

This is the Cistus that is known in nurseries as C. florentinus, and it was till lately one of the most attractive plants in our little rockery. This and the form called C. lusitanicus are by far the hardiest of the dwarf-growing kinds, forming dense, compact bushes, in both cases with very dark green leaves, and in the species noted above, the leaves have wavy margins, very ornamental, forming an attraction even in the absence of the handsome white flowers. At present only a few flowers are open, but the calyces, which appear to be persistent in his species, are large, and of an intense purple-red, which, together with the white flowers, and almost black-green foliage, can hardly fail to attract attention. The whole family of shrubby rock Roses is well worth attention, very few of which lack beauty, and all of them full of interest. Many of the species may not be long lived; but they are so readily struck from cuttings, as make that of minor importance. *H., October.*

New Zealand Veronicas.

So far, comparatively little seems to have been done with these delightful shrubs as winter decorative subjects, and, although they have been again and again recommended for this purpose by the few who have troubled to give them a fair trial, they do not seem to have met with the support they merit. In the majority of the species, their habits and aspects, without being in the least stiff or conventional, are generally neat and compact; well furnished with their varied leaves; and, with few exceptions, the plants are as hardy as most other shrubs from that region, producing throughout early summer their white and pink flowers in the greatest profusion. As rock shrubs they are well-known and much appreciated; indeed, it would be hard to find a well-furnished rockery where these neat shrubby Veronicas do not form a part. In some cases they are objected to on account of their tendency to become leggy and unsightly after three or four years, a fault readily mended by the ease with which they may be always increased from cuttings. It is, however, as pot plants for the decoration of windows, balconies, &c., that I wish to draw attention, and we know of few plants more suitable for this kind of work. In general appearance they are all that can be desired, and certainly superior to many of the plants at present used; they stand smoke, and confinement extremely well, and will do in the same pots for a number of years without being disturbed. They have another advantage over most of the Coniferæ, and that is, they may be cut back or trimmed to almost any extent without damaging the plant. Amongst the most ornamental are V. epacridea, V. pinguifolia, V. Traversii, V. carnosula, V. anomala, V. buxifolia, V. chathamica, a trailing or creeping species; V. parviflora, V. decussata, and many others. *H.*

IN MEMORIAM—ROBERT MARNOCK.

Of few men could it be so truly said that his gentleness made him great. I first made his acquaintance through the *United Gardeners' and Land Stewards' Journal*, of which he was the able, patient, and accomplished Editor. The paper was launched on the joint stock principle with highly philanthropic, educational, and business aims. Beyond moderate dividends for the shareholders, the profits were to be devoted to similar purposes as those of the Gardeners' Benevolent Institution, extending similar benefits to the Land Stewards. So much is stated here to show the difficulties and delicacy of the position Mr. Marnock was called upon to fill, and he filled it for several years to the entire satisfaction—so far as I am aware—of numbers of enthusiastic shareholders and others, all inexperienced in this new and risky venture based on business and philanthropy.

Looking back to those early times, and first ventures at expressing my opinions through the Press, I can but admire the wisdom, patience, and generosity with which he treated youthful crudeness and inexperience. How easy it would have been for him to have snuffed out many of us in the plenitude of his editorial power and professional fame. But no; and it may be truly said of Mr. Robert Marnock, without flattery or profanity, that "the bruised reed he did not break, nor quenched the smoking flax." On the contrary, he was ever ready to strengthen the weak, and to stimulate the flickering spark into a flame; and the man was, if possible, even more wise and gentle than the Editor. To know Mr. Marnock was to love him. I remember disputing a point with him once with all the impetuosity of youth. He smilingly replied with such tact, humour, and force, that from henceforth he had no more devoted follower and ardent admirer. True, we seldom met, from circumstances over which neither had control; but our occasional meetings were feasts of good things to me and many others.

It would be presumption in me, or in almost anyone else, to criticise Mr. Marnock's chaste and finished works in gardens or landscapes. I have never visited them without a feeling of satisfaction akin to that experienced in the presence of some of our finest pictures, or in the close perusal of some of the gems of our literature. Of Mr. Marnock it may be truly said, that he put his character, his love of man, his knowledge and love of Nature into his landscapes, and hence the cultured pleasure and abiding satisfaction they afford. *D. T. Fish.*

CO-OPERATIVE NUTRITION.

It is a well-known fact amongst gardeners that Beeches, Oaks, Chestnuts, Hazels, and, in short, most Cupuliferæ, as well as many Birches, Heaths, and Conifers, especially the Abietineæ group, are difficult to transplant. The gardener knows this fact, but not the cause of it; indeed, did he know the latter, he would soon discover how to carry out their removal with more success than hitherto. I remember a letter published in this paper some time ago, in which a "Practical Man" spoke with little respect for the Scientific Committee of the Royal Horticultural Society. He wondered that the learned men did not know a fact, well known to a carpenter. He doubted whether scientific investigation could be of any use to practice. Perhaps the following lines may convince him that scientific investigation is sometimes of great value to the practical man:—Professor Frank, of Berlin, in studying the life-history and growth of Truffles, found that all the youngest roots of Beeches were not possessed of root-hairs, and had almost no root-cap, but were always covered with a more or less thin sheet of fungus-spawn. Closer investigation showed him that this was no accidental occurrence, but that it was a peculiarity of the roots of all Cupuliferæ, whether grown in Scandinavia or Italy, in East or West Germany, in plains or on the high mountains; whether the underground was limestone or of a silicious nature. This remarkable fact needed closer investigation, and for that purpose Professor Frank cultivated Beeches in water, from seeds, as well as older plants, and he found that here the fungus-covering diminished during the growth of the young roots. Then he procured Beech seeds in soil from the forest, of which one-half had been sterilised by subjection to a temperature of about 300° Fahr. All the seeds germinated, but after two years only a few of the seedlings in the sterilised earth were still alive, whilst those in the natural soil remained well and healthy. An inspection of the different roots showed that it was only those of the plants grown in the natural soil which possessed the fungus-covering. It might be that the soil was so much changed by being sterilised that it was unsuited for plant cultivation, as Professor Frank sowed seeds of Lupinus in sterilised and natural soil, with the result that those sown in sterilised soil grew much better than those in the natural. Indeed, by the act of sterilising by means of a high temperature, the inorganic constituents of the earth are made more easily available for plant nutrition. These experiments show that the fungus is a necessity for the good growth of Beeches, &c. They showed, also that the fungus lives in vegetable soil, careful study of roots in a sandy soil showing that the roots in the upper part of the soil (where there was more or less vegetable matter), were covered with the fungus, while it disappeared gradually as the depth increased, and vegetable soil became less abundant. This may be seen by the naked eye, as the roots infected with the fungus, which Frank calls "Mycorhiza" (root-

fungus), are thick, short, much-branched, and coral-like, whilst those without the fungus are thin, long, and but little branched. It is interesting to learn that the spawn of mycelium of the Mycorhiza sends out numerous hyphæ, or threads, into the earth, which grow around particles of humus, just as the root-hairs of other plants grow about inorganic particles of the soil. The fungus is able to assimilate the organic humus, to take the carbon and nitrogenous constituents from the vegetable earth, which the root-hairs of plants are themselves unable to do. Now, the utility of the fungus is apparent. It yields to the plant those organic elements which it is itself unable to take directly out of the soil. The conversion of the elements is quickened, and the plant receives back in a short time those enormous quantities of organic material which it loses yearly by the fall of leaves. The old idea of gardeners, that humus is a good manure for plants, is thus confirmed, but in an entirely different manner from what was supposed. Now for the practical application of Frank's investigations. The fungus is more or less destroyed by breaking up the vegetable earth into small pieces; plant your Beeches, Oaks, Chestnuts, Birches, Conifers, Heaths, &c., in good vegetable earth (humus) in large pieces, and do not destroy the coral-like roots of these plants! *Udo Dammer.*

Foreign Correspondence.

THE WINTER AND UMBER MOTHS.

I notice in several of the last numbers of the *Gardeners' Chronicle* complaints of the ravages of the caterpillars of the winter and umber moths. A few years ago the orchards and parks of our New England States suffered severely from the canker-worm—a nearly allied species. The same remedies were tried as were recommended in your issue of August 10. At first, the grease, tar, &c., were applied directly to the bark of the trees. It was soon found to be injurious to the trees, and many of them were even killed by it. We then tried tacking a narrow strip of paper around the trees, and applying the substances to that. This answered very well, but it required frequent attention, and in the end was costly.

At present, all methods of trapping have been abandoned, as a much cheaper and surer remedy has been found in the use of arsenites. In addition to the caterpillars which defoliate the trees, our orchardists have to contend with the Codling moth and curculio, which attack the fruit, and against all of them they place their main dependence on arsenical solutions.

For Apple, Pear, and Plum trees, 1 lb. of London purple is used for 200 to 250 gallons of water, and, if properly applied, no injury whatever will be done to the foliage. The Peach, however, is considerably injured with a solution one-half as strong as the above, and it is doubtful if more than 1 lb. to 1000 gallons can be used on Peach trees without injury.

Any force-pump can be used for applying the poison, but one fitted with a T valve is desirable, so that two hose can be attached. One of these will give a small return flow into the barrel of poison, and thus keep the particles in suspension; the other hose is fitted with a nozzle that will furnish a fine mist-like spray, and thus moisten every part of the tree with a very small expenditure of water, 2 gallons being amply sufficient for a large-sized Apple tree.

If the trees are sprayed before the growth starts, the caterpillars will all be destroyed. As soon as the fruit has set, another application will be necessary to destroy the leaf-rollers, codling moth larvæ, &c. Trees should never be sprayed while they are in bloom, for if there are bees in the neighbourhood, it would prove very destructive to them.

As a rule, two applications will be found sufficient, but, if the poison is washed off by rain, it should be renewed. The arsenites will only destroy such insects as eat the leaves, stems, or fruit; and although this is a common practice in all portions of the country, the only complaints of the destruction of beneficial insects have been due to spraying while the trees were in bloom, thus causing considerable loss to apiarists.

The small quantity of poison used precludes the possibility of any injurious effects coming from eating the sprayed fruit, and it has been conclusively demonstrated that the orchards can be pastured with perfect safety to stock.

We feel sure that our English cousins will find this a cheap, safe, and effectual remedy against their troublesome foes. The Cherry aphis and insects of that class are not affected by arsenites, and kerosene emulsion or a similar remedy must be used in their case. *L. R. Taft, Michigan Agricultural College, U.S.A.* [Our folk are very slow to adopt these remedies, which have repeatedly been brought under notice in these columns, perhaps from a dread of the arsenic. Ed.]

Michigan Agricultural College.

In your issue of August 10, "Hortus" asks if the Michigan Agricultural College is open to young women. I will answer, yes; this college receives all persons fifteen years of age, who can pass an examination in the common English branches. Although we have no special course for them, the number of young women present during the year usually ranges from fifteen to twenty.

Our course covers four years, and all students who are candidates for degrees are required to work during one year, two or three hours per day, in the horticultural department. This work is made as far as possible educational. Students who desire to make a specialty of horticulture, can spend their afternoons during three years of their course working in the fruit, flower, or vegetable gardens, greenhouses, and propagating houses, or in practical landscape work on the College grounds.

In addition to practical courses in botany, chemistry, entomology, &c., lectures in horticulture are given during two terms of twelve weeks each.

Many of our students lack perhaps either time or means to take our full course, and they are allowed to select such branches as they desire. Special students in horticulture can, in one year, attend lectures in the branches mentioned above, and by devoting their spare time to work, will be able to acquire considerable knowledge of the practical operations of gardening. *L. R. Taft, Agricultural College, Mich., U.S.A.*

Orchid Notes and Gleanings.

Anœctochiluses.—These diminutive terrestrial Orchids, remarkable for the rich and varied hues of the leaves, are, unfortunately, not so much grown now as they once were. Anœctochiluses bear small and unattractive flowers, in that respect resembling many other plants with beautiful foliage. Generally they are considered as being difficult to grow, although there are gardeners who can grow them freely enough. When the late Mr. Vair was in charge of the once noted collection of plants at Dangstein, Liss, he cultivated Anœctochilus as well as any one could wish, and those now living who who saw them will bear me out in this. He was so confident about their culture that he planted out a number of them on stages and rockwork, but they did not succeed in those positions. I hope we shall soon get good importations of the plants, and that the interest in them will be revived, or I fear that many will be quite lost to the garden, if it has not occurred already. As regards their cultivation the plants require as a compost in which to grow, sand and peat mixed with sphagnum moss; when they are grown under bell-glasses, a little sphagnum should be put on the surface occasionally, and this sets off the plants to great advantage. If kept too close they apt to damp off, therefore it is a good plan to have the glass or case always tilted about an inch, thus causing a circulation of the air within the bell which tends to prevent damping off, and gives vigour, the fleshy stem also gaining greater substance. The following species would make a good collection, but there are many more, and some of them extremely rare:—Bullenii, cordatus, latimaculatus, Lowii, Petola, Veitchii, Dawsoni, setaceus, the oldest in cultivation; Rollinsoni, and zanthophyllus. *A. Evans, Lythe Hill, Haslemere.* [These plants should be grown in pans or pots, that are well-drained, as stagnant water is as harmful as stagnant air, and should a plant get out of order, it is best to turn it out of the pot and wash the roots after paring off decayed portions, and repot it in fresh compost. Bottom-heat should never be applied, but they should be grown in a house (a pit is better), which in winter has a night temperature of 55°—60°, with a rise of 5°—10° in the day; in spring and summer these temperatures may be raised from 5°—10° more, according to the weather. Ed.]

Nursery Notes.

ORCHIDS AT ST. ALBANS.

Probably not since the nursery of Messrs. F. Sander & Co. was established have there been so many new species and extraordinary varieties in bloom at one time as at the present. In Cattleyas, despite the fact that the habitats of these plants have been thoroughly searched, and each new species brought home is supposed to be the last, a Cattleya unlike any other yet introduced is in bloom in several examples. From the uniformity of their characteristics, and the small amount of variation in the different plants of the very small batch received, there is no reason to suppose it to be of hybrid origin. The habit of the plants, compared with specimens of Lælia Johnsheana standing beside them, show certain resemblances in the stout pseudobulbs, which also resemble somewhat dwarf plants of C. Loddigesii. The large wax-like flowers, which proceed in twos and threes from the young growths, are of a soft tint of rosy-lilac, the front lobe of the lip having crimson marbling. At first sight the flowers recall to mind those of C. Walkeri nobilior, but the trumpet-like expansion of the side-lobes of the labellum is peculiar, and forms one of several distinct characters, which render this chaste, and fragrant, and undoubtedly new species of flower, a desirable plant.

In the Odontoglossum-houses, among a beautiful collection of the St. Albans type of O. crispum, there appeared the acme of all the blotched or spotted forms; and one, compared with which the handsome O. c. apiatum—which, it will be remembered, realised 165 guineas at Messrs. Protheroe & Morris' rooms—appears a long way in the rear. The newly-flowered treasure, in spite of the slugs having taken a violent fancy to its tender flower-spike, as they generally do to good things, produces from a rather small plant large flowers of fine substance, the petals broad, and nearly equalled in width by the sepals. A space of about two-thirds of the middle portion of the petals is irregularly coloured with rich claret-crimson, and about the same proportion of the sepals is similarly coloured, and in the form of three irregular bands; the lip is also richly spotted, and the whole of the segments of the flower have a broad edge of white. The reverse sides of the flower segments are almost as richly coloured as the front; and in addition to the heavy markings that are shown through from the front, they are suffused with clear rose. It is a stately variety, and there will be no two opinions about its being the king of the spotted crispums.

Another is a quite new species, or it may be a natural hybrid, but the several plants among the few imported, and now flowering for the first time, come from a new locality, and, being exactly alike, it is quite safe to suppose that it is as good a species as any of the rest of this handsome and variable genus. The tall, slender scape, and rather distantly placed flowers, have a likeness to O. nevadense, and the flowers, which equal in size those of a good O. mulus,

seem to be intermediate between that species and a good clear form of O. Hallii leucoglossum. That combination of characteristics will at least suffice to give to those who have not seen the plant in bloom an idea of it, although the peculiarly elongated, pointed, and stalked white labellum, with its clear violet blotch in the centre, places it away even from the species named. The sepals are clear yellow, with broad umber or chocolate-coloured bars; the petals similar, but having a neat dark spotting, in place of the broad markings of the sepals. Also in the Odontoglossum-houses are many of the charming new introductions of Messrs. Sander—O. Hunnewellianum, which will become a favourite when known, but which it is not necessary to describe, as it was noted in the *Gardeners' Chronicle*, November 23, p. 591. In another cold house, in company with many plants of Sophronitis grandiflora, three phenomenal varieties of that favourite species were in bloom, the first a decided novelty in colour. Its flowers, which are of good size and clear chrome-yellow, lightly washed with orange, the orange tint showing more clearly over the veining of the flower. It is a decidedly remarkable and beautiful plant. The second would perhaps be chosen by some persons on account of its extraordinarily large, brilliant, dark scarlet flowers, which are just 4 inches across, and have very broad and overlapping petals—indeed, it approaches very nearly the ideal of a florists' flower. The third has numerous and smaller flowers, whose characteristic is the bright yellow labellum, with a few purple lines running over its surface. Also in flower were the carmine-crimson Sophronitis coccinea of Reichenbach f., and the curious little S. cernua. Among anxiously watched new plants in the tank-house, in which coloured Nymphæas are in bloom, is the noble Grammatophyllum Measuresianum, the dried spikes of which, sent by the collector, prove it to be one of the most gorgeous of Orchids. The spikes are 2 to 3 feet long, and are clad for two-thirds of their length with large yellow flowers, which are spotted and blotched with dark blood-red, appearing at a distance of a dark purple colour. The plant has stately foliage, and is handsome both in or out of flower.

Among the Cypripediums, the treasured beauty of the present time is C. Morganæ Burfordiensis×, of which the stock has been acquired by Messrs. Sander & Co. The beauty of the original C. Morganæ × is well known, and it has been depicted in the *Gardeners' Chronicle*, but of the Burford variety it is stated that the late Mr. Spyers, who effected the cross, chose for the purpose the best examples of both C. Stonei and of C. superbiens—hence the difference. C. Morganæ × is one of the largest and most beautiful of Cypripediums, and, moreover, a free grower. Also in flower was the rare C. Berggrenianum×, Rchb. f., in *Gardeners' Chronicle* June 30, 1888, p. 778. It has shining pink-tinted pouch and petals, and the dorsal sepal, which is in the way of C. œnanthum superbum, is pure white at the top, then rose, and at the base emerald green striped and spotted with dark brown. Many new forms are also flowering of an importation of C. insigne, which, amongst others, included the priceless, clear yellow, unspotted C. i. Sanderæ; and in the houses in which seedlings are raised, Cypripediums, Cattleyas, Lælias, and Masdevallias, yet unseen in flower, are in bud.

Among the Dendrobiums, D. nobile Sanderianum, with its large flowers, and the peculiar carmine outer halves to the petals; D. Phalænopsis, and a new form of it, are in bloom, together with D. bigibbum majus, and several Torres Straits species of botanical interest, and claiming notice on the same terms, was the curious Bulbophyllum Wallichianum, with flowers spread like the sails of a windmill, and which are sensitive to the slightest breath of air. A noble specimen of Lælia exoniensis×, with seventy or eighty bulbs is in flower; also Lælia grandis, many specimens of L. albida, L. anceps, and L. autumnalis. The new L. anceps Ballantinii being a worthy rival of the beautiful L. a. Amesiana.

On some of the rockeries, which are to be found in most of the houses, even valuable specimens are planted out, and it is curious to see how well they thrive; even the plants of Angræcum Sanderianum ramble luxuriantly over the rocks, and without having a particle of soil beneath them.

Among the plants of Miltonia vexillaria, which occupy the whole of one side of a house, were noted in flower the rare M. Warscewiczii (Odontoglossum Warscewiczii), and scores of well-budded plants of Odontoglossum Rossii majus, and others of that class. The last extension—the large Cattleya-house—which skirts one entire side of the nursery, and which has proved such a success, was bright with Cattleya Bowringiana, and various other Cattleyas and Lælias, and with a great show of buds on the C. Trianæs, and of sheaths on the C. Mendelii and Mossiæs, of which, as with most of the other showy species, there are thousands, whose flowers have not yet been seen since they were imported, and consequently the phenomenal varieties are unknown among them.

Cultural Memoranda.

WINTER-FLOWERING BEGONIA ADONIS.

For gardeners having to supply flowers for decorative purposes during the winter months, this beautiful hybrid is invaluable. We lately saw some fine plants of it at Tower House, Chiswick, some 2 or 3 feet through, and laden with bright rosy-carmine flowers.

It may prove of practical value to put on record the system of culture pursued by Mr. T. Bones, the gardener. The plants are grown in a temperature of 55° to 65°, and have an abundance of light when making their growth. They are allowed to break naturally; and after they have made about 3 inches of growth, the points are pinched out to about two points from the pot. The compost used is fibrous loam with a small quantity of leaf-mould and sand, and 32's are found very serviceable-sized pots. The shoots are tied out to a few stakes, and when the pots are filled with roots, a little soot-water is applied twice a week with benefit. When the plants, after flowering, show signs of rest, water is sparingly given until the stems die down. *J. B.*

HARDY CYCLAMENS.

[See Supplementary Sheet.]

Our supplementary illustration represents a group of hardy Cyclamen growing in the gardens of Mr. Tillett, Sprowston, Norwich, who obligingly furnished us with the photograph. These hardy plants do not find so much favour as their undoubted merits entitle them to, seeing that some species bloom early in the year, and others late; and when once planted in suitable soil they are better left undisturbed. Every rule is tested by its exceptions, and we have known a strong colony of C. europæus growing in a Vine border now destroyed at Encombe, in Dorsetshire, and which was dug over every season, bloom beautifully notwithstanding. Many of the hardy Cyclamens, and especially those raised by Mr. Atkins, of Painswick, Gloucestershire, who was engaged in their improvement for thirty years, have given additional beauties to the rock garden and cool greenhouse.

Thanks to his untiring efforts Cyclamens in early autumn and spring, although small in point of numbers form one of the most interesting groups we possess, being ornamental alike in and out of flower; and even where large collections of the most charming alpines are cultivated, we find the hardy Cyclamens quite indispensable to the proper furnishing of the rock garden. They are natives chiefly of Southern Europe, and begin to flower, in the case of C. neapolitanum (C. hederæfolium of gardens), towards the latter end of August, the flowering season being carried on by the huge-leaved Algerian C. africanum, which, at best, is merely a variety of the first-named, until the bright purple buds of C. Coum, C. ibericum, C. repandum, and others appear in the month of December, in readiness to burst in the early days of the new year, throwing back their varied-coloured segments in a manner similar to the well-known florists' varieties now so abundant. Although, taken as a whole, these Cyclamens are perfectly hardy, and well able to withstand the rigours of our severest winters, they, like other hardy plants, have their particular likes and dislikes, preferring, as they certainly do, a partially shaded westerly or south-westerly aspect, and a loose calcareous soil. Both these conditions may be easily managed in the average of gardens; our substitute for a calcareous soil, and which we find answers admirably, is formed of two parts of old lime-rubble to one of well-decayed leaf-soil.

Perhaps the most interesting part of Cyclamen culture is the propagation of them from seeds, and we believe Mr. Atkins was the first to practise it extensively. Then came the crossing of C. Coum with C. ibericum, the result being a distinct and valuable gain to hardy flowers, in the forms known in gardens now as C. Atkinsii varieties. Both C. Coum and C. ibericum, when grown some distance apart from each other, reproduce themselves true from seed, and if grown in close proximity to each other, they hybridise freely, the seedlings showing endless variations, and these favour the parents from which the seed has been collected. In this manner many beautiful forms have been obtained since the time when Mr. Atkins raised his first hybrid, and which gains are not confined to the Coum group alone. C. neapolitanum, which annually seeds freely has been greatly improved by selection from self-sown seedlings, the variety of markings on and the size and shape of the leaf, and the intensity of the colours of the flower being remarkable. I should note one very important feature in these Cyclamen. The usual practice when planting is to put them all at about the same depth in the soil, carefully covering them so many inches, as in the case of bulbs; but this practice, which to a few species or varieties may not be hurtful, is death to others. In some few of these roots are produced both above and below, while in others roots are produced entirely from the base of the corm, and such thrive the best with part of the corm exposed above-ground; indeed, in damp situations the more exposed the corm is the better will be the chance of success. Though the plants require perfect drainage at the root, they seem to like plenty of moisture when growing, and periodical waterings afforded when the plants are most active are beneficial. Collectors of roots of Cyclamen would do well to send them home directly they are dug up, not keeping them back for a long period of time, and then expect them to turn out satisfactorily, for although without leaves, and apparently resting, they are actually forming fibres and buds for the following season; and we seldom find corms which have been a long time in a dry state that will vegetate freely when planted. Some nurserymen seem to treat them as they do bulbs, that is, lifting and keeping them in a dry condition during the season of sale—a very injurious practice in the case of hardy Cyclamens, and a very unsatisfactory one to the buyer, as the roots are nearly always spoiled for the first season, and we have known them to remain dormant for three or four years after a thorough drying, and all the time they would be sound and plump in appearance.

In gardens where corridors or cool conservatories have to be furnished with hardy flowers, the spring varieties of Cyclamen will be found of much use, as they do very well planted in pans, rapidly forming luxuriant masses, and producing, in the greatest profusion, flowers of various shades, and which last in presentable form until the season for bulbs begins.

C. neapolitanum, which is in part hederæfolium of the older botanists, is one of the most vigorous and free-flowering species naturalised in many parts of England, and perfectly at home, we are told, in Cornwall, where it may be found with corms more than 1 foot in diameter. The flowers are produced in early autumn before the beautifully marbled foliage, which is not fully developed until the latter end of

September or October—a fine plant for naturalising in woods, suitable positions on the margins, amongst some kinds of rocks, &c.

C. africanum is no more than a variety of the last-named, being connected with it by intermediate forms. It is a very shy flowerer, and requires protection in the winter.

C. græcum is also a form of C. neapolitanum, but the leaves and flowers are co-temporary, and with this exception, it is practically a form of that species.

C. cyprium, another autumn flowerer, is scarcely more than a distinct variety of C. neapolitanum, the leaves round, deeply cordate, and purple underneath, are marbled in much the same way, the segments of the flower are pure white with a purple blotch at the base.

C. Coum belongs to the spring flowering section, and is readily distinguished from all the others by its small orbicular, dark green unmarbled leaves, which are of a bright purple colour underneath. The flowers are small and produced, in such profusion as almost to hide the leaves.

C. ibericum, which, with C. Coum was the origin of the Atkinsii hybrids, is the most beautiful and useful of the vernal species. It is an extremely profuse flowerer, continuing in perfection all through the months of February and March. The leaves, which are larger than those of C. Coum, have distinct marking on the surface. The large flowers are of a bright purple-red colour, with a purple spot at the base. A native of the Caucasus. The Atkinsii forms vary from white to deep rose.

C. repandum is the plant confused with C. neapolitanum, both of which formed the C. hederæfolium of the older botanists. It flowers from March to May, the leaves, prettily marbled, purple underneath, very thin in texture, are produced with the flowers, which are rosy-red with a bright purple blotch at the base—a very pretty and desirable species.

C. cilicicum comes nearest to C. europæum, a well-known autumn-flowering species of great beauty producing its fragrant, bright red flowers from August to October. It grows well in exposed situations. All the species are fully described by Mr. Baker, in *Gardeners' Chronicle*, March 10, 1883, p. 307, and March 17, 1883, p. 340, with supplementary notes, April 14, 1883, p. 468. *D. D.*

FORESTRY.

(Continued from p. 507.)*

Natural Regeneration.—A fourth factor that has exerted, and is still exerting, an important influence upon our system of forestry, is game. There can be no doubt about this being *the* factor whose modifying influence is most felt at the present time; that of the others may be more powerful, but is less apparent. In the first place, the presence of ground game, to the extent one almost always meets with it here, precludes any great hope of success attending attempts at the natural regeneration of our woods and forests, or their artificial regeneration by sowing. Perhaps this is not universally true, but one meets with very few exceptions. One need not go the length of saying that the renewal of woodlands by natural or artificial sowing is always, or even generally, the best method to adopt; but where circumstances interpose a barrier to prevent these methods being employed in cases where they would otherwise be considered advantageous, then, of course, action is hampered, and ultimately some other system must be adopted, which, had the conditions been otherwise, would have been considered quite inferior. Where practicable, the natural regeneration system is the most rational and economical system, and gives the best results.

I will not encroach upon your time by adducing figures to prove that timber yielded by naturally renewed forests is better than that yielded by those which have been artificially planted; but one or two reasons may be indicated to explain why it is so. Where the parent trees are mature and healthy, very large quantities of seeds are shed annually or periodically, far more indeed than are actually required for restocking the ground. Although an immense number of the seeds perish, still a sufficient number germinate to produce a dense covering of young plants, and in this way the moisture in the soil is protected against evaporation, due to the direct action of the sun, or to drying winds. To the shading of the ground is also to be attributed an increase in its fertility, and nitrification is hardly of less importance in forestry than in agriculture. The beneficial effects upon tree growth, which accompany a complete shading of the ground, are far greater than would be considered possible by those who had not watched the result. This is a matter whose importance is fully appreciated on the Continent, where nothing in the whole management of forests is more insisted upon than the preservation of an unbroken umbrageous covering. In the middle period of the life of a forest, this is not difficult to accomplish; but in the earlier period, before the young trees have closed in on each other, as well as in the later period after extensive thinning has taken place, the ground can only be completely, and at the same time profitably, shaded by the process of natural regeneration.

Necessity for Shade.—Professor Marshall Ward, in a recently published work, mentions a case which came under his observation two years ago. In the district of Freising, in Bavaria, there is a Larch plantation about seventy years old. Twenty years ago the trees of this plantation were showing unmistakeable signs of lack of vigour—that is to say, they were making little growth, and were assuming a stunted appearance. Now, as is well known, the Larch has a comparatively small mass of foliage, and therefore cannot shade the ground to the same degree as many other trees. In the plantation in question, the plan was adopted of thickly stocking the ground with young Beeches, and this succeeded so well, that now all signs of premature ripeness in the trees have disappeared, and a new lease of life seems to have been granted to the plantation. Scarcely less important than the shading of the ground is the shading of the lower parts of the stems or boles of the trees, for by this means the undue formation of the inferior wood which is first produced in a growing season is prevented. By the ordinary methods of cultivation adopted in this country, the young trees pass the first fifteen or twenty years of their life in a semi-isolated condition—that is to say, about that number of years is necessary to enable the trees to close in on each other. During this time the influence of the sun on the lower parts of the stems, and on the roots, makes itself felt much sooner in each season of growth than would be the case were the stocking thicker and a close forest or plantation earlier obtained. By this means an undue development, of the so-called "spring-zone" in the annual wood-rings is brought about, and consequently the average specific gravity and quality of the resulting timber are much lowered. In addition to this, the trees do not possess such straight boles; the wood contains a much greater number of knots, especially those most undesirable ones called "loose-knots;" and the annual wood-rings are very much broader towards the centre than they are towards the periphery of the stems, and this condition, for many purposes reduces the value of the timber, besides predisposing it to ring-shake. Where practicable, the best means which can be employed to attain the desirable closeness in the early stages of the life history of a wood or forest are to be found in well-arranged systems of natural regeneration, or in artificial sowing. The much greater expense inseparable from the operation of stocking the ground as closely by planting as can be done by natural or artificial seeding, can never allow the former to be carried out with much hope of a profitable return. Of course, it need hardly be said that more careful attention must be given in its earlier stages to a naturally renewed wood, or to one renewed by sowing, than to an artificially planted one, or otherwise, the closeness of the young trees, which is so desirable in many ways, may prove to be a source of great danger. Thinning must begin earlier and be oftener repeated in a wood raised from seed, and a higher standard of excellency is demanded of the workmen if the process is to be properly conducted. To show the amount of care and attention bestowed upon the preservation of closeness in young woods, it may be mentioned that in many parts of the Continent it is a common practice to remove rings of bark from the trees which it is intended ultimately to thin out, so that they may gradually die off, and thus allow the neighbouring trees to close in on each other before the actual separation of the former from the ground. In this way the shading of the ground, as well as that of the young stems, is maintained as completely as is possible, without unduly retarding the process of thinning. Where regeneration by natural or artificial sowing is by any means prevented, the quality of the timber suffers not only in the earlier but also in the later years of the life-history of a wood. In this country one finds, generally speaking, little to complain of as regards the closeness of plantations during the middle period of their existence. After this, however, the state of things is usually very unsatisfactory, for storms and the hand of man have been busily at work interrupting the leafy canopy. Great gaps in the plantations become very common; indeed, it is nothing unusual to find the trees standing so far apart from each other that both the boles and the ground are very impartially shaded. The quality of the annual increments of wood is thus reduced, and great loss of soil, fertility, and moisture must result. In addition to these drawbacks, the surface is probably not even half stocked with trees, and consequently cannot be yielding half the rent of which it is capable. Were it possible, systematically, to make use of the process of natural regeneration, then the surface of the ground underneath the gaps in the overhead foliage would quickly be covered by a growth of young shade-bearing trees, which would not only preserve fertility and shade the lower part of the boles of the older ones, but would also ensure the surface being stocked with young trees when the last of the older generation were finally removed. By this mode of procedure one would find, instead of a bare surface whose restocking would be an expensive and difficult operation, a more or less complete stocking of young trees, which, at the most, would require only a little artificial assistance to make perfect. Thus the restocking would not only be effected cheaply and well, but an immense advantage would be gained in the amount of time saved. Although, under specially favourable circumstances, a partial restocking by natural means might be obtained, even were ground game fairly abundant, still that uniform and perfect distribution of the young plants, which is of so much importance, cannot be looked for.

Game.—Apart from the question of natural renewal of woodlands, we all know what a hindrance ground game interposes to their artificial renewal by planting. It is no uncommon experience for the young trees, with which the ground has been stocked to be entirely destroyed, not once, nor twice, but many times; and when this happens, it is almost too much to expect that the plantation will ever be a financial success. In a few years material may be destroyed, whose value is more than that of the land; and as this must be added to the capital sunk in the plantation, a satisfactory return can scarcely be looked for. Where measures for preserving the young trees from the attacks of vermin are adopted, the expense incurred falls also to be added to capital, thereby reducing the rate of interest ultimately to be obtained. It need not be surprising, therefore, that landlords find forestry an unprofitable department of rural economy, or that they confine their sylvicultural operations within narrow limits. We have seen, in particular, how ground game modifies systems of forestry, but considerations of game in general are accountable for still more. These frequently regulate, more or less, the shape, situation, and composition of plantations, as well as their general management. In order to afford shelter for game, excessive thinning is frequently resorted to, so that the trees may be induced to retain their lower branches. This is accompanied by all the evils which have already been indicated, and attention may be directed to one other which possibly applies more to dicotyledonous trees than to Conifers. When a plantation is over thinned, large crowns develop on the individual trees, and the increase of leaf-surface, combined with the less restricted action of the wind, causes greater expiration of water to take place than would occur were the crowns smaller and more sheltered. But if the soil be not of the best quality, it by no means follows that when the quantity of water raised from the soil to the leaves increases, so does the quantity of inorganic salts therein contained increase. What may, and, in fact, generally does, happen is, that the same amount of new plant food is merely contained in a larger amount of water; in other words, the solution becomes weaker. But in order to provide a passage for the extra water, the water-conducting channels in the wood must be enlarged without a correspondingly increased formation of wood resulting. This, then, increases the porosity of the timber, and consequently reduces its specific gravity and quality. The truth of this has been frequently demonstrated. Trees have been selected

* From the opening address of Dr. Somerville, B.Sc., at Edinburgh University, on October 23,

whose stems were clad with branches almost down to the ground, and one-half to two-thirds of their branches have been removed. In this state they have been allowed to grow for some years, and have then been felled and examined, when it has been found that the annual quantity of wood formed after pruning has been as great as, or even greater, than it was before the operation was conducted, while the specific gravity of the wood and its quality have been greatly raised. This clearly shows that large and heavy branches can often be advantageously dispensed with, for they themselves consume all the nutritive materials which they produce; so that, while adding nothing to the nourishment of the cambium of the stem, they lower the specific gravity of the wood there by keeping open an enlarged water channel. Other hindrances to a properly conducted system of forestry could be easily traced to the influence of game, but enough has probably been said to show that the game question, as affecting sylviculture, is a very pressing one. As is the case with most other great questions, so with this, it is much easier to point out the difficulties than to suggest means by which they can be overcome. Game, in this country, is not only a luxury, but also a marketable commodity, and, as such, yields an immediate return to the owner. Present sporting rents, although not so large as prospective forest returns, are usually infinitely more attractive, and are apt to prove too powerful for our forestal prosperity. Unless landowners can be convinced by actual demonstration of the superior advantages which well-managed woods have to offer, as compared with game-infested ones, it is exceedingly difficult to see how the present system can be altered. A few Government forests, to serve as models, would be extremely useful; but only if they were managed in a really systematic manner, by men selected, as our Indian forest officers are, for conspicuous ability. No good results can be expected to flow from the present management of the Crown forests of England. If examples are required to encourage us in bringing in a new *régime*, we have only to turn in any direction, except northwards, to find them. America offers us an interesting and instructive set of annual forest reports, and a Forest Board, bent on accomplishing great things. Many States of the Union have appointed Forestry Commissions, and vigorous action is being taken in the direction of forest conservancy. Australia shows, by her splendid official publications, that she is fully alive to the importance of her forests. Japan has, by the munificence of her offers, attracted to the far East some of the most highly trained foresters of Germany. Cape Colony has laid France under contribution to supply the skill necessary to place her forest system upon a proper basis. In all directions the same extraordinary activity is manifested. If we were at all an impressionable people, we could not have escaped being infected by the universal enthusiasm. We have been slow to cast off our cloak of indifference, but a few signs of activity are beginning to appear. Much good is expected to result from the promised Forest Board, and when it is established, plenty of scope will be found for its energies. *North British Agriculturist.*

The Orchid Houses.

That pretty and useful plant, Calanthe Veitchii, and other Calanthes, and Lælia autumnalis, L. albida, L. acuminata, L. anceps, &c., being in bloom or bud, and the varieties of Cœlogyne cristata, and Cattleya Trianæ, and various Dendrobes and other winter-blooming things being about to make their show, should remind the grower that in winter it is especially desirable to set aside a portion of a house where the plants actually in bloom may be placed together, in order to keep them clear of the chance wetting which may come to them if mixed with the other plants indiscriminately through the houses. Plants in flower preserve their blooms far longer in some houses than in others, but houses notoriously bad for keeping flowers may be made to accommodate the plants in bloom better, if a temporary staging of boards or trellises be arranged for the plants in the drier and airier part of the house.

In many cases Odontoglossums and other Orchids last in perfect beauty for a considerable time—often too long for the good of the plants, and, with rare species, especially, it is better to cut off the spikes after a reasonable time, and place them in water, in "Outram's flower-holders," which may be stuck in the pots containing the plants from which they are cut, where they will remain good almost as long as if left on the plants, while the plants are spared the effort of supporting them. *James O'Brien.*

The Flower Garden.

Planting Shrubs, &c.—The mild weather hitherto prevalent in the south has favoured planting. If the work in some instances has been delayed, it will be best postponed till February, it being now too late in the season for rootlets to form. I know that it is possible the plants would move well and start into activity just as kindly at the growing season as those moved a month ago, but preference should be given to planting in February. Should the work of planting be continued, the plants should be mulched heavily, and this is an essential condition to a kindly start—the ground about the roots having never been frozen. The only shrub planting this season which has been done here was that of planting a few Retinosporas on the sites of vases in the flower garden, which have hitherto been filled with flowering plants in summer. An experiment of this kind was made some three or four years ago, and with such marked success as to lead to its resumption. The aim was a saving in labour during the summer, and this has been attained without the loss of any single feature of interest or beauty. These fine trees assume naturally a pyramidal shape, and are far preferable to stucco and gay Pelargoniums, not to mention the heightened effect of the flower-beds by the contrast. We have also made free use of similar forms of trees in the herbaceous garden, but from a different standpoint, namely, that of winter effect. The evergreen species of hardy perennials are very few; hence the necessity for lighting up, as it were, in winter the bare places in this garden with evergreens.

Shrubberies.—Founded as these notes are on my own doings, it is difficult at times to avoid making reference to one's own practice, and not to appear egotistical; and when I write in the first person it is with the view of making my ideas clear to all. This preface is necessary, because, all that I am now writing in regard to shrubberies, is at the present time in actual operation. At one time my superfine ideas of neatness, were the cause of some injury to the shrubs, and also of a large amount of needless work—I mean the digging amongst shrubs, &c. For many years past, this practice has been discontinued, and to the evident improvement of the shrubs, and especially the Rhododendrons and Azaleas, whose roots are mostly near the surface. I am now content to rake out loose leaves only, and in lieu of digging, prefer rather to scatter a little fine soil over any loose material that would be likely to get blown about and litter the lawn and the walks. The margins of the clumps in which bulbs of various kinds are planted may, after the turf edgings are cut, have a light forking over, but in no case should this be done so deeply as to disturb the crowns or the roots of the plants; the first, and perhaps the second year after a shrubbery is formed, a light dig-over may prove helpful to growth, and a ready way of getting rid of weeds, but afterwards digging, and the consequent root-mutilation, ought to be avoided.

General Work.—This consists of clearing up, and stacking leaves; rolling, and levelling lawns; repairing, and re-gravelling walks and roads, applying protection to Tea Roses, and mulching spring flowers, which owing to the mildness of the weather have made sappy growth, and if left unprotected, will suffer greatly from frost. *W. Wildsmith, Heckfield, Hants.*

Fruits Under Glass.

Strawberries in Pots.—Plants of Black Prince, Vicomtesse Hericart du Thury, King of the Earlies, &c., should be prepared for forcing, "choosing those which possess one well-developed crown." Wash the pots, take off any loose soil there may be; water with lime-water to destroy worms; then top-dress the pots with loam and a very small quantity of Thomson's vine and plant manure mixed with it. Manures can be applied to better purposes at a later date, and when the fruits have set. Any early forcing-house, with a shelf near the glass and a temperature of 50°, will be a suitable place to start them in. Examine the pots regularly, see that the soil does not dry in their exposed position, and if there be signs of red spider on the leaves an immersion of the latter in solution of flowers-of-sulphur and water, or in a mixture of carbolic soap and water, will rid the plants of these destroyers.

Peach House.—As fast as the trees in the late houses shed their leaves, their pruning, cleaning, and top-dressing as advised for the early houses, should be attended to, doing also any transplanting or root pruning that may be needful. Full ventilation should be afforded all trees in the late houses, during mild weather. I cannot press too strongly on gardeners the fact that the borders at this time of the year should be examined, and watered if found to be thoroughly dry,

The early Peach house should be syringed morning and afternoon on fine days, giving air as the temperature rises in the morning, shutting up the house in the afternoon with sun heat, and syringing the trees with tepid water. A temperature of 50° may be reached, but do not hurry the process of forcing, for if the trees are young, and the shoots not thoroughly ripened, the wood buds will start in advance of the bloom buds, and the latter, as a consequence, will be weak and deformed. As soon as the pink tips of the blooms show, the syringing should be done very slightly, and then only on the morning of days which seem likely to be fine, so that the trees may get dry before night-fall; and when the flowers are fully expanded, it is better to confine the damping to the paths and walls only. Every opportunity should be taken of giving air at this stage, to strengthen and give colour to the blooms. *W. Bennett, Rangemore, Burton-on-Trent.*

The Kitchen Garden.

The Treatment of Seakale.—Continue to place, from time to time, the requisite quantity of roots in heat so that no break in the supply may occur. Plants in the open ground should be cleared of dead foliage and weeds, and the soil should be drawn up in ridges over the plants with the hoe. This will afford some protection from mice, and materially assist the process of forcing.

Horseradish. — This crop, if grown as was recommended in the calendarial directions afforded in these columns in the spring of this year, may now be lifted, and in doing so it is best to dig out a trench on one side of the quarter and fork out the roots in as entire a state as is possible, bearing in mind that every bit left in the soil will grow if close enough to the surface. The thin portions of the root should be broken off, and the usable portion reserved and laid in the ground in some handy place. The best pieces of the strong roots, that is the straight ones, should be put aside for planting later, and these sets may be prepared in bad weather. In doing this, the fibry parts should be well rubbed with a rough cloth, to prevent the development of roots, reserving about 1 to 1½ inches at the bottom of each untouched with the cloth. The sets should be cut into lengths of 9 inches, tied up in bundles and buried in the ground till planting time. The ground should then be heavily manured and trenched, burying the dung at the bottom.

Potatos.—The first lot of these, for forcing, should be put into boxes, at once, using leaf mould and charred soil, and placing the sets about 6 inches apart each way. Potatos may also be grown in 9 and 10-inch pots. In any case the plants should be kept close to the glass and given plenty of air, to prevent them drawing. A quantity of sets of the favourite varieties may now be spread out on cocoanut fibre refuse, in gentle heat, to start preparatory to planting them out in pits or hotbeds. *William M. Baillie, Luton Hoo.*

Mrs. Alpheus Hardy: Overheard at the Conference.—"Oh, ma, here's a bearded Chrysanthemum!" exclaimed a little girl at the Chiswick Conference the other day. "You should not say bearded, my love; you should call it hirsute." "Her suit, ma? I see it is named Mrs. Alpheus Hardy. Does she wear a hair suit?" "No, my child, of course not. I mean to say that the flower is hairy; that is the meaning of the word hirsute." "Well, ma, I can't see the difference between bearded and hairy. I am sure Mr. Barnum would be delighted to get this bearded lady for his great show. What a jolly bit of fun it would be."

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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THE GARDENERS' CHRONICLE,

Vol. V., Third Series, JAN. to JUNE, 1889.

W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

MONDAY,	DEC. 2	Dutch Bulbs, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	DEC. 3	Lilies, at Protheroe & Morris' Rooms. Plants, Roses, &c., at the City Auction Rooms, by Protheroe & Morris.
WEDNESDAY,	DEC. 4	Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms. Bulbs and Plants at Protheroe & Morris' Rooms.
THURSDAY,	DEC. 5	10,000 Lilium auratum from Japan, and other Bulbs and Roots, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	DEC. 6	Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	DEC. 7	Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—41°.2.

*** OUR ALMANAC.—Secretaries of societies would greatly oblige by forwarding to the Editor, for insertion in our Almanac, which will be issued with the first Number of the New Year, any information respecting the dates fixed for horticultural and botanical meetings and shows in 1890.

London Fog.

UP to this time, the dwellers in the metropolitan area have only experienced partial and temporary obfuscation. The real "London particular" has not as yet visited us this autumn, or if it has done so, it has been for a short time only, and over a relatively small space. Nevertheless, we have had enough to justify us in grumbling, and there is little reason to doubt but that within the next few weeks we may have further good opportunities of indulging in our national tendency. Those of us who are occasionally half choked and three-parts blinded by the combination of watery vapour, sulphurous emanations, and carbonaceous deposits, will experience no surprise that plants which, barring plebeian bacteria, and other low organisms, are more sensitive to adverse influences than we are, should suffer cruelly from these visitations.

Commercial horticulture has taken such enormous developments of late years that the question of fog, once a matter of inconvenience only, has now become of very serious financial importance. One of our leading nursery firms has met the difficulty by drafting off its infant Orchid population, raised with such difficulty, reared with such skill, pregnant with such promise, to the purer air of Slough. Others will follow suit; indeed, the enterprising builder is surely, and not very slowly, dislodging the nurseryman, and compelling him to seek quarters further afield.

No doubt removal into the country is the best preventative of the evil effects of fog, but it is not absolute—Brighton has its fogs!—and, moreover, it is not always practicable. Under these circumstances, it has appeared to the Scientific Committee of the Royal Horticultural Society to be desirable to gather precise information as to the nature and extent of the injury to plants; and to ascertain to which of the components of the fog, or to what special combinations of them, the evil influences are due. The chemists have done their part of the work; it is for the physiologists and horticulturists to do theirs. The Royal Horticultural Society, faithful to its programme of strengthening the foundations of horticulture, extending our acquaintance with its principles, and diffusing knowledge as to its practice, has just issued the following circular of enquiries, which it is to be hoped will serve to elicit much useful information. Incidentally, we should like to know whether any beneficial effect has been observed from the use of a screen or filter of cotton wool or of tiffany over the ventilators. The following is the text of the circular:—

"SCIENTIFIC COMMITTEE.

"The members of the above Committee will be much obliged if you will kindly reply, as far as you are able, to any or all of the following questions on the subject of 'The Effects of London Fogs on Cultivated Plants.' In order to render the information as practical and as accurate as possible, it is desired that the experience of the current season only be utilised. Under 'General Observations,' any special experiences of recent years may be entered to complete the subject. Fresh specimens of plants, showing injury caused by fog to either flowers or leaves may be sent for examination—accompanied by full particulars—to Dr. D. H. SCOTT, F.L.S., Normal School of Science, South Kensington, S.W.; or, to Dr. FRANCIS OLIVER, F.L.S., Royal Gardens, Kew. It is desired that the returns be made up to the end of March, 1890, and then returned to the Secretary, Royal Horticultural Society, 117, Victoria Street, S.W.—W. WILKS, Hon. Secretary, Royal Horticultural Society.

"EFFECT OF LONDON FOGS ON CULTIVATED PLANTS.

"*Observations during* 1889-90.

I. On foliage.
(i.) Young leaves.
(ii.) Matured leaves.

II. On flowers.
(i.) Buds only.
(ii.) Expanded flowers.

III. What species of plants appear to suffer most from London fogs? In what respects do they suffer, and are you aware of any methods by which these can be mitigated?

IV. In any particular case of severe fog have you observed any difference in effect in the case of plants under glass and in the open air?

V. Are the injurious effects of fog, as far as your experience goes, increasing in London and the neighbourhood (*a*) in intensity, (*b*) in frequency?

VI. In any case of severe and prolonged fog, do you attribute the injurious effect to mere want of light, or to the presence of injurious components of the fog?

VII. Have you observed any difference in the effects of fog in successive months of the year?

VIII. General observations.

Name.....
Address.....
Date .....

MR. STANLEY.—How the accounts just received will make the botanists' mouths water! *Semper aliquid novum ex Africa!* What possibilities in the way of strange Aroids, Nepenthes, Orchids, Cycads, Palms, Ferns from the forests! What interest in investigating the flora of those snowy sub-equatorial Alps. What are the plants that clothe them like? How did they get there? Where did they come from? Of what use are they likely to be? Forests of Bamboo, and above them Heaths 20 feet high, Violets, Bilberries, and Brambles are mentioned. What are the Conifers like? Is there, perchance, a plant to be discovered there with virtues comparable to those of the Andean Cinchonas? Are our gardens likely to be enriched with any startling novelties? These and a score of similar questions suggest themselves in reading the brief statement of the intrepid explorer. As for the forest which Mr. STANLEY describes so graphically, it is but a fragment of that vast forest which, speaking generally, belts the entire globe in the equatorial regions, and throughout which the conditions are so nearly uniform that the flora is correspondingly similar in the main though different in detail:—

"You know," says STANLEY, "that all the stretch of country between Yambuya to this place (the south end of the Victoria Nyanza) was an absolutely new country except what may be measured by five ordinary marches. First, there is that dead white of the map now changed to a dead black. I mean that darkest region of the earth confined between E. long. 25° and E. long. 29·45°, one great, compact, remorselessly sullen forest—the growth of an untold number of ages, swarming at stated intervals with immense numbers of vicious, man-eating savages and crafty undersized men, who were unceasing in their annoyance; then there is that belt of grassland lying between it and the Albert Nyanza, whose people contested every mile of advance with spirit, and made us think that they were guardians of some priceless treasure hidden on the Nyanza shores, or at war with EMIN PACHA and his thousands. A Sir PERCEVAL in search of the Holy Grail could not have met with hotter opposition. Three separate times necessity compelled us to traverse this unholy region with varying fortunes."

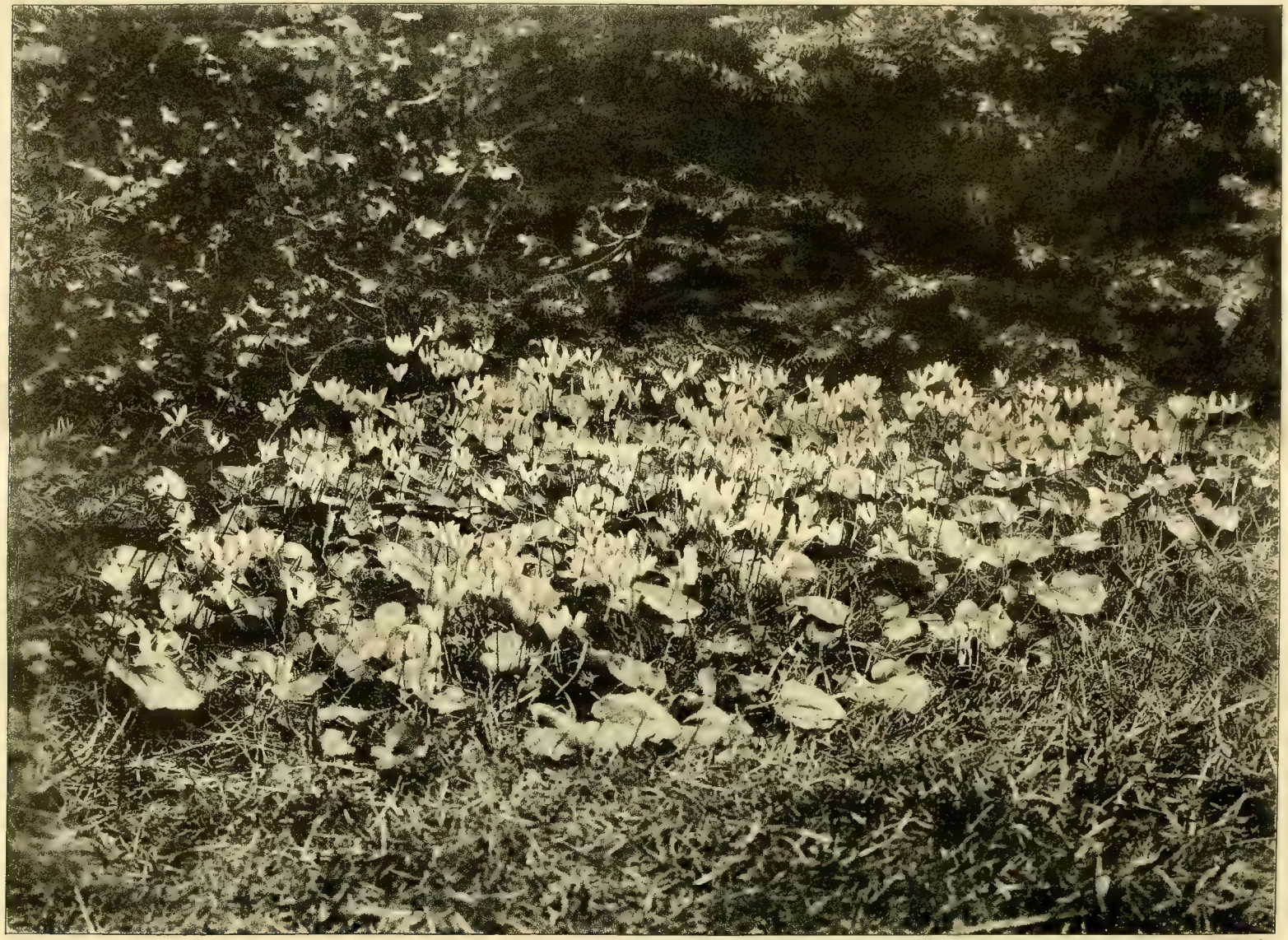
And the botanists are not without hope that some of their longings may be fulfilled, for EMIN PASHA, in his letter to Dr. SCHWEINFURTH, expressly mentions the plants he has collected for his friend, than whom no one is likely to make better use of them.

LINNEAN SOCIETY.—At the evening meeting, to be held on December 5, at 8 P.M., the following papers will be read:—1. "Life History of a Stipitate Fresh-water Alga," by G. MASSEE; 2. "On the Anatomy of the Sandgrouse," by G. SIM, A.L.S.

THE BOTANICAL SOCIETY OF EDINBURGH.—Another gratifying illustration of the circumstance that the claims of horticulture as a department of botany are becoming more generally recognised, is afforded by the election of Mr. R. LINDSAY, the Curator of the Royal Botanical Gardens, as President of the Botanical Society of Edinburgh for the year next ensuing. Mr. MALCOLM DUNN is one of the vice-Presidents.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—A concert in aid of the funds of this Institution was given at Leasgill Athenæum, near Milnthorpe, Westmoreland, on the 4th inst., under the management of Mr. ROBINSON, Gardener to Miss WOOD, Heversham, Milnthorpe. The clear sum of £7 7*s.* was realised, and has been forwarded to the Secretary.

ARGAN OIL.—The Argan tree (Argania Sideroxylon), the forests of which are described as forming an interesting and peculiarly characteristic feature in the landscape of the neighbouring districts of Southern Morocco, is well known for the quantity of oil which is yielded by the small kernels contained in the hard bony fruits. This oil is of almost universal use in the country where the plant grows, both for lighting and cooking purposes. The rank smell and taste



"INK PHOTO. SPRAGUE & Co 22, MARTINS LANE, CANNON ST. LONDON E.C.

GROUP OF CYCLAMEN AT SPROWSTON.

which characterise the raw oil disappear entirely at a certain degree of heat, so that it imparts no disagreeable flavour whatever to food properly cooked with it.

The Cultivation of Bird-seed in Morocco.—In connection with the trade in bird-seed with Morocco, a curious fact is stated that the seed is never sown apart, or any particular attention paid to its special cultivation. It is sown with Wheat, and when reaped and thrashed, is separated by the country women in sieves; the reason for this is, that there exists a general superstition among the Moors that in unusually wet seasons the Wheat is converted into bird-seed, hence the reason why they cannot be induced to sow it apart. Of course, if this were done, the crops would be much more abundant, and the quality better, the soil in many parts of the country being particularly suitable for this class of seed.

Sir Julian Goldsmid.—Those concerned in the Gardeners' Orphan Fund and its popular President, will be interested in learning of the marriage, on the 26th inst., of his eldest daughter at the West London Synagogue, Upper Berkeley Street, to Mr. Francis Hoffnung, Hawaian Chargé d'Affaires.

Oxford.—The University has conferred the degree of D.C.L., on Mr. Alfred Wallace, the celebrated traveller and naturalist. To his efforts it is that the doctrine of natural selection or of the most "successful adaptation" has obtained so firm a hold over men's minds. Working independently, the one of the other, Darwin and Wallace arrived at the same conclusions, and the general summary of their respective views was read to the Linnean Society on the same night.

The Clyde Fatality.—The appended list of additional sums promised and received up to date brings up the total to rather more than £400:—J. Percy Severn, Esq., £2; Messrs. B. S. Williams & Son, £5; H. Marks, Esq., £2 2*s.*; Mr. F. Boggis, 2*s.* 6*d.*; Mr. Carlton, 2*s.* 6*d.*

Gardeners' Orphan Fund.—On Wednesday, the 20th inst., a brilliant audience assembled in the Criterion Hall at Worksop, on the occasion of a concert given on behalf of the Gardeners' Orphan Fund. The concert was under very distinguished patronage, including that of the Duke and Duchess of Portland, Duke and Duchess of Newcastle, Earl and Countess Manvers, Viscount and Viscountess Galway, Mr. F. J. S. and Lady Gertrude Foljambe, and Sir Henry Watson. Under these conditions the concert was an ensured success, and over 200 reserved seat tickets were sold a week before the concert, and a balance of £57 5*s.* 4*d.* will, we learn, be handed over to the Secretary of the Fund.

National Rose Society.—The annual general meeting of the above Society will be held, by the kind permission of the Horticultural Club, at their Rooms, Hotel Windsor, Victoria Street, Westminster, on Wednesday, December 4, at 3.30 p.m., for the purpose of receiving the report, electing the officers and committee for the ensuing year, confirming or otherwise the arrangements made by the general committee for the exhibitions of 1890, and the transaction of other general business. The annual dinner will take place afterwards at six o'clock.

Cambridge.—The Frank Smart studentship in Botany, at Gonville and Caius, of the value of £90 will be vacant at Lady Day, 1890.

Gales, Snowstorms and Frosts.—After a period of unusual mildness, frost has set in—not very severely, but sufficient to make us exclaim, "How cold it is!" and to induce the careful ones to see that no precaution has been omitted in the garden. The first snow fell in London on the 26th.

Tiverton Chrysanthemum Society.—The annual exhibition was held in the Drill Hall on November 21. There was a marked improvement in the growth of the trained plants and groups. Cut flowers, too, were more numerously represented, also of superior merit. Fruit was very fine and clean, and of beautiful colour. Mr. Lucas, gardener to J. Marshall, Esq., Tiverton, took the three-guinea Cup for eighteen Japanese and eighteen incurved varieties, with an excellent lot. Mr. Barnes, gardener to J. C. Daniel, Esq., Stoodleigh Court, Tiverton, was a good second.

The ex-Emperor of Brazil.—With political matters we have, of course, nothing to do, and the Brazilians may, for ought we know, have adopted the wisest course under the circumstances. Be this as it may, it is pretty certain that they can never expect to be governed by so enlightened and cultured a ruler as His Majesty Dom Pedro. The ex-Emperor belongs not only to one of the great reigning families of the world, but he forms one of that far more important class—the aristocracy of intellect, and takes his place in the French Academy side by side "with the immortals," not merely by compliment, but of right.

The Fraud on Mr. Chamberlain, to which we referred in our issue for Feb. 2, will doubtless be in the memory of some of our readers. A man who represented himself to be introduced by an American acquaintance of Mr. Joseph Chamberlain's, after obtaining money at Birmingham, came to St. Albans and victimised Mr. Sander in the pretended purchase of a large quantity of Orchids. We learn that this impostor has at last been brought to book. It appears that he came from America to London, where he introduced himself to journalistic circles, then he proceeded to Egypt during the Tel-el-Kebir campaign as, he said, a correspondent, practising his swindling propensities all the time. At the conclusion of the campaign, he appeared in Paris, as the Ambassador of Tewfik, the Egyptian Khedive, and lived in luxuriance as such at the expense of a hotel keeper. It was after leaving Paris that he appeared at Birmingham and St. Albans. He also posed as the commander of Lord Brassey's yacht, the *Sunbeam*, when at Greenock, and at Ballymena as an agent of the War Office. These are a few chief feats of this remarkable impostor, who has in various parts of the country impersonated several of the eading journalists, and with profit to himself till at Boston, where he was "Mr. Melton Prior," the well-known artist. He was arrested for uttering a forged bill, and sentenced at Manchester to ten years' penal servitude. On him were found about thirty blank bills of exchange, and several cheques with forged signatures of London journalists, for the use of which he was doubtless awaiting a suitable opportunity.

Wood of Zizyphus vulgaris in Italy.—There is a large demand for wood in Florence for the purposes of carving, partly for picture-frames, but chiefly for furniture. Besides Walnut from the province of Modena, Pear, Alder, Poplar of different qualities, Maple, Cypress, and Fir, the wood of Zizyphus vulgaris, known as giuggiola, is much used for fine work. The chief introduced woods are Ebony, Rosewood, and Mahogany.

Ealing Gardeners' Association.—A successful concert (540 persons being present) in aid of the Gardeners' Orphan Fund, was given under the auspices of the Gardeners' Association in the Victoria Hall, Ealing, on the evening of the 20th inst.

L'Annuaire du Jardin.—M. Godefroy-Lebeuf, the well-known horticultural journalist and nurseryman, of Argenteuil, near Paris, will shortly publish, under the above title, an Annual, evidently suggested by *The Garden Oracle* and others of the same class. It will be divided into two parts, the first dealing with railway charges, postal and telegraph services to various parts of the world, horticultural legislation, and laws relating to the Phylloxera; the second part will contain an alphabetical list—arranged in departments—of all horticulturists, seedsmen, and market gardeners in France. M. Godefroy-Lebeuf makes a plaintive statement respecting the apathy of the persons to whom he addressed a brief series of questions respecting themselves, and for their own benefit: out of 200 just seven were answered; "Eh, bien," indeed.

The Rogers Family.—We referred last week to the municipal honours paid to Mr. W. H. Rogers, of Southampton. Curiously enough, there has just been issued from a local press a little and entertaining book entitled the *Life and Memoirs of John Rogers*, who was born in 1767, and may be said to have been the founder of the present family, and nursery business, having actively assisted his son, the then Mr. William Rogers, father of the present alderman, in the nursery established through their instrumentality. The existing Red Lodge Nursery was established in 1828, being then a tract of ordinary common land; the original head retiring from actual pursuits when very aged, and even then fretting from a life of comparative indolence, wrote in his eighty-fourth year a little work entitled *The Fruit Cultivator*, the reading of which just now could hardly be other than exceedingly interesting, and in his eighty-sixth year the *Vegetable Cultivator*, then held to be standard works on gardening. Finally this "grand old gardener" sank peacefully to a well-earned rest in his ninety-first year, on November 9, 1842, and was buried in his native town, where his long life had been so worthily spent.

Cucumbers in Long Bearing.—*Apropos* of this subject, we read in these pages, May 9, 1857, in the report of the Royal Horticultural Society's meeting on May 5, that Mr. Frost, gardener to E. L. Betts, Esq., Preston House, Aylsford, showed two Cucumbers, each fully 22 inches in length. They were cut from a plant that had been in bearing since July of the previous year.

Spare the Sparrow.—A good word has at last been said for the sparrow in America (says *Nature*). In England this impudent bird is decidedly popular, but our kinsfolk in the United States consider him an unmitigated nuisance. Captain W. F. Segrave, British Consul at Baltimore, writing on the subject in a recent report, warns the Americans that their policy in waging war against the sparrow may prove to be a mistake. "The great 'blizzard' of March, 1888," he says, "destroyed multitudes of sparrows, and, as a consequence, the past and present summers have seen a vast increase in grubs and caterpillars. Already in many large cities the inhabitants, through the public press, are complaining of the destruction of their ornamental trees, the diminished number of sparrows being unable to keep in check the vast increase which has taken place in noxious grubs, worms, and caterpillars.

Two Rare Horticultural Books.—In the unrivalled collection of rare and interesting books collected together by Mr. Bernard Quaritch, the *doyen* of the trade, we recently saw a copy of one of the most remarkable botanical books ever published. Lord Bute's *Botanical Tables*, containing the different families of British plants, distinguished by a few parts of fructification, ranged under a synoptical method, appeared in nine volumes, imperial folio, in or about the year 1785. This exceedingly rare work is said to have cost Lord Bute, at whose sole expense it was engraved and printed, the enormous sum of £12,000. Only twelve copies were ever printed, the plates being then destroyed, according to a writer in the *Gentleman's Magazine* for 1792, p. 285. Like precious stones and unique paintings, the whereabouts of all very rare books is pretty well known In the present instance the twelve copies, according to a note in Sir Joseph Banks' copy, now in the British Museum, were thus disposed of: Lord Bute (2), the Queen, Empress of Russia, Sir Joseph Banks M. de Buffon, Lady Betty M'Kenzie, Lady Ruthven, Lady Macartney, Duchess of Portland, and Mrs. Barrington each had one. One of Lord

Bute's copies came into the possession of Mr. Tighe, and at the sale of his library in March, 1798, fetched £120. The late Queen Charlotte's copy was sold at the sale of her library in March, 1819, for £119, and was purchased for the King's private library. Buffon's copy is in the Bibliothèque Nationale, Paris. The Duchess of Portland's copy came into the possession of the late Dowager Marchioness of Bath, and Lady Macartney's copy is in the possession of Lord Wharncliffe. The other rarity deals with landscape gardening. It was published by Thomas Rowlett, whose shop was close to Temple Bar, about 1640. It is entitled "Le Jardin de Wilton, construict par très noble et très puissant Seigneur Philippe Comte de Pembroke et Montgomerie, Baron de Cardif, Seigneur Parr et Rosse de Candall," &c. The engravings are by Isaac de Caus. Mr. Quaritch states that of this extremely rare volume it is believed that no perfect copy has hitherto appeared in the market. The British Museum example has the title and engraved description in MS., and the copy which appeared at the Bindley Sale, and which sold for £56 10*s.* was also imperfect, and all the plates were mounted. It may be pointed out that the title is engraved at the top of the large folding plate, 3—4, and has been, in the Museum copy, cut off probably by some careless binder.

THE PROGRESS IN BOTANY.—In celebration of its twentieth anniversary, our esteemed contemporary *Nature* published an article on the progress of science—to which it has itself contributed so greatly—during the period of its existence. The following remarks relating to botany will be read with interest:—"In botany, twenty years ago, the teaching in our Universities was practically sterile. In one of our earliest numbers, Professor JAMES STEWART defended with some vigour the propriety of entrusting botany to a lecturer at Cambridge, who was also charged with the duty of lecturing on electricity and magnetism. It is startling to compare a past in which botany was regarded as a subject which might be tacked on anywhere, with its present condition, in which there is scarcely a seat of learning in the three kingdoms which is not turning out serious work. But it would be a mistake to suppose that English modern botany has developed a character of its own in which the indirect influence of Darwin's later work can be not indistinctly traced. Darwin, by his researches on insectivorous plants and plant movements from a purely biological point of view, prepared the way for this. Gardiner followed with a masterly demonstration of the physical continuity of protoplasm in plant tissues. Mr. F. Darwin has started what is virtually a new conception of the process of growth. On the whole, English botanists have shown a marked disposition to see in the study of protoplasm the real key to the interpretation of the phenomena of plant life. The complete analogy between the processes of secretion in animals and vegetables, established by Gardiner, and the essential part played by ferments in vegetable nutrition, illustrated by Green, are examples of the results of this line of inquiry."

SHELTER FOR FRUIT PLANTATIONS.—We take the following summary of opinions gathered from various quarters from the *Bulletin of the Agricultural Department*, Cornell University:—

"1. A windbreak may exert great influence upon a fruit plantation.

"2. The benefits derived from windbreaks are the following: Protection from cold; lessening of evaporation from soil and plants; lessening of windfalls; lessening of liability to mechanical injury of trees; retention of snow and leaves; facilitating of labour; protection of blossoms from severe winds; enabling trees to grow more erect; lessening of injury from the drying up of small fruits; retention of sand in certain localities; hastening of maturity of fruits in some cases; encouragement of birds; ornamentation.

"3. The injuries sustained from windbreaks are as follows: Preventing the free circulation of warm winds and consequent exposure to cold; injuries from insects and fungous diseases; injuries from the encroachment of the windbreak itself; increased liability to late spring frosts in rare cases.

"*a.* The injury from cold, still air is usually confined to those localities which are directly influenced by large bodies of water, and which are protected by forest belts. It can be avoided by planting thin belts.

"*b.* The injury from insects can be averted by spraying with arsenical poisons.

"*c.* The injury from the encroachment of the windbreak may be averted, in part at least, by good cultivation and by planting the fruit simultaneously with the belt.

"4. Windbreaks are advantageous wherever fruit plantations are exposed to strong winds.

"5. In interior places, dense or broad belts, of two or more rows of trees, are desirable, while within the influence of large bodies of water thin or narrow belts, comprising but a row or two, are usually preferable.

"6. The best trees for windbreaks in the north-eastern states are Norway Spruce, and Austrian and Scotch Pines, among the evergreens. Among deciduous trees, most of the rapidly growing native species are useful. A mixed plantation, with the hardiest and most vigorous deciduous trees on the windward, is probably the ideal artificial shelter belt."

CATALOGUES.—The large number of Trade Catalogues that we receive, and their general similarity, preclude us from doing more than announce their publication. But whilst in order to avoid semblance of injustice to some, we are thus compelled to restrict our notice of these publications, there are occasional exceptional cases in which it is desirable to break the rule, particularly as no injury is thereby done to others. Under these circumstances we may note the Catalogues of the Royal Palm Nurseries of Manatee, Florida, U.S.A., containing lists of tropical and semi-tropical fruit trees cultivated for sale by Messrs. REASONER BROTHERS. The catalogue contains varieties of Bananas, Oranges, &c., unknown in this country, but which may be of service in many of our Colonies. For similar reasons we note the annual catalogue of the Highlands Nursery, devoted to the plants of the Southern Alleghany Mountains, and under the proprietorship of H. P. KELSEY, Highlands, Macon County, North Carolina, and Linville. The Catalogue of the National Arboretum at Zöschen, near Merseburg, Germany, under the Direction of Dr. DIECK, is noteworthy for various novelties, and remarkable trees and shrubs.

PRESENTATION TO MR. A. D. CHRISTIE.—On Thursday, the 21st inst., Mr. A. D. CHRISTIE, who was for many years Head Gardener at Warwick Castle, but who has now entered upon an engagement as Gardener at Ragley Hall, under the Marquis of HERTFORD, was presented at the Court House, Warwick, with a purse of gold and an illuminated address, by residents of Warwick, with whom he has so long been associated. The address had been beautifully illuminated, and was framed with Oak from the old College. The purse contained £22 10*s.* in gold. Mr. CHRISTIE, in a few words, suitably acknowledged the presentation.

LIST OF FAMOUS HORTICULTURISTS.—In the *Journal of Botany* for August and September we find the following:—

"LEE, JAMES (1715—1795): b. Selkirk, 1715; d. Hammersmith, 1795. Gardener at Syon & Whitton, Nurseryman, circ. 1745, with Kennedy at Hammersmith. Had collectors in America and at the Cape. Introduced Fuchsia coccinea, *Introduction to Botany*, 1760; ed. 2, 1765; ed. 3, 1776; ed. 4, 1794, with portr. *Pritz.*, 179; *Jacks.*, 571; *Gard. Chron.*, 1881, ii., 330; Loudon, *Arboretum*, i., 78. Leea, L.

"LETTSOM, JOHN COAKLEY (1744—1815): b. Little Van Dyke, Tortola, 22nd Nov. 1744; d. Sambrooke Court, Basinghall Street," 1st Nov. 1815; bur. Little Coleman Street, Bunhill Row. M.D., Leyden, 1769. LL.D., Camb., Mass., &c. L.R.C.P., 1770, F.R.S., 1771. F.L.S., 1797. Had a bot. garden at Grove Hill, Camberwell. 'Natural History of the Tea-tree,' 1772. 'Naturalists' Companion,' 1772, 'Hortus Uptonensis,' 1783. *Pritz.* 183; *Jacks.* 572; 'Life,' with portr., W. Skelton, pinx. & sculpsit, 1817; Munk, ii. 287; Nichols, *Lit. Illustr.* ii. 657. with port.; 'Memoirs of S. Fothergill, by G. Crosfield; *Cott. Gard.* v. 79, Portr. engr. T. Holloway. Lettsomia, Ruiz. & Pav.

"LINDLEY, JOHN (1799—1865): b. Catton, Norfolk, 5th Feb, 1799; d. Turnham Green, Middlesex, 1st Nov., 1865; bur. Acton. Ph. D., Munich, 1832. F.L.S., 1820. F.R.S., 1828. Assistant in Banks Library, 1819. Garden clerk, Chiswick, 1822. Assistant-Sec. Hort. Soc., 1830; Sec. 1858. Prof. Bot. Univ. Coll., London, 1829—1860. Præfectus Hort., Chelsea, 1836—1853, Editor *Bot. Register*, 1826; *Gard. Chron.*, 1841, 1865; *Monographia Rosarum*, 1820; *Monog. Digitalium*, 1821; Loudon's *Encycl. of Pl.*, 1822—1829; *Synopsis of Brit. Flora*, 1829; *Fossil Flora*, with Hutton, 1831—1837; *Ladie's Botany*, 1834; *Vegetable Kingdom*, 1845. Herbarium at Cambridge; Orchids at Kew. *Pritz*, 186; *Jacks*, 573; *Proc. Linn. Soc.*, 1865—6, lxxiii.; *Proc. Roy. Soc.*, xv., xxx.; R.S.C., iv., 31; Lasègue; *Gard. Chron.*, 1865, 1058, 1082; *Journ. Hort.*, ix. (1865), 381. Portr. [oil painting at Roy. Hort. Soc.] in Ipswich Museum series. Copy at Linn. Soc., and at Kew Portr., *Men of Eminence*, 1866 [and *Gard. Chron.*, 1866]. Lindleya, H.B.K.

PUBLICATIONS RECEIVED.—*Scientific Papers of Asa Gray*, selected by C. S. SARGENT. Two vols. (London: MACMILLAN & Co.). — *Life and Reminiscences of John Rogers*, by Himself. (Southampton: H. M. GILBERT, 26, Above Bar).

ALLOTMENT GARDENS.

LATE in the spring of this year the South Peckham Liberal Club found new quarters in an old-fashioned house on the Rye, which had a very extensive garden well stocked with fruit trees. This garden was let to members in patches, and cultivated by them. Good Friday was the first day on which work was done, and there was a great deal of rubbish to be cleared away before any seed could be sown. The members who paid for their plots were mostly working-men, following different avocations, and among them were one or two working gardeners. Of course some members were wiser or more fortunate in their selection of plots than others, and some were more constant in their attention to their little gardens. It may be worth while now to give a brief statement of the results obtained from some of these plots. Plots 1, 2, and 3 were held by Mr. F. Allen and Mr. G. Mercer as partners. Plot 1 was 11 yards by 3; plot 2, also 11 yards by 3; and plot 3, 11 yards by 10. From these have been taken 56 bundles of Turnip Radishes, 4 dozen Lettuces, 1 peck of Onions, 1 bush. of Carrots, 2½ bush. of Potatos, 1 bush. of Beans, 1 bush. of Turnips, 45 Vegetable Marrows, and 24 lb. of Tomatos, and the men have on the ground at present 300 various Cabbages. From plot No. 12, occupied by Mr. Patman, and the extent of which was 10 yards by 4 yards, were taken 4 bushels of Potatos, 2 pecks of Beans, and 1 of Peas, 1 bushel of Pears, and a nice yield of Raspberries. Plot No. 4, Mr. Newman's, 10 yards by 4 yards, yielded 3½ bushels of Potatos, 3 bushels of Pears, 1 peck each of Beans and Onions, and there are at present on the ground 250 Cabbages. No. 4 plot, Mr. Marchant's, also 10 yards by 4, has yielded four dozen Lettuces, a half-bushel each of Beans and Potatos, and there are now about 200 Cabbages on the ground. From plot No. 13, Mr. Potter, the Club steward, has taken ten marrows, 3 bushels of Beans, three big bundles of Rhubarb, half a bushel of Potatos, 100 Cabbages, and he has another 100 in the ground. It ought to be added that the Club and its grounds have proved very attractive to the members of working-men's clubs in all parts of London, and there has been a constant succession

of visitors. Several very interesting garden parties and open-air meetings have been held in the garden during the season.

GRAFTING ON CUTTINGS.

This matter is touched upon in the October number of the *Garten and Blumenzeitung*, its advantages over the grafting of rooted plants with scions in a state of rest, and the good results of the method as employed by the French Vine growers in grafting European varieties of the Vine on American stocks being alluded to. It is well known that grafts unite with less loss in the case of some species of plants when they are placed on unrooted cuttings; the rooting of the latter and the union of graft and stock taking place simultaneously. It is the method commonly pursued with Correa varieties, using C. alba as the stock; with Clematis on C. vitalba, and with Ampelopsis Veitchi on the common Virginian Creeper. Examples are given of grafting weeping Elder on strong one-year-old matured shoots or suckers of the common Elder. These should be chosen of at least 6 to 7½ feet in length, cut across just under a joint, and potted in 6-inch pots, the best time for the operation being the commencement of the winter. The soil should be covered with moss, and the shoot secured to the pot with string. The pots are then placed in a shed to which frost has no access, the grafts being placed in the stock by saddle-grafting in February, and secured properly with binding and grafting-wax. The cuttings are then brought into a house with a temperature of 65° to 70°, but which is not kept very humid, the stocks being sprinkled with a syringe but two or three times daily, and the young growth diligently cut off them, so as to prevent the drying up of the scion. In the same way it is stated standard Gooseberries may be obtained on long shoots of Currants, or Ribes aureum and R. palmatum.

As soon as union has taken place between stock and scion, as will be seen from the growth made by the latter, the plants are by degrees accustomed to a cooler air and ventilation, and stood out-of-doors in May. The pots may in summer be sunk in the earth, the latter being mulched with litter. In autumn the plants may be planted in the nursery. The above method of grafting is recommended for any plant which makes roots freely.

CHRYSANTHEMUM SPORT.

We give at fig. 86 an illustration of the Chrysanthemum Source d'Or, which was obligingly sent us by Mr. Maries, of Lytham, and referred to last week on p. 599. One-half of the flower-head consisted of yellow, flat, strap-shaped florets; the other of dark golden-bronze florets, revolute at the edges. Such cases are always interesting, and are susceptible of various interpretations. That which seems most plausible in this case is, that the appearance is due to the unmixing or separation of previously blended components. In the case of the Chrysanthemum, which has been crossed, and re-crossed, and crossed again, for an untold number of years, it is evident that the breed must be very mixed indeed, and there can be little wonder if a "return to first principles" occasionally occurs.

This theory is not susceptible of actual proof in the Chrysanthemum. We are glad, then, to call in support the witness of Messrs. Veitch's Calanthe, shown at fig. 87, p. 633. The history of this is known beyond dispute; it is a hybrid between C. rosea and C. vestita. In the flower in question, the two heretofore combined elements are neatly separated. Assuming the explanation now given to be a correct one, there are still many problems left unsolved. What has induced the separation at a particular time? Why does the change occur on one or two particular shoots and those only? Why does the same change occur in the same variety at the same time in widely different localities? Ah, why? It may seem disheartening, if not futile, to some people to seek the explanation of such things, but whether we fail in our main object or not, the search is always full of interest to those who keep, or try to "keep an open mind," and something of interest and value is sure to crop up to reward the rational curiosity of the searcher after truth.

HOME CORRESPONDENCE.

☞ *Correspondents will greatly oblige by sending early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

THE TIMES OF THE SINGING OF BIRDS, NOVEMBER 23, 1889.—Heading and date are quite correct, and more need hardly be added to prove the abnormal character of both. For a full week we have many sweet notes, the robin and hedge-sparrow seem to have led off; the thrushes and other singing birds followed with somewhat hoarse and faltering notes, and for several days there has been the full-voiced song at morning and eventide, just like April, as my son of seven pithily puts it. A curious incident happened in the beginning of the week. A thrush struck up his note, near to a dove-cot and aviary, about four in the afternoon; all the other birds near joined in, making the chorus as full as might be under the circumstances. Their efforts, however did not seem to have satisfied the pigeons of various breeds, nor the birds in the aviary. Here the former, after a few flights round, added their various cooings and mutterings; while the birds, including several of the parrot tribe, broke in with their chattering, screaming notes. The effect was most ludicrous. Even the thrush, which by this time had been joined by a blackbird and other more or less distinguished singing birds, seemed rather taken back through the dissonance. But surely never before were so many species of birds deceived through the mildness of a dull November day into the belief that the spring had come. The sudden fall in the thermometer today (November 26) and two rather heavy snowstorms, have hushed every note, and a wintry silence and desolation reign over the earth. In fact, the weather has taken a sudden plunge from April into December. In bidding farewell to the singing birds for many a long and dark day, we can but thank them gratefully for a week's sweet melody in good time, though strikingly out of season. *D. T. Fish.*

HARDY PRIMROSES.—We are getting a very favourable time for these hardy garden flowers. Only where the soil was very dry did the foliage suffer, for thrip follows upon drought, and once in evidence the leaves disappear rapidly. Of that defect very little was seen this year, for the foliage has been well retained, and is now green and vigorous. How very different has been the condition of the Primrose family to what was seen a few years ago, when hot dry seasons killed them wholesale. I have long given over attempts to increase varieties by division. Rarely can such plants be induced to thrive beyond two or three years, for they never root deeply, as seedlings do. The saviour of myriads of plants with me through hot weather, and when the stiff clay soil is baked hard, is found in the practice of sowing seeds almost as soon as ripe, and getting them strong to dibble out in the spring. I have thousands of such seedlings now in the seed-beds, and lifted and dibbled out into the open ground in rows some 12 inches apart towards the end of March, they will strike root deeply, and make growth so robust as to be beyond reach of drought ere July sets in. On the other hand, were the seed sown in the spring, and the seedlings dibbled out into the open ground at midsummer, myriads of them would not survive a hot season. The following spring the plants make big clumps, and they will do well in the soil for about three years. Then they are cleared off, as seed is saved from the very best forms, and thus a big lot of seedlings is raised yearly. That is the course all should adopt who wish to have a good stock of hardy Primroses in their gardens. I treat Polyanthus in the same way, and regard them as Primroses so far as culture is concerned. Hundreds of plants are blooming little or much now, but of course the flowers suffer somewhat from the slugs, so abundant during mild autumns and the heavy fogs so prevalent also in November. A few dozens put into pots or planted in a frame close to the glass, would give a lot of beautiful flowers whilst the weather remains open. *A. D.*

CRESTED BRACKEN.—It may interest those who study British Ferns and their habitats, to know I have found a beautiful variety of Crested Bracken near here; only a single plant was noticed, although the ordinary kinds of this Pteris are plentiful. Probably it is identical with one of the forms found in other districts. It is unfortunate that the Bracken is difficult to transplant, as where rare types are found, and lifted at the most favourable time, just after their fronds die, they are likely to succumb to the operation. Perhaps the best thing to do is to leave the plants and trust to spores. *Thomas Coomber, Hendre Gardens, Monmouth.*

MANDRAGORA AUTUMNALIS.—This handsome plant is now in good flower here, and there are some curious points in its history which I think are interesting, and worth a note. I received it from Paris about fifteen years ago. For a few years it flowered in early autumn, but last year it flowered later than before, till at length it became a spring bloomer, and was in flower at the same time as its near relation, M. officinalis. Last year I gladly divided my plant for Kew, and this spring it seemed to have entirely disappeared, and I thought I must have killed it by the division, but about six weeks ago it began to show signs of life, and now it is in full bloom; so going back to its autumnal blooming, I can only suppose that the division caused a check, which for the time (?) has sent it back to its original condition. It is really a very handsome plant; the tuft of flowers in the centre of a star of large flat leaves remind me more of Anemone Pulsatilla than of any other flower, and it is perfectly hardy. The plate in Sweet (*British Flower Garden*, s. ii., p. 325) does not very well represent the plant. The colour is much too deep a blue, and the leaves are represented as upright, whereas they lie perfectly flat on, and touching the ground—as flat as Plantains on a lawn. M. autumnalis is said to be botanically the same as M. officinalis, but as a garden plant it is quite distinct, and in one important point the difference is very great—M. officinalis produces plenty of fruit and seeds. I have never seen the slightest approach to fruit in M. autumnalis. *Henry N. Ellacombe, Bitton Vicarage, Gloucestershire.*

PINES UNDER THE SHADE OF VINES.—I was rather interested by the remarks of your correspondent "F. M." upon the above subject, in your issue of last week. Some twenty-four years ago, when serving under my father who, at that time, was gardener at Compton House, Stockbridge, Hants, I had the opportunity of seeing Pine-apples grown under the very same conditions as mentioned by "F. M.," namely, in brick pits under the shade of Vines. Some very creditable Pines were grown in this house, the weight being generally about 4 lb., the variety being the Queen. The crown of the fruits were generally of large size, owing, no doubt, to the shade they received from the Vines, and I am inclined to think the constant use of the syringe had also something to do with it. The Grape Vines were usually started in January, and included pot Vines in addition to those planted in an outside border; the house also contained a few Orchids, Ferns, and other miscellaneous subjects. In the autumn, the Vines in pots, now bare of fruit, were taken outside, the house was consequently kept somewhat cooler to suit the permanent Vines, though not so cold as the generality of vineries. The Pines did not suffer in consequence, but were benefited by the temporary enforced cool temperature and rest they received, and generally commenced to show fruit soon after the Vines were again started into growth. The pit having in the meantime been cleared out, and made up with fresh leaves, and the house thoroughly cleansed. It must be borne in mind, that the fruiting plants, and the successions, were all grown in the same house—in fact, were never out of it, which was a disadvantage. But as in many gardens in those days—aye, and in the present, too—a gardener oftentimes was expected to grow many different subjects in one house, and expected to grow them as well as their more fortunate neighbours with more glass accommodation, and a large number of hands kept upon the establishment. To the best of my recollection, the distance the Pines were from the roof of the house would be from 6 to 8 feet. I certainly think the distance from the light affected the length of fruit, to the lessening of their diameter;

but, as a rule, the fruit always swelled out to a fair size, and coloured well, great care being exercised during the swelling and ripening process; and they were certainly of better flavour than any of the various imported fruits, and from their being allowed to ripen upon the plant, the peculiar delicate aroma of the fruit was not lost. I should like to add that I recommenced the cultivation of the Pine-apple at this place under more favourable circumstances than those above alluded to—namely, in a Cucumber-house, and with plenty of heat at command. All the same, I can assure any one in possession of a brick-pit of good depth in the centre of a vinery, and with plenty of Oak or Chestnut leaves at command, that Pines may be grown to a very creditable size, even though they be shaded by Vines. *F. H. Froud, Chase Park, Enfield.*

WATER-RATS AND THE CAPE POND-WEED.—On p. 538 of your issue for November 9 last, Mr. G. F Wilson invites correspondence as to the best means to prevent water-rats destroying his plants of the Cape pond-weed. My method is to place some eel-cages or traps half-deep in the water with some long grass inside, not putting the cages sufficiently deep for fish to enter the mouth; when examining my cages the other morning, I found four water-rats imprisoned therein. *G. Howes, Merton.*

CHRYSANTHEMUMS.—At Stamford Lodge, Bowden, Cheshire, the residence of R. Miller, Esq., these plants are well grown by the gardener, Mr. Camden. Recently I saw a group of about 200 plants in 8 to 10-inch pots, with from three to seven flowers on each of great width and depth, and foliage healthy and plentiful. The gardener adopts the cutting-down method, but does not cut so low as many do—about 12 or 14 inches above the soil. The plants, when so cut back, break sooner and grow more freely than when cut hard back and into riper wood. About May 20 is a good time to commence to cut the Chrysanthemums. Mr. Camden is in favour of using guano as a manure in a weak state, and often, and both before and after the buds are set. *H. Ellis.*

THE WINTER MOTH.—After the note at p. 587, perhaps you may like to have our experience of this season. The cart grease bandages were not at work till October 17, on the 23rd the first moths appeared on them, and on November 8, moths of several species, males and females, came in large quantities, and have continued to do so. It may be that our wood and water make the garden a favourite moth resort, but if there is anything like the same quantity generally through the country, the fruit tree outlook is a serious one, and I fear the fruit growing for profit about which we have lately heard so much will be profit only to the dealers in fruit trees. I speak feelingly, as three years ago, our young Apple, Pear, and Damson were beginning to bear fine fruit, and we had to think of building a fruitroom; last year the caterpillars ate the leaves down so close that the trees made no growth, and looked very sick this year. Owing to the number of moths caught last autumn, the trees have a good deal recovered, but more than one hundred trees did not bear in all fifty fruits; and I fear we were not singular, as at a well-known large garden about 13 miles from Wisley, I was told that they could not find an Apple because of a pet bullfinch. *George F. Wilson.*

CAMELLIA BUDS DROPPING.—The cause of Camellia buds and flowers dropping off the plants is attributable to different reasons, the principal of which is the state of the roots. Healthy plants hold their buds and bloom freely. Insufficient drainage and over-watering produce the worst effects, as the soil is liable to become soddened and the roots to decay, the extremities, which are the feeders, losing their vitality first, and hence their powers of absorption for the nourishment of the plants. Camellias require heat and moisture during their periods of growth, and comparatively little during the remainder of the season. Few plants are more easy of management than Camellias, and very few offer such a return in beauty for the little care bestowed upon them; heat and moisture during the period of growth, and shade during the remainder of the year being the elements of success. If "Subscriber" will have his plants examined by a competent person, he will soon ascertain the cause of the buds falling off. Immediate attention may preserve the remaining buds and flowers, should the plants be healthy, but if not so, another year's care and attention will be necessary to restore them to health. *C. B. Saunders, Jersey.* [It is certainly not the case always that the flower-buds are shed from the causes which our correspondent mentions, for very healthy well-rooted plants indoors and out, in borders shed their buds in large numbers, in town gardens, and also in the country far removed from the influence of smoke-laden fog. ED.]

PROSPECTS OF SPRING.—While some are writing about the unusual gaiety of their gardens, owing to the long respite allowed to the summer flowers by the absence of frost, others, of whom I am one, are looking forward in dismay to the consequences we are likely to suffer in spring. The same causes which have made Aster grandiflorus flower as it has never done before here, and allowed Saxifraga Fortunei and other late and tender plants to get through their season without a check, has encouraged Daffodils and other early bulbs to show their leaves above ground at least two months before their usual time. Here, in Cheshire, after a hot and dry June, rain set in on July 10, and continued without intermission of twenty-four hours until the end of August; the soil has been saturated by excessive rainfall ever since. Owing to this, many bulbs started into growth again almost before they were ripe. Narcissus maximus, which is generally one of the latest to ripen its leaves, is already 6 inches high; Iris reticulata has pushed its flowering crowns through the surface; and Crocus imperati is in full leaf, and showing buds. Other things are too forward in the same proportion. Indeed, Starch Hyacinths, which nearly always show leaves in autumn, were excited into such early growth by the conditions of last summer, that many of them seem to have discovered their mistake, and their leaves are turning yellow and dying; and I hope the bulbs will make a fresh and more seasonable start. But my chief object in writing is to consider whether anything can be done to remedy the effects of this premature growth. No flower is improved by remaining in bud, waiting for suitable weather, during a long, unseasonable time. We cannot help the result of this, but much may be done to prevent another evil which precocious Daffodils and other early bulbs suffer in a strong soil like mine. The constrictive force which a hard frost gives to the soil pinches the leaves at the ground line, so as to destroy the tissues, and the visible parts rot away. The higher the leaf, the more easily it is affected, and the worse the consequences to the plant. This may be prevented by stirring the soil in time with a small handfork, and dressing with 2 or 3 inches of broken stone mixed with coal-ashes and leaf-mould, which will remain open and loose even in hard frost, and the labour is well repaid. Few varieties of Primrose suffer from precocity. The varieties of P. acaulis are sufficiently perpetual to afford to flower in autumn and spring too; the same may be said of Hepaticas. The effects of a warm autumn on P. rosea is only to retard the decay of its summer leaves, and when these are dead, it always takes three months rest, and no frost hurts it; but P. denticulata and its varieties, if left to themselves in a wet heavy soil, are very impracticable, making their only attempt at flowering in the dead of winter, when it is impossible for them to succeed. This habit, however, is easily remedied by cutting up and transplanting them before the end of summer, giving just time to root and form a new crown before winter. As for such subjects as Crocus imperati, they must be treated to a *cloche* or hand-light, if they are expected to flower well, and so must the more forward clumps of Iris reticulata. There is one other point to notice. Slugs have been a plague all the summer, and are especially favoured by this warm damp autumn. They are now nestling down into the early breaking crowns of their favourite plants, especially Delphiniums, Pyrethrums, and the choicer Michaelmas Daisies; these they know will supply them with food till spring, and then, when the breaking power of the crown is exhausted, the slugs will seek new pastures, and inexperienced gardeners will blame the winter for killing these plants, any of which can endure 40° or 50° of frost without injury. No time should be lost in dressing these hardy plants over the crown with a mixture of quicklime and soot, in which slugs cannot work. Coal-ashes may be mixed with the dressing. For more refined plants, like Hepaticas, the buds of which might be spoiled by soot, I substitute tobacco-powder, which I find very effective. I hope other correspondents will make suggestions which may help us to save spring flowers. *C. Wolley Dod, Edge Hall, Malpas.*

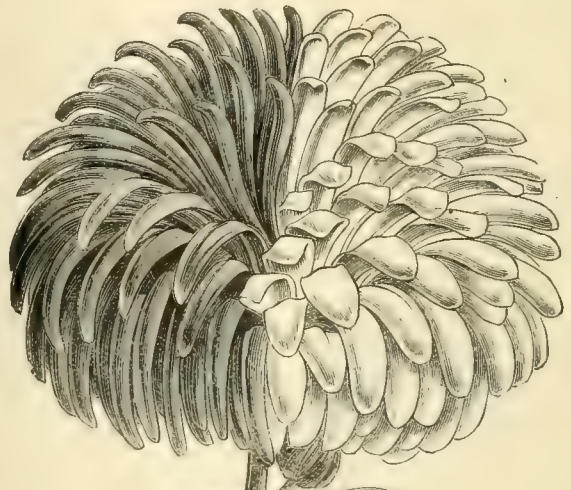


FIG. 86.—A CHRYSANTHEMUM SPORT. (SEE P. 631.)

PROPAGATING PELARGONIUMS.—In your issue of October 26 last (p. 472), there is a note upon a method of striking cuttings of these plants in sand under glass, as practised at Lincoln, Chicago. There is a better plan than that within the reach of all of us, and that affords the best possible results, with a minimum of trouble. The second week in August, dibble in the cuttings made in the ordinary way on a border of light soil in the open ground; the only preparation requisite being to merely fork and rake it over, and make it moderately firm, no leaf-mould, sand, or anything else being used. Although the weather afterwards this year was generally cold and rainy, the cuttings by the end of September had mostly formed good plants, well furnished with roots, and the losses did not exceed one-half per cent., if so much, and beyond pulling out a few weeds, and watering the beds twice, no other attention was given the cuttings. These were lifted, and put singly into 3-inch pots, and are now the best lot of young stuff I have. The tricolors appeared to succeed, if anything, better than the zonals. *R.* [The much hotter sun at Chicago may make it neces-

sary to put the cuttings under glass, or at least, under a roof of laths, which is better, so that they may be shaded from its too ardent rays, and kept sufficiently moist to prevent withering away. Here, again, is another instance of our much-maligned climate being sometimes superior to that of other countries. Ed.]

SAXIFRAGA FORTUNEI. — In reference to the note in your last issue, of Mr. Wolley Dod, of Malpas, on the above plant, I must remind him of the exceptional autumn we have had in many parts of the country, and his county (Cheshire) is, doubtless, one of the favoured, as our plants left out in the south of London were quite spoiled by the second severe frost we had over a fortnight ago. I quite agree with him that plants out-of-doors are more satisfactory if allowed to bloom than those confined in pots; but when one has to run the risk of their being blighted long before they are in full perfection, I hold it is more satisfactory in every way to have a "bird" in the hand. *D. D.*

HYDROSME EICHLERI.—A corme of this Aroid was sent to Kew about the middle of last year, and has lately flowered. Its height, which is about 5 inches, shows a great contrast between this and the gigantic A. Titanum, which flowered a few months ago. In colour, this flower was somewhat dull, the spathe being of a very light brown on the outside striped with a darker brown, the inner part rather more striking, being of a reddish-brown on the margin which is recurved. In the cup form by the spathe was a circle of a dirty white colour, and at the base there was a conglomeration of minute blisters, dark crimson in colour; the plant when flowering emitted a very disagreeable odour. *P. W.*

SLUGS IN THE FLOWER BORDERS.—These are very destructive this year—the mild wet season keeping them in a more active state than would frosty seasonable weather. Soot, quicklime, and sifted coal-ashes are all good for keeping them away from Pyrethrums, Christmas Roses, Pinks, Carnations, Saxifrages, &c. The last-named materials, if placed in the form of a ridge round plants that are the favourite food of the slugs, will keep them away; but for greater safety, after making search for the depredators within the ring of ashes, pricking up the soil with a pointed stick in so doing, within the ring, place slices of Carrot or leaves of Cabbages outside of it. Both of these are liked by slugs, and are taken in preference to other food. Moreover, under the Cabbage leaves many may be captured in the early part of the day. I think the best remedy for the slug nuisance is to rearrange the borders once in three or four years, which admits of the ground getting a trenching of two or more spits in depth, and the creatures being in great measure surface dwellers get buried beyond chance of resuscitation. Don't kill the birds, and even keep a seagull or two, or a few ducks—they will save many a favourite plant. *X. Y. Z.*

CATASETUMS.—Mr. Rand's field notes upon Brazilian Catasetums (Nov. 16, p. 559), are extremely interesting, as the notes of an intelligent observer on the spot are always likely to be. I have often looked at these singular plants and tried to imagine the insects at work among them, but no amount of observation here at home would have revealed the fact that a large, peculiar and handsome bee has a sort of special mission to fertilise the flowers, as observed by Mr. Rand. This is natural history as it should be, and one cannot help wishing that such communications were a little more frequent. Now, will Mr. Rand be good enough to secure a few specimens of that particular bee, and let us make his more intimate acquaintance? One would like to know by what name it is known to entomologists, why it should have such a special predilection for Catasetums, and why it should disappear with the close of the flowering season. Speaking of Catasetum macrocarpum, Mr. Rand remarks that he has never seen both sexes on the same spike, though he has seen thousands of plants and flowers. This makes the case I have now to record all the more interesting. In Dr. Lindley's herbarium is a specimen from the collection of Lord Fitzwilliam, at Wentworth, which has two male flowers at the apex of the raceme, while all the lower ones are female. I do not know of any published note on the subject, though it is recorded in my paper on the genus, to be published shortly in the *Journal of the Linnean Society*. The note on the Monachanthus section is interesting, but unfortunately it is not clear to which species it applies. Monachanthus of the books is a name chiefly applied to the females of any species of Catasetum, and in this sense cannot be a section at all. I have a suspicion, however, that the group Mr. Rand alludes to may be my section, Pseudo-Catasetum, which is the only section of the genus, with hermaphrodite flowers. The group mentioned a little later "with most remarkable flowers, that are very beautiful, the colours of the different species being bright yellow, rich wine-colour, or purple," is the genus Mormodes, as I know by two species received from Mr. Rand, both of which, after comparing with descriptions of all the described species I can find, I believe to be new, and of which I am drawing up descriptions for publication. The Monachanthus fimbriatus of the *Botanical Magazine*, t. 3708, is a form of Catasetum discolor, and is hermaphrodite, so it cannot be the female of an allied species as suggested. Concerning the cultivation of Catasetums, I have but one or two suggestions to make, and these are as follows: Catasetums are gross feeding plants, and if planted on a block they soon dwindle away from want of nourishment. Many species are successfully grown, year after year, in pots in this country, which tends to show that living wood is not necessary for their successful cultivation, and therefore that there can be no connection between the life of the Catasetum and that of the tree on which it grows. Some other cause must be sought as the explanation of failure. Catasetums are not parasitic, nor are they semi-parasitic, like Euphrasia, Pedicularis, and certain other Scrophulariaceous genera. In fact the same conditions of culture must be applied to Mormodes



Fig. 87.—Calanthe sport. (see p. 631.)

and Cycnoches, and I would not recommend any one to try them on tropical shrubs. In conclusion, I should like to call Mr. Rand's attention to Catasetum heteranthum, which is synonymous with C. gnomus, and which Rodriguez asserts he has seen producing three sexual forms on the same individual. I can only hope Mr. Rand will send a series of the genera Catasetum, Mormodes, and Cycnoches, to Kew, with more of his invaluable notes, and thus enable me to write a supplemetary paper to the one shortly to be published. *R. A. Rolfe, Herbarium, Kew.*

STACHYS.—I first became acquainted with this new vegetable last spring, when I executed an order for America. The roots were smaller than I expected, being mostly about 1½ inch in length and about one-third in diameter. I retained half-a-dozen, but omitted to plant them for three or four weeks, when they were in a dry, shrivelled condition, apparently without life; nevertheless I planted them singly in small 60-pots, and, to my surprise, they soon appeared above the surface, and grew so rapidly, that I tapped them from the pots into some rich peaty soil in my kitchen garden, about 2 feet apart. They continued to grow, and the foliage soon covered the ground. After maturing, it completely died off, when, in order to test the result, I had one root dug up, and found that it had increased more than one hundred-fold, most of the roots retaining their original size. I selected about fifty, and had them dressed by boiling in milk and water with a pinch of salt for about twenty minutes, when they were served up on toast with a little butter, and pronounced "delicious." I therefore recommend every gardener to give Stachys a trial, as I have no doubt it will become a most useful adjunct to our comparatively few cultivated vegetables. *W. H. Rogers, Red Lodge Nursery, Southampton.*

SPINACH VIROFLAY, OR NEW PROLIFIC.—If this variety grows as well with Mr. Wythes as it has done with me, I am sure he will not regret having given it a trial. I have now grown Viroflay Spinach for four years, and for both summer and winter supply, and now grow no other. It proved far superior to the old variety in the summer months, lasting fit for use several days longer, and running to seed less rapidly, and it has proved to be fully as hardy in the winter as the prickly seeded. The variety under notice is a robust plant, that produces leaves of great size and substance, and of a dark green colour, and on account of the large size of the leaves it requires to be thinned out to 14 inches apart between the rows, and 8 inches from plant to plant for the winter crop, the land well manured, and deeply dug. In summer we do as little digging as possible, having repeatedly proved that for some plants a rich firm soil is more suited to their growth than a loose one; and may instance Lettuce, Spinach, Cabbage, Brussel Sprouts, Broccolis, &c., which are all better by being planted in firm land. I have not grown the Victoria variety, but will test its merits in a trial next year. I may mention that it is my practice to save seeds of Spinach, believing that undoubted new seeds of this plant give the best results. *H. Markham, Mereworth Castle.*

SOCIETIES.

EDINBURGH BOTANICAL.

The first meeting of the Society for the session was held on the 14th inst., Dr. Craig, the retiring President, in the chair.

The following office-bearers were elected:—

President. — Robert Lindsay, Royal Botanic Garden.

Vice-Presidents.—William Watson, M.D.; William B. Boyd, of Faldonside; Thomas A. G. Balfour, M.D., F.R.S.E., F.R.C.P.E.; Malcolm Dunn, Dalkeith Palace Gardens.

Councillors.—David Christison, M.D., F.S.A. Scot.; Professor F. O. Bower, D.Sc., F.R.S., F.L.S.; Alexander Buchan, M.A., LL.D., F.R.S.E.; Hugh Cleghorn, M.D., LL.D., F.R.S.E.; George Bird; John Methven; William Craig, M.D., F.R.S.E., F.R.C.S.E.; J. E. T. Aitchison, M.D., LL.D., C.I.E., F.R.S.; Andrew Taylor; William Murray.

Honorary Secretary.—Professor Sir Douglas Maclagan, M.D., F.R.S.E.

Honorary Curator.—The Professor of Botany.

Foreign Secretary. — Andrew P. Aitken, M.A., D.Sc., F.R.S.E.

Treasurer.—Patrick Neill Fraser.

Assistant-Secretary.—John M. Macfarlane, D.Sc., F.R.S.E.

The following communications and exhibitions were made:—

I. "Notes on the Regional Distribution of the Cape Flora." By G. F. Scott Elliot, M.A., B.Sc.

A range of mountains runs round the southern coast at a distance of 200 miles from the sea. A different rainy season prevails on the eastern and western sides of the country, giving different flowering seasons, and two distinct floral regions. Within the mountains, where the rain from the sea does not penetrate, there is a distinct flora. A branch of tropical flora penetrates down the eastern coast as far as Natal, and the Kalahari region occupied the Transvaal. The geology of the country also affords some interesting points, and has exercised a considerable influence on the botanical distribution. The mountains themselves have become botanically isolated from one another. One is struck by the fact that most of the plants belonging to one district have a certain sort of resemblance to one another. The author discussed the flora on one of the mountain slopes in illustration of this. The plants were shrubby perennials, the leaves were small and hard, and frequently rolled at the edge. In explanation of this, he pointed out that the wind and sun together would bring about so great a transpiration, that the small, much-branched condition would be brought about; and he noticed in this connection the predominance of small forms of insect life, such as would more easily fertilise the small flowers which these plants

formed. What struck him in favour of this view, was that when one ascended to the tops of the mountains, where there was greater rainfall and mist, the aspect of the flora changed at once. On Table Mountain he noted the enormous number of bulbous plants which flowered only for a very short time—a circumstance which, he thought, helped to account for the very large number of species, the shortness of the flowering season forming, as it were, so many physiological islands.

Report of progress of vegetation at Royal Botanic Garden, Edinburgh, for July, August, September, and October. By Robert Lindsay, Curator:—

July.—This month was, on the whole, a very favourable one. The early part was warm and dry; grass on lawns and verges had a brown appearance during the first week. On the 7th, a good deal of rain fell, accompanied by thunder, after which no more browning took place during the season. Up to the middle of July the prospect of there being a really good season was very hopeful indeed; after this, the out-look was not so promising.

The lowest night temperature was 38°, which occurred on the 8th, and the highest was 52°, on the 14th. The lowest day temperature was 51°, on the 11th; and the highest was 81°, on the 31st. Rain fell on fifteen days.

On the rock garden, 258 species and well-marked varieties came into flower during the month, as against 276 for the corresponding month last year. Amongst the most interesting were:—Astragalus alopecuroides, Calamintha glabella, Cocculus japonicus, Dallibarda repens, Eremurus Olgæ, Galax aphylla, Lithospermum petræum, Philesia buxifolia, Sagina Boydii, Symphiandra Hoffmanii, Veratrum Maackii, Veronica salicornioides, &c.

August.—The weather during August was exceedingly cold and unsettled. Rain fell on twenty-one days, and all outdoor work was much retarded in consequence. So very unfavourable an August has not occurred for some years back. The lowest night temperature was 38°, which occurred on the 31st of the month; and the highest, 55°, on the 2nd. The lowest day temperature was 59°, on the 20th; and the highest, 79°, on the 1st.

On the rock garden ninety-nine plants came into flower, as against 140 during last August. Amongst the most conspicuous were: Dietes Huttoni, Gentiana Andrewsii and ornata, Stokesia cyanea, Liatris elegans, Sparaxis pendula, Senecio speciosus, Pyrola rotundifolia var. arenaria, Sheffieldia repens, &c.

September.—This month was, on the whole, favourable; the first half being warm and dry. Occasional heavy showers occurred at intervals during the remainder of the month, but at no time was the rainfall in excess. There were twenty-one dry days, and out-door operations had but little interruption. The first frost this season took place on the night of the 21st, when the thermometer registered 29°; other low readings occurred on the 22nd, 25th, and 36th, when 32°, 35°, and 34° were registered respectively. The lowest day temperature was 55° on the 21st, and the highest 72° on the 10th. Most kinds of herbaceous plants flowered extremely well, and were at their best during this month. The earlier flowering kinds ripened an abundant crop of good seeds, which were secured in fine condition. Roses flowered very freely during September, the blossoms being equal to those developed earlier in the season. On the rock garden, thirty-eight plants came into flower, a few of the most interesting being: Asclepias tuberosa, Gladiolus Saundersii, Gentiana alba, Gerbera anandria, Kniphofia nobilis, Sedum Ewersii, Synthiris reniformis, Thymus striatus, &c.

October.—The month of October was exceedingly variable, with frequent rain and wind, but very little frost. Tender plants, such as Dahlias, Pelargoniums, Calceolarias, and Californian annuals completed their flowering season without having been much injured by frost. The thermometer was at or below the freezing point on five nights, indicating only 2° of frost for the month, during October, 1888, which was also very mild; 9° of frost was registered. The lowest readings were on the 9th, 32°; 11th, 31°; 12th, 32°; 26th, 32°; 29th, 31°. The lowest day temperature was 47° on the 26th, and the highest, 63°, on the 6th. Rain fell on twenty days. Herbaceous plants continued to flower in fine condition throughout the month, the most effective being the various species of Aster, or "Michaelmas Daisies, Helianthus, Rudbeckias, and other Compositæ, also Kniphofia, and Japanese Anemones. Leaves of deciduous trees and shrubs began to fall early in the month, and by the end most trees were stripped bare; with few exceptions, the leaves were not well coloured, and autumn tints were not so effective as usual. A notable exception was Azalea pontica, which produced its characteristic purple and yellow foliage in perfection.

Fruit is very deficient on trees and shrubs, with the exception of Yews, which had a good crop of berries, that are being greedily devoured by birds. Holly berries could hardly be scarcer than they are this year, while last year they were most abundant. Haws are also very scarce. If the converse holds good of the old adage "Many Haws, many snaws," we ought to have a remarkably mild winter.

Hardy Rhododendrons, Azaleas, Andromedas, and such like plants are fairly well set with flower-buds, in marked contrast to their barren condition last year. On the rock garden thirteen species of plants came into flower, amongst which were: Helleborus niger grandiflorus, Caryopteris Mastacanthus, Rhododendron lepidotum, Saxifraga Fortunei, Veronica Chathamica, &c. The total number which have flowered since January 1, is 1473; at the same date last year, 1534 had flowered.

VIII. "On Temperature and Vegetation in the Botanic Garden, Glasgow." By R. Bullen, Curator.

October.—A few very fine days have been recorded, but the majority have been sunless, with frequent rain, occasionally heavy. If we except the twelve nights on which the thermometer fell to or below the freezing-point, the temperature both day and night has been above the average. The lowest night reading was 26°, on the night of the 28th. Total frost, 18°, and three times at freezing-point. During one-half of the month the maximum day temperature in the shade varied from 50° to 55°. The lowest day reading was 41°, on the 26th. Single Dahlias were blooming freely up to the night of the 28th. Late-blooming perennials have been earlier and better developed than is usual in our climate. Many of the more tender annuals never recovered the muggy weather experienced for several successive days last month.

Comparatively few hardy plants have ripened seed satisfactorily, the latter part of the season being less propitious than the early part.

DEVON AND EXETER.

November 15.—The annual Chrysanthemum Exhibition was held in the Victoria Hall, Exeter. Entries more numerous than last year, and an excellent show resulted. There was a falling off in the quality of the plants for grouping, and also in their arrangements, for which hitherto the Society can boast of being second to none other. Specimen plants were rigidly excluded from the schedule. Cut flowers were excellent; but possibly owing to the early blooming season many of the well-known exhibition varieties were absent, and colour was lacking throughout. Fruit was, as may be expected from Devon, good. Apples well-coloured and clean, though, perhaps, not so fine as in some seasons. Pears were not so numerous, owing to the partial failure of this crop; but some good specimens were staged.

For a group of Chrysanthemums arranged for effect, Mr. W. Counter, gr. to Mark Farrant, Esq., led with dwarf plants fresh and well-coloured. For a group in which the quality of bloom was to be the leading feature, Mr. W. Protheroe, gr. to T. Knapman, Esq., was 1st, and was very good—deservedly winning.

Mr. Rowland, gr. to W. Brock, Esq., took 1st for a group of miscellaneous plants arranged for effect, with an admirable stand put up in his usual style, containing well-coloured Crotons, Poinsettias, Bouvardias, Eucharis, Calanthes, and other Orchids. Palms, Ferns, &c.

Mr. C. Lucas, gr. to J. Marshall, Esq., Taunton, won the £5 5*s.* Cup offered by Messrs. R. Veitch & Son for cut blooms, with an excellent lot of eighteen Japanese and eighteen incurved varieties. The Japanese included La Boule d'Or, Ralph Brocklebank, Mr. H. Cannell, Meg Merrilies, Lady Lawrence, Comte de Germiny, and Belle Paule; while of incurved were Empress of India, Hero of Stoke Newington, Princess of Wales, Cherub, Jardin des Plantes, Queen of England, &c. Mr. Lucas also took 1st prize for twelve Japanese, distinct; twelve incurved, distinct; twelve reflexed, distinct; twelve Anemone and six Anemone, distinct. Mr. Dolby, gr. to Mrs. Wild, Newton Abbott, had the best twenty-four incurved, distinct, and six incurved, one variety, showing Golden Empress.

Mr. A. Searle, gr. to J. N. Whitehead, Esq., Torquay, took 1st, for twenty-four Japanese, distinct, six Japanese, one variety white (Mdlle. Lacroix); six Japanese, any other colour (E. Molyneux); six incurved, distinct; and 2nd for six Japanese, yellow (Thunberg), having worthy flowers in each case.

Mr. S. Southey, gr. to General Hamilton, led for eighteen incurved, distinct; and Mr. Barnes for the same number of Japanese.

Messrs. R. J. Veitch & Son, occupied one end of the hall, with a splendid collection of Chrysanthemums in pots, Palms, Orchids, &c., also a large assortment of excellent cut blooms, representing all the best exhibition varieties, including the new Mrs. Alpheus Hardy, also a large collection of 100 dishes of Apples and Pears; and Messrs. B. Brown, C. Sclater, Heavitree Nurseries; Jarman & Co., and Randall, also sent non-competing exhibits. *D. C. P.*

DERBY CHRYSANTHEMUM.

On Friday, the 15th inst., the fifth annual exhibition of the Derby Chrysanthemum Association, and fourth annual Chrysanthemum show, in connection with the Midland Railway Horticultural and Cottage Garden Society, was opened at the Drill Hall. The amalgamation of the Derby and Midland Railway Associations has proved a very beneficial one, and the result was a really excellent display. The committee in their report for last year state:—"The annual exhibition, held on November 10, was attended by an increased number of visitors, subscribers, and members, and proved a great success from a floricultural point of view. In the open classes, magnificent blooms were exhibited by some of the best growers in England; and a local grower was successful in carrying off an award, including one of the National Chrysanthemum Society's Medals. The members' classes were also of great merit, and were much admired by the judges and the public. The committee have carefully considered an expression of opinion by several subscribers, that the interest in the annual exhibition might be further materially increased if a challenge trophy were offered, and they have decided this year to establish the following additional prizes:—A £10 10*s.* Derby China Challenge Vase, open to all England, and a £5 5*s.* Challenge Cup in the members' class." The new prizes offered this season had a considerable effect upon the competition, which was remarkably keen. The Challenge Vase was won by Mr. J. H. Goodacre, with twelve incurved and twelve Japanese blooms—really beautiful specimens; and the Challenge Cup went to Mr. F. Bancroft, a very successful exhibitor in the members' classes. A number of special prizes were given by Messrs. Davis & Jones (Camberwell), F. Borrey (Derby), F. Stainland (Derby), the Shot Tower Stores, W. Bush (Derby), and H. W. Squirrell (Derby). There was a good attendance at the show during the afternoon, and the efforts of the two Associations deserved every success.

WATFORD.

November 18 and 20.—The fourth annual exhibition of this Society was held in the Agricultural Hall. Mr. Myers, gr. to Lord Clarendon, occupied the centre of the hall with a huge group of flowering and foliage plants, good examples and well set up. Groups of Chrysanthemums were both well shown and numerous, Mr. Deane, gr. to the Earl of Essex, securing 1st place with a group of dwarf, well-flowered plants.

The class for miscellaneous groups did not attract so many competitors as in previous years. It was a close run for the 1st place, which was secured by Mr. Brown, gr. to Lord Esher; 2nd, Mr. Seabright, gr. to H. Grindley, Esq. Mr. Brown's group was most tastefully arranged, but it lacked the freshness of the 2nd group. Cut blooms were very numerous.

The class for twenty-four Japanese (open) was most severely contested, with the result that Mr. E. Beckett, of Aldenham House Gardens, Elstree, was awarded the 1st place for the finest stand of flowers that was ever staged at Watford. The varieties shown comprised all the leading sorts, Sunflower and Volunteer being especially good. The latter is a most distinct flower, of a pale pink shade with twisted florets of good quality—decidedly an acquisition in the Japanese section.

In the open class for twelve Japanese, Mr. Deane was an excellent 1st, with a stand of exceptional merit. For the premier place in the class for six Japanese of one variety, there was a close contest between Mr. Beckett and Mr. Deane, the latter being 1st with a superb stand of Etoile de Lyon. In the

members' classes for Japanese, Mr. Beckett, the Rev. K. Gibbs, and Mr. Deane divided the honours.

Incurved varieties were uncommonly well shown, both by gardeners and amateurs.

In the open class for twenty-four, Mr. Beckett was again 1st, with well-finished blooms of leading varieties; Mr. Tidy, gr. to W. D'Arcy, Esq., Stanmore, heading the class for twelve.

In the class for six flowers of any variety, Mr. Beckett again scored with good specimens of Princess of Wales.

In the members' classes, Mr. Mundell, of Moor Park Gardens, Rickmansworth, and Mr. Brown, were particularly fortunate. Pompons and Anemones were not particularly well shown; being in the vicinity of the more popular sections, they perhaps suffered by comparison.

Trained plants of both incurved and Japanese were well shown, Mr. Beckett being an easy 1st in both sections.

Fruit formed a special feature, owing to a grand exhibit by the Messrs. Lane & Sons, of Berkamsted, of fifty dishes of Apples. Mr. Longman was 1st in white Grapes, and Mr. Beckett led for black Grapes; the latter exhibitor also getting 1st for six dishes, including a good Queen Pine, the same exhibitor leading again with vegetables.

Groups not for competition were sent from Mr. G. P. Darby's Watford Nurseries, and other local florists.

TWICKENHAM.

November 19 and 20.—In very favourable weather this, one of the very latest of the metropolitan shows, was held in the Town Hall on the above dates. Late as they were, however, the general features of the show were rather better than in some preceding years, the plant groups especially being surprisingly good and effective. Of collections of a varied kind, not for competition, were a capital bank of Chrysanthemum plants, as grown for market, from Messrs. Hawkins & Bennett, very gay indeed, yellows being effective. Also a good group of Richardia æthiopica in full flower, and some two dozen bunches of cut flowers of zonal Pelargoniums, set up *à la* Cannell, and were exceedingly attractive. The collection included no less than six white varieties, as grown for market.

Mr. W. D. Clarke, of Whitton, set up a very fine lot of white and red-flowered Cyclamen, superbly grown. Mr. Walker, of the same place, also had a capital lot, well flowered.

Mr. Henry Little sent a beautiful group of Cypripediums, Calanthes, and Cœlogynes, that were backed by a lot of brilliantly flowered zonal Pelargoniums. Mr. W. Gordon, of Twickenham, had a group of lovely forms of Odontoglossum crispum, &c., with various Cypripediums, Sophronitis, &c.; and Mr. Fordham, of the same place, put up a pretty group of plants.

A very fine group of Chrysanthemum plants, arranged for effect, from Mr. J. Parsons, gr. to T. Thorning, Esq., was placed 1st, the blooms being both good and wonderfully fresh. The addition to the groups of a facing of Ferns, as allowed by the schedule, was decoratively helpful. Mr. Rickwood, gr. to Lady Freake, came 2nd, with a very lively collection. Mr. Sallows, gr. to Miss Vaughan, had the best four specimen plants—very good examples.

Cut Blooms.—There was good competition in the larger class for twelve Japanese and twelve incurved, Mr. Coombes, gr. to W. Furze, Esq., Teddington, proving invincible, with excellent flowers.

Mr. Coombes had the best twelve incurved, and was the same in the similar class for Japanese. Mr. Coombes had also the best twelve Anemones, and also twelve bunches of Pompons.

Thunberg was the kind which came 1st for six Japanese of one variety—Mr. Garrod, gr. to J. R. Tindall, Esq., being the exhibitor. Barbara, well shown, took 1st place in the incurved class.

Mr. Bates, gr., Poulett Lodge, put up a nice lot of cut flowers, not for competition.

A capital bouquet from Mr. Newman, Bromley, was put 1st; and in the basket class, the prettiest came from Miss Clarke, of Whitton. This lady also came 1st in the dressed stand class, with a very beautiful arrangement; indeed, the whole of these shown were exceptionally good.

In the class for a stand dressed with hardy flowers, berries, and foliage, Miss A. Prior worthily took 1st place.

Of other flowering plants, very beautiful were the six scarlet Pelargoniums shown by Mr. Watts, gr. to H. Little, Esq., capitally grown and flowered. Mr. Garrod had the best Chinese Primulas and Cyclamens, Mr. Parmer also having good plants.

Fruit.—Mr. C. J. Waite came 1st in the Grape class, with two excellent bunches of Alicante; Mr. Richmond coming 2nd, with small but finely-coloured Gros Colmar.

In the class for four dishes of fruit, Mr. W. Davies, gr. to E. P. Chappell, Esq., was 1st.

Mr. Garrod had the best four dishes of Pears; good Duchesse d'Angoulême, Beurré Diel, and White Doyenné.

Mr. Waite had the finest four dishes of Apples, in superb Peasgood's Nonsuch, Emperor Alexander, Winter Hawthornden, and Kentish Codlin. Mr. Garrod was 2nd with Tower of Glamis, Warner's King, Blenheim Pippin, and Cox's Orange Pippin.

Mr. Goody, a cottager, showed the best twelve Tomatos, a very fine sample of Perfection. Mr. Waite was an easy 1st with a collection of six kinds of vegetables, having fine Onions, Celery, and Cauliflowers, Brussels Sprouts, Tomatos, and Carrots.

Mr. W. Poupart, Twickenham, the well-known market-gardener, put up a flat of his splendid red Celery as grown for market, also Cauliflowers, and a beautiful lot of Apples. Mr. Bates showed a nice collection of Apples and Pears; and Mr. Wallace, Twickenham, a large collection of good Onions, &c.

Remarkably fine vegetables were shown in the cottager classes. Amongst other exhibitions, a dish of the Stachys tuberifera shown by Mr. Gardiner, of the Police Orphanage, Twickenham, who speaks highly of this new vegetable as a most pleasant variety when properly cooked and served.

CHRYSANTHEMUM AND FRUIT SHOW AT FALMOUTH.

The fourth annual exhibition of Chrysanthemums in connection with the Royal Polytechnic Society was opened at Falmouth on November 20, by the President, Jonathan Rashleigh, Esq., of Menabilly. Although it was held rather late in the season, the exhibition was the finest that has ever been held under the auspices of the Society; the entries were far more numerous, and the exhibits were of remarkable quality. As usual, the groups occupied the centre of the hall, and the display was most effective. The plants and blooms sent by W. Ruse, gr. to Captain Roberts, of Marlborough, Falmouth, were in fine condition, and he was rightly awarded 1st in this class, the prizes consisting of a Silver Medal and two guineas. In some of the classes the judges had a most difficult task in awarding the prizes. The cut blooms were a magnificent display, some of them being of remarkable size and colour. The display of fruit was very fine, the Apples being really a magnificent lot. The judges asserted that the display of this fruit was the finest that had ever been seen in the county.

THE BIRMINGHAM CHRYSANTHEMUM EXHIBITION.

The annual exhibition, the twenty-ninth the Society has held, took place on November 20 and 21, in the Town Hall, and in order to mark the centenary year of the Chrysanthemum, special extra prizes of £25, £15, £7, £4, £2, and £1 10s., were awarded for forty-eight blooms, the bulk of this sum of money being the result of subscriptions collected for that purpose by Mr. Hughes, the Secretary. Eight exhibitors competed in this class, and there was no doubt that these prizes brought out a strong competition amongst exhibitors, and attracted a large number of visitors from a distance. The hall was crowded at times, and the attendance was far in excess of anything before experienced.

Cut blooms.—Forty-eight blooms, twelve incurved and twelve Japanese, Mr. Parker, gr. to J. Corbett, Esq., M.P., Impney, Droitwich, was placed 1st with the following varieties:—Incurved: Queen of England, Emily Dale, Alfred Salter, Miss Haggas, Princess Teck, Violet Tomlin, and one other. Japanese: Boule d'Or, E. Molyneux, Avalanche, Sunflower, Triomphe de la Rue des Châlets, Gloriosum, Mr. Henry Cannell, Madame Laing, Mdlle. Lacroix, Ralph Brocklebank, &c. Mr. W. Marshall, Uttoxeter, 2nd, with a grand lot of flowers, very little inferior to the 1st; and the 3rd prize lot, set up by Mr. Lambert, gr. to Col. Wingfield, were also of great merit.

Twenty-four blooms, twelve incurved and twelve Japanese, Mr. Parker was again 1st, with a fine lot. Eighteen blooms, Mr. Parker was again 1st; and for twelve Japanese he was 2nd, Mr. Austin, gr. to the Earl of Dudley, being 1st.

For twelve Anemone-flowered, Mr. Coombs, gr. to the Countess of Dudley, Himley, was 1st, with a beautiful lot, including some of the newer kinds.

There were classes arranged for the local growers, and in the class for twelve incurved and twelve Japanese varieties, Mr. Brasiere, gr. to Sir Thomas Martineau, was 1st, with flowers of good size and quality.

Mr. Robert Owen, Florist, Maidenhead, had a large assortment of blooms of new Chrysanthemums, amongst them many novelties of a promising character, the best bloom hitherto seen in Birmingham of Mrs. Alpheus Hardy being amongst them. Amongst others which promise well in Mr. Owen's collection were:—Incurved: Lady Dorothy, Ada Spaulding, Mr. S. Colman, and Perle Précieuse; and in Japanese: Madame Alfred Carrière, Gold, Mrs. T. H. Spaulding, Robert Crawford, W. W. Cowles, Mrs. Andrew Carnegie, Mrs. Frank Thompson, George Atkinson, Mr. A. H. Neve, and Seebard.

Some of the new varieties of Anemone, were well flowered and very beautiful; and such were Mrs. Judge Benedict, Mrs. J. G. Price, M. Charles Leboscq, E. C. Jukes, and Madame Robert Owen. Mr. Owen also had blooms of some very promising reflected Japanese new sorts, Fred Hart, Putney George, James Carter, Massalia, Adirondac.

In the class for large groups of Chrysanthemums, Mr. Cooper, gr. to the Right Hon. Joseph Chamberlain, was 1st, with a group which was much admired, the size and quality of the flowers being much admired; and the same exhibitor was 1st for nine as well as for six plants in pots. The specimens in pots were very fine, and four collections, of nine plants each, were staged. Mr. Dyer, who showed, one of the best growers in the district, but, unluckily for him, his plants generally were two or three weeks too early.

Miscellaneous.—Two groups, of six Orchids each, were staged by Mr. Charles Jonin, Selbyoak. 1st, Mr. Barnes, gr., with Cypripedium Sedenii, a large pot of C. Spicerianum, Oncidium tigrinum, a large pot of Calanthe Veitchii, and Masdevallia Vetchii grandiflora. Messrs. Heath & Son, Cheltenham, had their new Orchid, Lælia Treseriana×, so named by Professor Reichenbach; it is the result of a cross between Cattleya Harrisonæ (Loddigesii) and Lælia (Cattleya) crispa, and shows distinctly its two parentages.

The display of Primulas was a remarkable one, such as can be seen only at Birmingham. Three hundred and thirty or more specimens were staged, and the plants so good—many large and beautiful plants.

In the open class, Messrs. Thomson & Co., nursery and seedsmen, were 1st, for twelve and six single-flowered kinds; and Messrs. Thomson were 1st, for six doubles and for six Fern-leaved varieties, and this firm also obtained the premier prize for the best single Primula in the exhibition, a superb plant of Fern-leaved "Her Majesty."

In the Gentlemens' Gardens classes, there was a heavy competition, Mr. Brasiere, gr. to Sir Thomas Martineau; Mr. Cooper, gr., Highbury, and other gardeners being the chief winners; and also for the liberal extra prizes given by Messrs. Thomson and Messrs. Pope & Sons. The plants throughout were so well grown as to call forth general praise.

A finer lot of bouquets were never staged, and the three classes were well filled. In the open classes, 1st, Messrs. Perkins & Son, Coventry.

Fruit is always well to the front at the Birmingham November show, and high-class Grapes especially so. On this occasion the display was remarkable for their excellent quality.

In the class for six bunches of Grapes, Mr. Goodacre, gr., Elvaston Castle, was 1st, with two bunches each of Gros Colmar, Gros Maroc, and Lady Downes.

For three bunches, 1st, Mr. Campbell.

For three bunches of white Grapes, H. C. Curzon, Esq., was 1st, with superb Muscats of Alexandria.

The classes for Apples were well filled, R. H. C. Neville, Esq., being 1st, with a very fine lot of six dishes; and Colonel Paulet was 1st for six dishes of dessert Apples.

Mr. Parker, Impney, was 1st for six dishes of Pears, his Gansel's Bergamot being very fine, also Glout Morçeau and Beurré Diel.

Messrs. Riders & Son, Sawbridgeworth sent, not for competition, a large display of fine fruit of Apples and Pears, as did Messrs. Rd. Smith & Co., St. John's Nurseries, Worcester. Col. Wingfield took the 1st prize for a collection of very fine vege-

tables. Messrs. Sutton & Sons, Reading, contributed thirty varieties of Potatos, including some very promising seedlings and their newer named varieties. Messrs. Thomson & Co., nurserymen and seedsmen, Birmingham, had a beautiful group of plants not for competition, and a large and handsome wreath of flowers. Messrs. Hewitt & Co., The Nurseries, Sparkhill, sent a fine group of Bouvardias, Cyclamens, and zonal Pelargoniums in flower. Messrs. Pope & Sons, nursery and seedsmen, Birmingham, a fine lot of zonal Pelargoniums in flower, of Souvenir de Mirande, conspicuous for its beauty, and Le Bruant, for the size of truss and the colour. Other exhibits were also sent, and amongst them a fine lot of Cyclamens from Mr. F. Denning.

The exhibition was of a superior character throughout, and the attendance large, far in excess of what has taken place at any other exhibition of the Society.

YORK ANCIENT FLORISTS' CHRYSANTHEMUM SHOW.

This Society held its tenth Chrysanthemum show on November 20, 21, and 22. As in former years the Committee had secured the use of the excellent building belonging to the Yorkshire Fine Art Committee. Taking the show as a whole, it was fully up to those held in previous years, and in some points better. The groups both of Chrysanthemums alone, and those mixed with foliage plants, were very fine. The 1st prize group of Chrysanthemums was shown by Mrs. Gutch, Holgate, York (gr., Mr. Everard); like all in this class, it was semicircular in shape. There was a fair mixture of all classes of Chrysanthemums in it, the individual flowers being very fine.

J. T. Hingston, Esq., Clifton, gr. Mr. McIntosh, was 1st for the mixed group, with a very fine one, a very good plant of Phœnix dactylifera making a fine centre. These groups were circular ones, to cover 120 square feet. Several other groups were exhibited in both classes; but, though good, call for no special remarks.

There was a capital display of plants in pots exhibited in all the classes, one exhibitor—viz., Mr. Smith, Norwood Nursery, Beverley, having some very well-grown plants, with good blooms and foliage, and much dwarfer than are generally seen. This exhibitor gained 1st prizes in the classes for four, two, and one Japanese varieties, Mrs. Gutch having the best plants in the incurved class. Mr. Hingston and Mr. T. Smith, Murton, York, were the other successful exhibitors.

There was also a good competition in the classes for reflexed and Pompon varieties, the same exhibitors being the most successful ones, all showing good well-bloomed plants of kinds usually shown.

There was a good display of dinner-table plants, and also Palms and Dracænas, but there was nothing special, though all were good.

Cut Blooms.—For forty-eight, to include not less than thirty-six varieties, half incurved and half Japanese, 1st prize, a Silver Cup, given by the City Sheriff, value £5, with £10 added by the Society, A. Milnthorpe, Esq., Cattal (gr., Mr. Anderson), was 1st.

For twenty-four, twelve incurved and twelve Japanese, Mr. Smith, Norwood Nursery, was 1st.

Prizes were offered for twelves and sixes of Japanese, incurved, and reflexed varieties, and there was a good competition in all the classes. Several baskets of cut Chrysanthemums were shown in the class allotted to them, but they were rather too heavy and "lumpy" in arrangement.

Some fine bouquets were staged, Mr. J. Lumley, nurseryman, Mouth Fryston, near South Milford, being 1st, with a very well arranged one.

A new departure at York was the class for the best arranged dinner table, 8 feet by 4 feet. The competition was good, and exhibits also; only ladies to compete, and Chrysanthemum flowers to be used. Mrs. Hallewell De Grey Reones, York, was 1st.

Fruits.—The exhibits in this class were not so large as in some former years, but they were good. For six bunches of Grapes, in three varieties, Mr. McIntosh, Clifton, was 1st, thus proving that he can produce good fruits as well as plants and groups, for which latter he has had a good reputation for many years. His exhibit comprised two bunches each of Alicante, Trebbiano, and Gros Colmar.

For best collection of Apples grown north of the Trent, the same gentleman was 1st; the Earl of Harrington (gr., Mr. Goodacre) taking the prize for the best collection of Pears grown under similar circumstances. These prizes were given by the Messrs. Backhouse, of the York Nurseries. This firm exhibited a splendid collection of fifty kinds of Apples, all grown in their nurseries, not for competition.

There were some really splendid vegetables exhibited in all the classes for which prizes were awarded. Mr. R. Kirk, market gardener, Acomb, York, was 1st in the two classes for collections of twelve and six varieties, having fine dishes of both Asparagus and Seakale, along with other kinds of vegetables.

The show was a success financially, nearly £50 more having been taken at the doors than last year. We may also mention that the committee, along with the help of exhibitors and local gardeners, had arranged to have a stall for the sale of flowers and fruit, the proceeds to be given to the Gardeners' Orphan Fund. It is hoped that at least £5 will be secured for this purpose. *H. D. C.*

NATIONAL CHRYSANTHEMUM.

Provincial Show: *November* 21 *and* 22.—This, the second provincial show, promoted by the National Society, held in conjunction with the sixth annual exhibition of the Hull and East Riding Chrysanthemum Society, was held in the Artillery Barracks, and, compared with the exhibition held last year at Sheffield, was far in advance of it. In addition to the prize-money offered by the local Society, the sum of £50 was also voted from the funds of the National Society; consequently, some very valuable prizes were offered for competition, and a great number of entries were received, some exhibitors being, however, unable to show, owing to their flowers being too late. The Artillery Barrarks consist of a spacious drill-hall, a long room, used as an armoury, on one side, and a corresponding room on the other, and at the back another spacious drill-shed; all of these were utilised for the purposes of the show. In the first, the groups of Chrysanthemums with the addition of foliage plants were arranged at the sides, with a line of diamond-shaped groups of miscellaneous plants down the centre. Just within the entrance on either side, Messrs. E. J. Dixon & Co., Nurserymen, Hull, had fine groups of plants, and an extensive collection of Apples, and a smaller one of Pears.

Groups and Plants.—These were arranged to fill a space of 100 square feet, and as foliaged plants were allowed to be interspersed, the groups were much more effective than when formed of Chrysanthemums only; and the pots were completely hidden from view. The best came from Mr. Leadbetter, gr. to A. Wilson, Esq., Tranby Croft, Hull, who had finely grown and superbly bloomed plants, interspersed among which were Palms, Dracænas, &c. Mr. Leadbetter having won this prize three times, now becomes the owner of the handsome Silver Challenge Cup offered in this class. The best group of miscellaneous plants which consisted of small Palms, Crotons, &c., interspersed with flowering plants, among which Calanthes were a leading feature, came from Mr. E. Wright, gr. to D. Wilson, Esq., Cottingham; Mr. G. Cottrain, gr., being again 2nd.

It is necessary to say but little about specimen plants, as they fell behind those usually seen at county shows of much smaller pretensions. The Japanese varieties were mainly shown; and generally in the form of upright specimens, a few good trained plants were shown, but mostly of the Mr. G. Remale type. A trained plant of the single white-flowered Jane, though a little formal in appearance, was yet very showy. "Legginess" was characteristic of the upright-grown varieties.

Cut Blooms.—Of these there was a very fine display, Mr. P. Blair, of Trentham Gardens, Staffs., being in very strong force indeed. A 1st prize of £15, and a Silver Challenge Cup, value £15 15*s.*, was offered as a 1st prize for forty-eight blooms, twenty-four incurved and twenty-four Japanese; and Mr. Blair was placed 1st with a superb lot of flowers, his leading incurved varieties being Lord Alcester Empress of India, Bronze Queen, Princess of Wales, Mrs. Heale, Lady Dorothy, Queen of England, Golden Empress, Mr. Bunn, John Salter, Hero of Stoke Newington, Miss M. A. Haggas, Barbara, and Emily Dale. His Japanese were Etoile de Lyon, E. Molyneux, Stanstead White, Boule d'Or, George Daniels, Ralph Brocklebank, Meg Merrilies, Moonlight, Madame C. Audiguier, Stanstead Surprise, Gloriosum, Sunflower, and Madame J. Laing. 2nd—and a very good 2nd too—Mr. Heaney, gr. to H. G. Schintz, Esq., Mossley Hill, Liverpool. Mr. Blair was also 1st, with twenty-four incurved and twenty-four Japanese, again staging very fine flowers, having blooms of the before-named varieties; Mr. Leadbetter, was a remarkably good 2nd.

In the class for twenty-four incurved varieties, Mr. Heaney was the only exhibitor, but he was a very good 1st, with fine blooms of the Queen types, Duchess of Teck, Violet Tomlin, H. Shoesmith, and Jardin des Plantes, duplicates being allowed. Mr. Leadbetter had the best twelve blooms, Mr. Heaney being close up to him; again the Queen types, Lord Wolseley, Princess of Wales, and Mr. Brumlees were finely shown.

The Japanese varieties were numerous and very fine. Out of five competitors with twenty-four varieties, Mr. Heaney was 1st with grand flowers of Etoile de Lyon, Ralph Brocklebank, Stanstead White, Meg Merrilies, E. Molyneux, Avalanche, Mrs. H. Cannell, Sunflower, very fine in colour; Boule d'Or, Madame J. Laing, and Monsieur Bernand; 2nd, Mr. F. H. Anthony, Church Road, Leicester, who had very fine blooms of Boule d'Or, Etoile de Lyon, Golden Dragon, Thunberg, Sceptre, Toulousaine, Gloriosum, Meg Merrilies, and Jeanne Delaux.

Reflexed flowers were seen in good condition also. The best twelve came from Mr. Walker, gr. to Colonel Stracey Clitherow, Hotham Hall, Brough, who had Cullingfordi, the white, golden and pink Christines, Chevalier Domage, Annie Salter, Cloth of Gold, and King of the Crimsons; Mr. J. Hare, gr. to J. A. Hudson, Esq., Longcroft, Beverley, was 2nd. The best twelve Japanese reflexed—a somewhat interesting class, came from Mr. Appleton, gr. to C. H. Johnson, Esq., Thorngumbald Hall, Hull; Mr. F. W. Jameson, Eastella, Hull, being 2nd.

Mr. F. W. Jameson had the best twelve large Anemone-flowered varieties, and won Mr. E. C. Jukes' Silver Cup for the same, having admirable blooms of Miss A. Lowe, La Marguerite, Lady Margaret, Glück, Acquisition, J. Thorpe, jun., Empress, and Sabine. 2nd, Mr. Mason, gr. to G. Bohn, Esq., Tranby Park, Hessle. The latter, who is a son of the late Mr. G. Bohn, of Twickenham, had the best twelve Japanese Anemone-flowered varieties, staging very fine blooms of La Marguerite, Villageoise, Madame Clos, Eva, Jean Marty, Sœur Dorothée Louille, Minnie Chaté, Ratapoil, and Madame B. Pigny. 2nd, Mr. F. W. Jameson, having Madame Cabrol, Bacchus, Fabian de Median, and James Weston, &c.

Pompons were not so well shown as others, and it is with regret we have noticed during the past season that they have neither been so well nor so numerously exhibited as in previous years. The leading varieties were Mdlle. Marthe and its golden variety, Adèle Presette, Crœsus, Rosenante, La Vogue, Mdlle. E. Dordan, and Aigle d'Or.

Mr. H. Harland, Cottingham, was the only exhibitor of Anemone Pompons; the best varieties were Marguerite de Coe, Antonius, Calliope, Madame Montice, Madame Chalouze, and Marie Stuart.

Various stands of sweet-scented Chrysanthemums were scarcely a success, but the worst-developed blooms may prove the most fragrant.

Stands of twelve bunches of single Chrysanthemums were very attractive, and they should now find a place in schedules. The best twelve came from Mr. G. E. Smith, Holderness, who had several seedlings of his own, including one named Ethel Smith, pale rose, with broad petals, and very pretty; Mr. E. Goddard, Hull, was 2nd.

The best six blooms of incurved Chrysanthemums were Golden Empress, from Mr. Blair; Mr. G. Lawson, Newlands, being 2nd, with Lord Alcester.

The best six blooms of a Japanese Chrysanthemum were Avalanche, from Mr. Coates, gr. to Col. Hodgson, Westwood Hall, Beverley; Mr. H. Bennett, Westlands, Grimsby, coming in 2nd, with Boule d'Or.

The premier incurved Chrysanthemum in the open classes was Golden Empress, from Mr. Blair; Mr. Heaney had the premier Japanese in a splendid bloom of Etoile de Lyon.

There were a number of classes for cut flowers open to amateurs, in which blooms were numerously and well staged; but the incurved varieties were generally past their best.

Table decorations do not call for special remark, beyond stating that all were shown under gaslight, and white flowers being in most cases wholly used upon white cloths, the effect was poor. The prizes were taken by Hull ladies.

Several new varieties of Chrysanthemums were submitted for the consideration of the Floral Committee of the National Chrysanthemum Society. A First-class Certificate was awarded to single Chry-

xanthemum Ethel Smith (Smith). A golden form of Miss M. A. Haggas was thought to be promising, should the deep colour become fixed. Another deep yellow incurved appeared to come too near golden George Glenny.

There were nearly 2500 entries, about 600 in excess of the exhibition held last year; and the number of visitors during the two days the exhibition was open exceeded 10,000, including 600 charity children, who were admitted free on the morning of the second day.

Floral Committee.

A fully attended meeting of this body took place at the Royal Aquarium, Westminster, on the 26th inst., Mr. R. Ballantine in the chair, when a large number of subjects were staged. From an unknown exhibitor came a pale yellow sport from the white Pompon Snowdrop; and a rather deeper-coloured form was handed in by Mr. B. Wynne; they were both regarded as the same as Primrose League, a yellow sport from Snowdrop.

From Mr. D. Beckett, The Gardens, Aldenham Park, Elstree, came several new Japanese varieties, viz., John Thorpe, crimson-magenta, with dark silvery reverse, bright in colour, but somewhat thin, yet promising to make a good variety; Mr. Singerly, blush, white centre, with large ball-like flowers, full, but decidedly rough, a Japanese reflexed, said to be also known under another name; Mrs. Dunnett, or Mrs. J. M. Jowitt, under which latter name it appears to be best known, warm flesh-colour, with creamy reverse; Charles Sharman, deep magenta, with silvery-buff reverse, in the way of Stanstead Surprise, but distinct (this nearly obtained a Certificate of Merit—it is likely to make a useful exhibition variety); Volunteer, blush-pink, a charming flower, of the build of Avalanche, but longer in the petal—awarded a First-class Certificate of Merit; and Holborn Nugget, a somewhat rough variety as shown. Mr. Martyn, Aylesbury, sent a sport from the reflexed Mrs. Forsyth, which the Committee regarded as identical with pink Christine. Mr. Clark, Hitchin, sent a yellow incurved Japanese, named Miss Mary Ransom, very like Mr. H. Cannell, but not so broad in the petal. From Mr. R. Owen, Castle Hill Nursery, Maidenhead, came a number of new varieties, among them the incurved Ada Spaulding from America, which has come over with a great reputation behind it; colour deep fleshy-pink, citron centre, and creamy reverse; fine petal, but not being in good condition, though decidedly promising, the Committee asked to see it again; Japanese, W. W. Cowles, puce and chestnut-crimson, of the build of Val d'Andorre, bright and attractive in colour; incurved, Mons. Razart, a fine and promising broad-petalled variety, in the way of Perle Precieuse; Anemone-flowered, E. C. Jukes, cerise rose guard petals, with pale lemon centre; Japanese, Condor, a large pure white broad-petalled variety, with the incurved petal of James Salter; reflexed, Coppelia, a pale peach Christine, somewhat rough; Japanese, Mr. Charles Pratt, white, with creamy-yellow centre, to be sent again; incurved, John Lambert, a kind of brassy-yellow sport from Lord Alcester, a very fine full flower, but doubtful if sufficiently distinct from Golden Queen, but to be seen again. Mr. Owen also sent blooms of Mrs. Coleman, which has already received the Society's certificate, to show its good character and fine petal; and Japanese Sunset, a variety which won the Cup at Philadelphia as the best seedling of the year; a broad petalled bright orange-red variety; fine in colour, and very promising. Messrs. H. Cannell & Sons, nurserymen, Swanley, sent Japanese Cæsar, deep pink, with primrose reverse. Mr. Deane, The Gardens, Cassiobury Park, Watford, sent Japanese George Maclure, a somewhat rough-looking, dull-coloured variety; and six very fine blooms of Etoile de Lyon—awarded a vote of thanks. Messrs. H. Cannell & Sons sent a collection of Primula blooms.

EDINBURGH CHRYSANTHEMUM.

This show, respecting which we published a telegram in our last issue, opened on the 21st and closed on the 23rd inst. It was, as stated then, an unqualified success, reflecting the highest credit on the Scottish Horticultural Association, under whose auspices it was held. Held, as it was, in celebration of the centenary of the introduction of the Chrysanthemum to continuous cultivation in this country, it was projected on broad lines. Those interested in the subject in the North, and in the South as well, were appealed to for aid by the Executive Committee, and the response was very general, and highly encouraging.

Notes of the progress of the organising, and of the preparations for the show, appeared during the last twelve months from time to time, and need not now be repeated. The schedule ultimately issued was a most attractive one, amounting to over £300, including a handsome Cup—or, more properly, a Vase—value £20, presented by the Corporation of the City of Edinburgh. In addition to this there were about thirty other special prizes, among which the Scottish Challenge Cup, the Buccleuch Medal, and the Veitch Memorial Prize were perhaps the most interesting. These and other schedule attractions brought several noted growers of the Chrysanthemum from various parts of England, whose exhibits largely contributed to render the show not only representative in the broadest sense, but one of the best that had been seen this season, as was admitted by the judges and the southern exhibitors themselves. The great expanse of the Waverley Market was never before more gaily bedecked with floral beauty than on this occasion.

Mr. Edwin Molyneux, Swanmore Park, Bishop's Waltham; and Mr. T. B. Morton were the judges in the cut bloom section, and their task was an arduous one, especially in the two larger classes—19 and 20. For the former (which was open to all) the City of Edinburgh Cup, forty-eight blooms Japanese Chrysanthemums, twelve competitors staged, six being English and six Scotch. The contest here was extremely keen. The coveted trophy was finally awarded to Mr. McHattie, gr. to the Right Hon. the Marquis of Lothian, Newbattle Abbey, Dalkieth. Conspicuously fine among the blooms he exhibited were Avalanche, Mdlle. Lacroix, Elaine, Mrs. J. Wright, Wm. Holmes, Edwin Molyneux, and Soleil Levant. The running for the 2nd prize lay apparently between Mr. Lambert, gr. to Colonel Wingfield, Onslow Hall, Shrewsbury, and Mr. Parker, gr. to John Corbett, Esq., Impney Manor, Droitwich; but careful inspection revealed that the former had not complied with the conditions of the schedule, which required that not fewer than thirty-six varieties should be staged. Two of his blooms named Baron de Prailly and Comtesse Beauregard were found to be identical, reducing his stand to thirty-five varieties, and he was therefore disqualified, Mr. Parker being then placed 2nd; and Mr. George Burden, gr. to Geo. Cockburn, Esq., Langdale Lodge, Birkenhead, 3rd, each with splendid exhibits.

The Scottish Challenge Cup, open only to gardeners and amateurs of Scotland, brought up ten competitors, and required thirty-six blooms, twelve Japanese, distinct; twelve incurved, not less than nine varieties; and twelve Japanese reflexed, not less than nine varieties. Here also the judges had a delicate task to perform, but finally placed Mr. Milne, gr. to the Trustees of the late Sir James Watson, Broom Knowe, Row, Dumbartonshire, 1st; Mr. Robert Grossart, gr. to Jas. Buchanan, Esq., Oswald House, Edinburgh, being an excellent 2nd; and Mr. Machar, gr. to Robert Mudie, Esq, Corona, Broughty Ferry, 3rd.

Class 21, twenty-four blooms, twelve Japanese, twelve incurved, not less than nine varieties, each open to all, led to fourteen lots being staged, nine of which were of Scotch growth, the remainder English; 1st and 3rd honours here went over the Border, Mr. Burden being 1st.

Seventeen lots were staged in Class 22, seven of which were English, the remainder Scotch, twenty-four blooms Japanese, not less than eighteen varieties were required, and 1st honours fell to Mr. Rushton, gr. to Robert Tod, Esq., Clerwood, Corstorphine.

Twenty-four blooms, incurved, twelve varieties, brought eleven competitors, five from South, the remainder from North of the Border. Mr. Matheson was placed 1st.

Twelve blooms, twelve varieties, Japanese, called out twenty-six competitors, five from England. Again 1st honours fell to Scotland, through Mr. Rivie, gr. to Mrs. Scott Plummet, Sunderland Hall, Selkirk.

Six blooms, six varieties, Japanese, brought twenty-eight lots, five of which were from the south, Mr. Machar took 1st prize.

In class 44, twelve bunches Chrysanthemums, not more than twenty blooms in each bunch, open to market growers only, Messrs. Pealing & Smith secured 1st prize.

The nurserymen's class of sixty blooms, comprising twenty-four incurved, not less than eighteen varieties, twenty-four Japanese and twelve reflexed, brought only two competitors forward—Messrs. Laird & Sons, Edinburgh, and Kerr & Sons, Kalemouth, Roxburgh; and in the next class, comprising thirty blooms, of twelve incurved, twelve Japanese, and six reflexed, distinct; the same firms had the competition to themselves exclusively, and occupied the same relative positions in regard to honours.

Plants.—Chrysanthemums in pots have greatly improved in the hands of Scotch growers during the last few years, but there is still room for progress. Mr. Calder, of Calder Bank, Trinity, who took the Buccleuch Medal with eight splendidly bloomed plants, remarkable for their dwarf, compact habit, and the great size of the blooms, although an amateur, is far ahead of all others in this department in the neighbourhood of Edinburgh, whence the plants almost wholly came. Mr. Foote, gr. to Captain C. Dormer, Parson's Green, being 1st. Mr. Donaldson, gr. to H. E. Moss, Esq., Ormelia, Murrayfield, walked over in class 3, with three good plants of reflexed varieties. Messrs. Foote, McMillan, gr. to J. Currie, Esq., Trinity Cottage, and Carruthers, gr. to Mrs. Fleming, Hillwood, Corstorphine, divided the honours in the order named in class 4, three pots, Japanese.

In class 5, three incurved, Mr. Carruthers was victor.

Three pots, Pompons, was keenly contested, Mr. McMillan, Mr. Ferguson, and Mr. Copeland, gr. to T. G. Taylor, Esq., Orwell Lodge, taking honours in the order named. Mr. McMillan, was placed 1st in class 8, three single Chrysanthemums; Mr. Foote 1st in class 9, one large-flowered; Mr. Calder in class 10, one large-flowered yellow; and Mr. McMillan in class 11, one large-flowered crimson-purple or bronze.

Of miscellaneous plants in the competing classes, the entries were not numerous. In Primula sinensis, the best six, single, were staged by Mr. Bald, gr. to J. McFarlane, Glenbourne, Oswald Road, Edinburgh; and the best six double by Mr. McIntyre, gr. to Sir Chas. Tennant, the Glen, Innerleithen.

The best six Primula obconica were set up by Mr. Bald, and of this there was rather a large show, the plants good, and well bloomed.

Zonal Pelargoniums were rather a thin show, and by no means to be rated highly, the best being staged by Mr. Henderson, gr. to Wm. Macfie, Esq., Clermiston, Corstorphine.

Table plants were few in number, the best being tabled by Mr. McIntyre, gr. to Mrs. Pease, Woodside, Darlington.

Mr. Grossart had the six best table Ferns; and Mr. Rushton the best six Roman Hyacinths.

For a group of Chrysanthemums and other flowering and foliage plants, arranged for effect on the floor, in a circle not exceeding 15 feet in diameter, Mr. Grossart and Mr. Donaldson were the only competitors, and they were placed in the order named, the first group being very tastefully set up, the second remarkable for the excellence of the Chrysanthemums.

For a collection of Conifers in pots, Messrs. Jas. Dickson & Sons were the only competitors; and for a miscellaneous group of hardy plants, arranged for effect on a space not exceeding 400 square feet, the same firm was placed 1st.

Fruit.—There was a good display of Grapes, the best six bunches being tabled by Mr. Wm. Murray, gr. to T. Livingstone Learmouth, Esq., Park Hall, Polmont; Mr. D. Murray, gr. to the Marquis of Ailsa, Culzean Castle, Maybole.

Mr. Leslie, gr. to A. Coates, Esq., Pitcullen House, Perth, set up the best three bunches, distinct sorts.

Two bunches Muscat of Alexandria were beautifully represented in the highly finished pair put up by Mr. McHattie.

Two bunches Black Hamburghs gave Mr. Wm. Murray a run over with fine samples.

In one bunch Muscat of Alexandria, Mr. McHattie again excelled.

For one bunch Alicante, Mr. Bell, Clive House, Alnwick, was placed 1st.

In Gros Colmar, one bunch, Mr. Wm. Murray again took 1st place.

Mr. Boyd, gr. to Wm. Forbes, Callender House, Falkirk, tabled the best bunch of Lady Downes'.

Pines were not numerous, but very fine, Mr. McIndoe, Hutton Hall, staging the best.

The finest collection of Apples, not less than thirty varieties, was put up by Mr. Woodward, Barham Court, Maidstone, Kent.

The best eighteen varieties of Apples and six varieties of Pears grown in Scotland, were put up by Mr. Wilson, gr. Auchencruive, Ayr. Six varieties of dessert Pears were best represented by Mr. Woodward, who was also 1st, with six varieties of culinary Pears, six varieties of culinary Apples, and six varieties of dessert Apples.

In the market gardeners' class of six varieties of Apples, 1 peck of each, Mr. Brown, Musselburgh, took 1st prize.

For a table of fruit, home or foreign, ripe or unripe, quality, variety, and effect to be considered, Mr. Smith, fruiterer, Princes Street, Edinburgh, took 1st prize.

Vegetables were a splendid show. For the best collection of six distinct kinds, open to all, Mr. Gideon Potter, North Berwick, was placed 1st. For the best collections, open to market growers only, Mr. Wm. Scarlett, Musselburgh, was placed 1st. For twelve varieties of Potatos, Messrs. Laird & Sons were 1st.

Special awards were given as follow: — To the Government of Nova Scotia, for a collection of Apples; to Messrs. Bunyard & Co., Maidstone, Kent, for a collection of Apples and Pears, a Gold Medal; to Messrs. Thomson & Sons, Clovenfords, a Bronze Medal, for splendid samples of Grapes and Apples; Mr. Watkins, Pomona Farm, Hereford, for a collection of Apples, a Bronze Medal; to Mr. Wm. Murray, Park Hall, Polmont, and Mr. Leslie, Pitcullen House, Perth, Cultural Certificates, for Grapes; to Messrs. Methven & Sons, Edinburgh, for groups of Coniferæ and Chrysanthemums, a Gold Medal; to Messrs. Todd & Co., florists, Maitland Street, Edinburgh, for a chaste example of artistic table and room decoration, a Silver Medal; to Mr. H. Erskine, florist, George Street, Edinburgh, for choice specimens of florist's art in bouquets, &c., a Bronze Medal; Messrs. Dickson & Co., Edinburgh, for a collection of table plants, a Bronze Medal; Messrs. Cannell & Sons, Swanley, Kent, for collections of zonal Pelargoniums, and several Pompon, Anemone, and single-flowered Chrysanthemums — all much admired — a Bronze Medal.

STOCKPORT.

November 22 and 23.—This show was held in the Mechanics' Institute. The Chrysanthemums in pots were, without exception, in fine condition. In the class for a group, arranged for effect in half circle, Mr. Cooper, gr. to E. Emmott, Esq., Disley, took the 1st prize; the flowers large, and the foliage full and healthy. This collection gained also the Silver Medal offered by Messrs. Wood & Son, of London. The miscellaneous collections comprised Roman Hyacinths, Cinerarias, and Ferns. The cut blooms were of fine quality. For eighteen distinct, nine Japanese and nine incurved, the 1st was awarded to Mr. Walker, gr. to the Corporation of Stockport, who also took other leading prizes. Messrs. A. H. Sykes and A. Heine also figured well in the cut bloom classes.

DUTCH HORTICULTURAL.

At a meeting held on the 23rd inst. at Amsterdam, First-class Certificates were awarded to Dracæna indivisa and D. Veitchii, with many coloured leaves, from Mr. J. C. de Lange, Rotterdam. To Trevesia Burckii, an Araliacea introduced from Sumatra, with leaves of a form unknown till these days, and very remarkable, from the Leyden Botanical Garden. This plant is described by Dr. Boerlage in the *Annales du Jardin Botanique de Buitenzorg*, vol. vi. To Anthurium Ferrièrense, J. H. Kottman, and H. Witte, from the Zoological Botanical Garden of the Hague. To Cupressus Lawsoniana versicolor (seedling), from Mr. A. M. C. Jongkindt Coninck, Dedemsvaart.

Second-class Certificates were awarded to Anthurium Ferrièrense, L. J. Quarles van Ufford, and T. H. Krelage, from the Zoological Botanical Garden of the Hague.

A very interesting collection of cut Dahlias and various bulbous and tuberous plants was sent by Messrs. E. H. Krelage & Son, Haarlem, who also sent a new variety of Kniphofia aloides, named Kesterman, which, however, was not sufficiently developed to enable the committee to adjudicate on its merits.

The Vegetable Committee awarded a Second-class Certificate to Messrs. Groenewegen & Co., Amsterdam, for a collection of Cauliflower, Eclipse of Groenewegen.

Mr. H. J. Goemans, Kew (England), sent some fruits of Cyphomandra betacea. He said that these fruits, occasionally seen in Covent Garden Market, might become of great importance in the future as a new sort of Tomato. The committee, however, did not find its flavour to be superior to that of the common Tomato. *Our Amsterdam Correspondent.*

GHENT.

The Chrysanthemum Centenary celebration of the Royal Agricultural and Botanical Society of Ghent, which opened last Sunday, and closes on December 1, has been a success beyond anticipation, not only on account of the large number of well-grown Chrysanthemums which occupied the centre of the great hall and the rooms above, but on account of the numerous collections of beautiful plants illustrating the floras of China and Japan, giving a good idea of the vegetation of these two countries which have been explored with so much success by Thunberg, Von Siebold, R. Fortune, and other renowned travellers. The amateurs and nurserymen of Ghent —as, indeed, the whole country—vied with each other in the display of their examples.

The Countess of Kerchove de Deuterghem, Messrs. Meulenaère, Callier, Rigouts de Beer, Van Houtte, De Saugher, and De Bock, all exhibited collections of Chrysanthemums of great beauty; and the same exhibitors, with Messrs. Ed. Pynaert, B. Spae, Desmet Brothers, De Sivet-Duvivier, and Aug. van Geert, sent excellent collections of fine-foliaged plants.

But what most contributed to the interest of the exhibition were the collections of Chrysanthemums sent by the growers of France and of England, especially the latter. The Horticultural Society of Epernay, which was represented by its President, Baron de Brailles, sent several lots of Chrysanthemums. Messrs. J. Laing & Sons, Forest Hill, London, created quite a sensation with their grand cut blooms, which had made the journey across, and were still in excellent condition, and the Belgian amateurs would do to study well the methods of culture which enables our worthy friends from across the Channel to strike with surprise all the visitors to the Ghent show. Let me add that the jury awarded to these exhibitors a Gold Medal, a fit acknowledgment of the efforts of English growers during the last forty years.

At the banquet of the jury, I noticed several Englishmen present, among whom was Mr. Harman Payne, the delegate of the National Chrysanthemum Society of London; Mr. Laing, and Mr. Ed. Molyneux who had brought over three enormous blooms of the fine variety, Gloire de Lyon. An incident which took place at the banquet must be noticed. The President of the Society, the Count Kerchove de Denterghem, in a most happy speech, dwelt on the incalculable services rendered to the promotion of cultivation, &c., of the Chrysanthemum by the National Chrysanthemum Society of London. He said, amid applause, that the valiant English Society deserved the recognition of all friends of horticulture, and especially of the Ghent Society. In order Council of the Society had authorised him to remit to give weight to these oral compliments, the to the Society, through Mr. H. Payne, a Gold Medal with a suitable inscription. The applause which accompanied the presentation showed what good feeling existed between the Belgian and English horticulturists. Mr. Payne, who replied with well-chosen remarks, said, that he felt greatly honoured by the duty with which the Ghent Society had invested him. *Our Ghent Correspondent.*

The Hardy Fruit Garden.

The Bush Fruit Quarters.—If the vacancies in the quarters of Gooseberries and Currants have been filled up, and the pruning of the bushes finished, the ground should, if it need it, get a heavy manuring, and be lightly forked over, taking care in doing so not to injure the roots of the plants. Scrape away the earth above the roots, and place manure over them, not digging deeper anywhere than will just allow of the manure being buried. In digging, the surface should be made moderately fine. Heavy land, and that which easily sours, may have a deep turn over annually—at least, betwixt the rows of bushes. In doing this kind of work in such soils, potting-bench refuse, road-scapings, and lime-rubble, should be dug in, and stable-manure, not much decayed. As a digging-tool, a three-tined fork is the best to use.

Raspberry Stools.—Where the removal of suckers and old fruiting canes has not been attended to, no time should now be lost in getting the work done, and regulating and fastening the canes to stakes, wires, &c. Then give the ground a heavy dressing of rich manure, and if the soil be poor or worn out, deluge it with strong liquid farmyard waste, which will prove of great value next season.

Strawberry Beds.—Again weed the beds, the moist, mild weather having caused fresh weeds to spring up since the last cleaning up, and make firm the soil about late-put-out plants by treading it, and especially if the land be light, choosing fine weather, and when the soil is dry to do this sort of work. Ply the Dutch hoe amongst the plants, and rake lightly the weeds off the soil. *H. Markham, Mereworth Castle, Maidstone, Kent.*

AGAVES.

Among the many rare and interesting plants in Mr. Hanbury's garden there are few more attractive, especially to those not so well up in things botanical, than the various species of Agave which here flourish as if at home. Growing, as they do, in the most exposed and dry places, where would naturally have been utter desolateness and barrenness, they give a character to the whole garden, and at the very first draw the visitor's attention. They are decoratively the most useful of all the tropical plants, Kleinia nerifolia, perhaps, alone excepted. This extraordinary member of the family of Compositæ flourishes into large, weird bushes, and looks like some thornless, cylindrical-stemmed Cactus, which, however, bears leaves, and loose clusters of unattractive flowers. From the shores of the Canaries, where is a like aridity, comes this quaint decoration, which is not loath to grow where the rock appears alone to afford foothold, and not sustenance. It is probable that among the fifty or more species here are many rarely seen elsewhere in Europe, but we cannot pretend to give any botanically accurate account of these. Anyone interested in these plants chiefly because they are highly decorative features in the garden, will give to the glaucous-green species, such as A. lactevirens A. applanata, Lem., and A. Salmiana, Otto., the greatest share of admiration; unless, indeed, the giant flower-stems of certain dead monarchs do not claim the palm. Some of these plants, so firmly rooted into the earth, appear with broad strong leaves margined with imposing spines; whilst all, not alone the more attenuated leaves, are furnished at their tips with an exceedingly sharp spine. In some less favourable places, the great lanceolate leaves have coiled over, as if to shield the heart within the rosettes of giant leaves from the too fierce sun. Strangely twisted as are some of these leaves, the plants do not lose in character; they appear the more merciless and the more attractive with their semblance of fierce warfare against all intruding mammals.

Of the remarkable flower-stems, one—now unfortunately blown over by a late gale—is the most worthy of our attention. It was much superior to the rest in stature, whilst the delicate branches, given off to the number of about thirty, delighted at once by their curvature, and appearance of appropriate strength. They would measure, on the average, 4 to 5 feet, some produced two-thirds up the stem being considerably longer; but it will be seen at once that great strength is requisite, when we mention that each plant commonly produced between seventy and eighty capsules of large size, the whole destined to contain a grand total of 1,500,000 seeds. These seeds are certainly light as weighed immediately after the flower-stem had fallen, and it is worth notice that, according as the seeds were picked from one part or another of the various capsules, they differed somewhat in weight. Thus, out of 4,000 seeds examined, only 370 were ripe. Of these the weights differed as follows: — 33 seeds, weighing 9 grains total, were found in the first quarter of the length of the capsule; 64 seeds, weighing 21 grains total, were found in the second quarter; 113 seeds, weighing 41 grains total, were found in the third quarter; and 157 seeds, weighing 52 grains, were found in the fourth quarter.

There appeared to be no clue as to why it was that the ripened seeds occurred so predominantly in the upper and not in the lower portions of the capsules, but further examination of other capsules may be an aid. At that part of the capsules where

was a maximum weight for a given number of seeds, it was, on the whole, broadest, and the seeds were consequently larger. The small difference was not to be detected in individuals with any certainty, although clearly seen with a considerable number.

Further measurements of this remarkably large Agave may be of interest:—Length from the rosette of leaves to the apex, 40 feet; average girth, 15 inches; weight of greater part of stem, 165 lb.; estimated total weight of stem and branches, nearly one-sixth of a ton!

The ruin caused by the fall of this remarkable "flower-stalk" was considerable, but there was something ludicrous in the idea that a flowering-stem would afford so impassable a barrier across a garden path as did this. Its fall is a loss to that part of the garden where it towered up so conspicuously; for, although other species of Agave have flowered, none branch so gracefully, nor are any quite so superb in their dimensions. Very much more clumsy and ungainly are the short thick branches of the commoner species, some of which are slowly flowering from below upwards, and others of which are set with fruit throughout their length. We were struck with the ease with which the three-fold branching might be distinguished for the sixth time in the graceful secondary axes which only commenced to fork at a distance from the main axis of two-thirds of their length. M. Villa, the clever head-gardener, tells me that the name of this Agave is A. Franzosini, a name for which there cannot be found any authority. It is native to Mexico, and has not fruited elsewhere in Europe.

Another very remarkable plant of this genus is A. cantala var. vivipara, upon two of the suckers of which healthy young Agaves are flourishing, and sending forth roots. It is a sad sight, in many cases, to see the flowering tendency transmitted to the offshoots of these giant leaves, the whole colony thus perishing after flowering is accomplished. *Philip Sewell.*

Obituary.

John Simpson Tyerman.—We regret to have to record the death of this gentleman at Penlee, Tregony, on the 24th inst., in the fifty-ninth year of his age. Mr. Tyerman was at one time Curator of the Liverpool Botanic Garden. He was in former years a frequent contributor to this journal, having a special knowledge of herbaceous plants. Of late years he had more or less retired from horticultural pursuits, and was engaged in business at Liverpool. He was a man of very varied attainments, and capable of turning his attention successfully to very varied pursuits.

Henry Curtis, head of the firm of Curtis, Sanford & Company, Devon Rosery, Torquay, died rather suddenly at an early hour yesterday morning from heart disease, at his residence at St. Helier's, Torre Hill. The deceased gentleman was in his seventieth year. He came of a family of botanists, being the grandson of William Curtis, author and originator of the *Botanical Magazine* and *Flora Londinensis*. The late Mr. Curtis was himself author of *Beauties of the Rose*, and was a very enthusiastic and successful Rose grower. He was also an electrician of much skill. Kindly and gentle, Mr. Curtis was held in the highest esteem. He will be much missed in Torquay and the neighbourhood.

The Weather.

THE PAST WEEK.

The following summary record of the weather for the week ending November 25, is furnished from the Meteorological Office:—

"The weather continued mild, the air damp, and the sky densely overcast during the earlier part of the period, but subsequently it became unsettled, with rain, alternating with bright intervals, in all parts of the kingdom. Towards the end of the period some snow and hail showers were experienced at many of our more northern stations.

"The *temperature* has again been above the mean, the excess having ranged from 2° in 'England, N.E.,' and 'England, N.W.,' and 3° in 'England, E.,' and the 'Channel Islands,' to 5° in 'England, S.W.,' and to 6° over Scotland. The highest of the maxima, which were recorded on rather irregular dates, ranged from 53° over the east and north-east of England, to 58° in the north and west of Stotland, in the north-west of England, and the south of Ireland. The lowest of the minima, which were registered on the 22nd in most parts of England, and on the 25th in Scotland and at some of the Irish and northern English stations, varied from 27° in 'Scotland, E.,' and 28° in 'Scotland, W.,' to 35° in 'England, S.,' and to 40° in the 'Channel Islands.'

"The *rainfall* has again been less than the mean in all the 'Wheat-producing' districts, but in some of the 'grazing' districts there has been an excess.

"*Bright sunshine* has continued very deficient generally, the percentage of the possible amount of duration having ranged from 7 to 24 in Scotland, from 23 to 27 in Ireland, and from 6 to 24 over England."

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending November 25.	Accumulated. Above 42° for the Week.	Accumulated. Below 42° for the Week.	Accumulated. Above 42°, difference from Mean since Jan. 1, 1889.	Accumulated. Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	Rainfall. No. of Rainy Days since Jan. 1, 1889.	Rainfall. Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Bright Sun. Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	6 +	27	2	+ 220	— 37	1 —	218	37.1	7	22
2	6 +	25	8	+ 29	— 35	4 —	180	24.4	24	29
3	2 +	21	13	+ 14	— 50	5 —	166	22.4	24	27
4	3 +	19	6	— 5	+ 59	3 —	169	24.2	8	31
5	4 +	24	6	— 5	— 3	1 —	160	25.3	9	28
6	4 +	31	0	+ 57	+ 12	1 —	158	24.1	6	30
7	6 +	29	1	+ 63	— 82	6 +	187	37.3	17	30
8	2 +	26	9	+ 57	— 54	1	177	29.1	21	29
9	5 +	43	0	— 68	+ 63	0 av.	176	32.1	13	34
10	4 +	29	2	+ 77	— 100	0 av.	208	31.6	23	26
11	4 +	36	0	+ 12	— 43	3 +	187	33.2	27	32
12	3 +	53	0	+ 131	— 17	5 +	187	27.4	13	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

Markets.

COVENT GARDEN, November 28.

Business very quiet. A slight improvement in price of Grapes. *James Webber, Wholesale Apple Market.*

Vegetables.—Average Retail Prices.

	s. d.	s. d.
Beans, French, lb.	0 9-	...
Beet, red, per dozen	1 0-	2 0
Carrots, per bunch	0 6-	...
Cauliflowers, each	0 3-	...
Celery, per bundle	1 6-	2 0
Cucumbers, each	1 0-	1 6
Endive, per dozen	1 6-	...
Herbs, per bunch	0 4-	...
Leeks, per bunch	0 3-	...
Lettuce, per dozen	1 6-	...
Mustard and Cress, punnet	0 4-	...
Mushrooms, punnet	1 6-	...
Onions, per bunch	0 5-	...
Parsley, per bunch	0 4-	...
Rhubarb, per bundle	1 6-	...
Seakale, punnet	2 6-	...
Shallots, per lb.	0 6-	...
Spinach, per bushel	2 0-	...
Sprouts, per lb.	0 3-	...
Tomatos, per lb.	1 0-	...
Turnips, per bunch, new	0 5-	...

Potatos:—Market firm. For best samples, 85*s.* to 95*s.*; medium, 60*s.* to 70*s.*, and ordinary to inferior, 40*s.* to 50*s.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	7 0	Lemons, per case	21 0-	45 0
— Nova Scotia, brl.	8 0-	21 0	Pine-apples, Eng., lb.	1 6-	3 0
Cobs, per 100 lb.	140 0-	...	— St. Michael, each	2 0-	6 0
Grapes, per lb.	1 0-	3 0			

Plants in Pots.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Euonymus, in var., per dozen	6 0-	18 0
Aspidistria, doz.	18 0-	42 0	Evergreens, in var., per dozen	6 0-	24 0
— specimen plants, each	7 6-	10 6	Ferns, in var., per dozen	4 0-	18 0
Azaleas, various, each	2 6-	3 6	Ficus elastica, each	1 6-	7 0
Begonias, dozen	4 0-	12 0	Foliage plants, various, each	2 0-	10 0
Chrysanth., dozen	6 0-	15 0	Marguerites, doz.	6 0-	12 0
— extra large, each	2 0-	5 0	Palms in var., each	2 6-	21 0
Cyclamen, dozen	15 0-	24 0	Pelargoniums, scarlet, per dozen	6 0-	8 0
Cyperus, per dozen	4 0-	12 0	Roman Hyacinths, per dozen pots	9 0-	12 0
Dracæna terminalis, per dozen	30 0-	60 0	Solanums, per dozen	6 0-	12 0
— viridis, per doz.	12 0-	24 0			
Epiphyllum, per doz.	12 0-	18 0			
Ericas, various, doz.	8 0-	24 0			

Cut Flowers.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Marguerites, 12 bun.	3 0-	6 0
Azaleas, doz. sprays	0 9-	1 6	Narciss., paper-white,		
Bouvardias, per bun.	0 6-	0 9	French, doz. bun.	4 0-	6 0
Calla æthiopica, 12 bl.	3 0-	6 0	— Eng., doz. sprays	1 0-	1 6
Camellias, white, doz.	2 0-	4 0	Pelargoniums, 12 spr.	0 9-	1 6
— various, per doz.	1 0-	2 0	— scarlet, 12 spr.	0 4-	0 6
Carnations, 12 blms.	1 0-	2 0	Primulas, double, 12 sprays	1 0-	1 6
Chrysanth., 12 bun.	3 0-	9 0	Roman Hyacinths,		
Chrysanth., 12 blms.	0 6-	3 0	Eng., doz. sprays	0 9-	1 6
Cyclamen, doz. blms.	0 4-	0 9	Roses, Tea, per doz.	1 0-	3 0
Eucharis, per dozen	3 0-	4 0	— coloured, dozen	2 0-	4 0
Gardenias, 12 blooms	3 0-	6 0	— French, dozen	1 0-	2 0
Gladioli, 12 sprays	1 0-	1 6	— red, per dozen	1 0-	2 0
Heliotropes, 12 spr.	0 3-	0 6	— Safrano, dozen	1 0-	1 6
Lilac, white, Fr., bun.	6 0-	8 0	Stephanotis, 12 spr.	5 0-	8 0
Lilium, var., 12 bl.	2 0-	6 0	Tuberoses, 12 blms.	0 6-	1 0
Maiden Hair Fern, 12 bun.	4 0-	9 0	Violets, 12 bun.	1 0-	2 0
Mignonette, 12 bun.	2 0-	4 0	— French, bunch	1 6-	2 6
— French, per bun.	1 6-	2 0	— Parma, 12 bun.	3 0-	4 0

Orchid-bloom in variety.

Trade slack; but a little improvement upon last week.

SEEDS.

London: *Nov.* 27.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, state that there was but a poor attendance on to-day's seed market. As regards Red Clover seed, a little quiet buying is taking place, more particularly of choice French samples. American values exhibit no variation. White Clover is tending upwards. No change in Trefoil or Alsike. Rye-grasses are neglected. The colder weather hardens the market for Blue Peas. Birdseeds continue remarkably cheap. Mustard and Rape seed keep steady.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended November 23:—Wheat, 30*s.*; Barley, 29*s.* 11*d.*; Oats, 17*s.* 4*d.* For the corresponding period in 1888:—Wheat, 31*s.* 9*d.*; Barley, 27*s.* 8*d.*; Oats, 16*s.* 6*d.*

FRUITS AND VEGETABLES.

Spitalfields: *Nov.* 27.—Savoys, 2*s.* to 3*s.* per tally; Cauliflowers, 3*s.* to 6*s.* do.; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Brussels Sprouts, 1*s.* to 1*s.* 6*d.* per half-sieve; Spinach, 6*d.* to 9*d.* per bushel; Greens, 1*s.* to 1*s.* 6*d.* per dozen bunches; Turnips, 1*s.* 6*d.* to 2*s.* do.; Carrots, 1*s.* 6*d.* to 2*s.* do.; Parsley, 1*s.* 6*d.* to 2*s.* do.; Parsnips, 4*d.* to 8*d.* per score; Beetroots, 3*d.* to 6*d.* per dozen; Leeks, 1*s.* to 1*s.* 6*d.* do.; Endive, 1*s.* to 1*s.* 6*d.* do.; Mustard and Cress, 1*s.* to 2*s.* 6*d.* per dozen baskets; frame Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen; Carrots, 18*s.* to 28*s.* per ton; English Onions, 7*s.* to 7*s.* 6*d.* per cwt.; Spanish Onions, 5*s.* to 6*s.* per case; Belgian Onions, 5*s.* to 5*s.* 6*d.* per bag of 110 lb.; Dutch Onions, 5*s.* to 5*s.* 6*d.* do.; Horseradish, 1*s.* to 1*s.* 3*d.* per bundle; Celery, 8*d.* to 10*d.* do.; forced Rhubarb, 1*s.* 6*d.* to 2*s.* 6*d.* per dozen bundles; Pears, 2*s.* to 3*s.* per half-sieve; English Apples, 5*s.* to 6*s.* per bushel; American do., 16*s.* to 22*s.* per barrel; Cabbages, 1*s.* 3*d.* to 1*s.* 9*d.* per tally.

Stratford: *Nov.* 26.—There has been a good supply of all kinds of produce at this market during the past week, and a brisk trade was done, at the undermentioned quotations:—Cabbages, 2*s.* to 3*s.* 6*d.* per tally; Savoys, 3*s.* to 5*s.* do.; Cauliflowers, 4*s.* to 6*s.* do.; Turnips, 20*s.* to 30*s.* per ton; Carrots (household), 32*s.* to 37*s.* 6*d.* do.; do. (cattle feeding), 22*s.* to 25*s.* do.; Parsnips, 40*s.* to 50*s.* do.; Mangels, 14*s.* to 16*s.* do.; Swedes, 14*s.* to 16*s.* do.; Onions, English, 130*s.* to 140*s.* do.;

do. Dutch, 5*s.* 6*d.* to 6*s.* per bag; do. Oporto, 6*s.* 6*d.* to 8*s.* per case; Apples, English, 2*s.* 6*d.* to 7*s.* per bushel; Watercress, 6*d.* per dozen; Pears, 3*s.* to 6*s.* per bushel; Celery, 6*d.* to 9*d.* per roll; Chestnuts, 8*s.* to 11*s.* per half-bag.

POTATOS.

BOROUGH AND SPITALFIELDS: *Nov.* 26. — Best qualities rather short, and firm, with a steady sale. Inferior in full supply, dull and irregular. Regents, 50*s.* to 70*s.*; Hebrons, 50*s.* to 95*s.*; Magnum Bonums, 45*s.* to 80*s.*; Imperators, 45*s.* to 70*s.* per ton.

SPITALFIELDS: *Nov.* 27.—Quotations: Early Rose, 45*s.* to 50*s.*; Magnums, 45*s.* to 70*s.*; Regents, 55*s.* to 70*s.*; Imperators, 50*s.* to 70*s.*; Hebrons, 50*s.* to 65*s.* per ton.

STRATFORD: *Nov.* 26.—Quotations: Scotch, 60*s.* to 65*s.*; Magnums, light, English, 50*s.* to 65*s.*; dark, do., 45*s.* to 50*s.*; Imperators, 50*s.* to 65*s.*; Hebrons, 50*s.* to 65*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime old Clover, nominally, 115*s.* to 126*s.*; current prime, 86*s.* to 98*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 95*s.*; inferior, 20*s.* to 50*s.* Straw, 20*s.* to 40*s* per load.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

OAKEN POSTS ATTACKED BY FUNGUS.—Can any of our correspondents inform "X. Y. Z." what kind of dressing will preserve oaken posts which are attacked by fungus at 1 foot or more above the creosoted base? The evil has been caused by sand having drifted against the posts on one side only.

NOTICES TO CORRESPONDENTS.

ARBOR DIABOLI: *W. N. C.* So many plants have been associated with the evil spirit in folk-lore that we are at a loss to say what species of tree or other plant is the one meant by Arbor diaboli. We will just mention a few to show that they range through most dissimilar forms of plants:—Devil's Oak, Vervain (Germany), Sow-thistle (Russia), Roggenwulf, Rye-wolf, Fig tree (Italy), Lettuces (Surrey), Henbane, Teufel's auge (Germany), and in Wales applied to the Stichwort; ground Moss, Devil's-claws; a species of Orchis is the Devil's-hand Stinkhorn fungus is Devil's horn; Tritoma, Devil's-poker, &c. Mach more on the same subject may be found in the *Folk-Lore of Plants*, by Rev. Thiselton Dyer (Chatto & Windus).

AN UNCULTIVATED CORNER: *C. E.* Dig it deeply only one spit; burn part of the surface in heaps, with small coal, and when the burning is finished, fork this burnt ballast into the soil with strawy manure, lime, &c., and let it lay roughly till March. Plant strong-growing varieties of Cabbages, Rhubarb, Globe Artichokes for a year or two.

BOOKS. — CURIOSITIES OF PLANT LIFE: *A. B. C.* The more recent and best compilation of the kind is *Freaks and Marvels of Plant Life*, by M. C. Cooke, M.A., LL.D., published by the Society for Promoting Christian Knowledge, Northumberland Avenue, Charing Cross, London.—BRITISH PLANTS, &c.: *J. E. J. British Flora*, by Bentham & Hooker; not illustrated. (Reeve & Co., Henrietta Street, Covent Garden).

HEAVY CLAY LAND: *C. E.* Do not trench the soil more than two spits deep, unless it has been dug to a greater depth at some previous time, and even when digging it two spits deep, do not bring to the surface the bottom spits, unless it be almost equal in quality to that at the top, but loosen it and leave it. In trenching, work into the soil considerable quantities of rough stable manure but little decayed, burnt earth, sand, fine coal ashes, road scrapings, and materials of that nature, to increase the porosity of the soil. A dressing of leaf mould and quicklime after the trenching might be forked into the soil in February. The land will not be of much value as a garden unless it is drained, naturally or artificially. That, may be tested by digging pits to various depths, and taking notes of the water level in all of them. If it prove to be a water-clogged soil, put in rubble drains (not pipes if fruit or other trees are going to be planted), at from 4 to 5 feet deep, and 25 feet apart, and a good main drain to carry all the water away to a pond or stream.

HUNGARIAN BELL-BINE: *Wm. Reid.* Convolvulus sepium, with large white flowers, and arrow-shaped leaves; and C. arvensis, with rose and white flowers, are common plants on sterile places in the southern parts of Germany and Hungary, and quite hardy in this country. The former is called Zaunwinde, and the latter Ackerwinde, in the German language.

INSECTS: *I. I. W.* You have mistaken a very common English Ichneumon fly, belonging to the order Hymenoptera, for a beetle of the order Coleoptera. Your insect is parasitic upon the injurious caterpillars of Lepidoptera. *I. O. W.*

LAND FOR FRUIT IN WALES ON THE COAST: *D.* You could not do better than advertise your wants, either in local (Welch) papers; or by consulting an estate agent.

NAMES OF PLANTS: *L. L.* 1, Pinus silvestris; 2 and 3, varieties of Pinus Laricio.—*K. C.* 1, Cypripedium insigne; 2, Oncidium ornithorhynchum; 3, Oncidium flexuosum; 4, Adiantum Edgworthii; 5, Asplenium pulchellum.—*J. E. J.* 1, Asystasia coromandeliana; 2, Barberia cœrulea; 3, Chlora perfoliata.—*S. J. Taylor.* Anthericum lineare variegata.

PEAR AND APPLE TREES, UNFRUITFUL: *C. E.* If the trees are less than a dozen years old, they may be carefully dug up, with all the roots possible, the perpendicularly descending ones being cut away entirely, and damaged parts cut off, or pared over only, if the injury be slight. The trees may then be stood against a wall, and the roots covered with 6 inches of soil. Then remake the border, or, at least, incorporate a large portion of fresh turfy soil and some lime-rubble with the staple, treading the soil firmly in layers as the work of mixing proceeds. Replant the trees at depths of from 1 foot to 6 inches from the surface, using some of the finer portions of the soil about the roots; make all very firm, and mulch with strawy manure. Much pruning of the branches should not be done till 1891, but long fruiting-spurs may be cut off entirely, if existing on the lower sides of the branches, and others shortened in a little.

PRIMULA SINENSIS: *J. B.* Good blooms of decided colours — nothing extraordinary. The nurseryman you obtained them from is well known as a vendor of seeds of first-class Primulas.

RHUBARB CROWNS ROTTING: *C. E.* These have probably been injured by being trampled on. The sun-heat of this year certainly is not to blame for the injury.

SECRETARY OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION, &c.: *Gardener.* The office of the Institution is at 50, Parliament Street, Westminster; and the secretary is Mr. R. E. Cutler.

CATALOGUES RECEIVED.

JAMES COCKER & SONS, 59, St. Nicholas Street, Aberdeen, N.B.—Bulbs, &c.; also Roses and Fruit Trees.

F. C. HEINEMANN, Erfurt, Germany—Novelties.

GARLIES MITCHELL, Stranraer, N.B.—Forest and Ornamental Trees.

CHAS. TOOPE & Co., Stepney Square, Stepney Green, London, E.—Heating Apparatus, &c.

FREDERICK ROEMER, Quedlingburg, Germany—Seeds of Novelties (Trade List).

COMMUNICATIONS RECEIVED:—F. W. B. (next week).—T. L.—E. P.—Amsterdam, Ghent, and Edinburgh Correspondents.—H. V., Paris.—Glasnevin (next week).—National Rose Society.—P. B.—C. B.—W. K.—W. H.—E. R., Ghent.—W. S.—W. F.—J. S.—C. W. (send address).—H. W. W.—P. G.—N. E. B.—J. G. C.—M. G.—W. C.—A. B.—J. D.—W. E.—R. B. & Co.—F. R.—P. W.—R. A. R.—W. A. C.—A. E.—J. B.—L. S. D.—O. H.—E. H.

DIED, at Penlee, Tregony, Cornwall, on Sunday, November 24, aged fifty-eight, JOHN SIMPSON TYERMAN, Esq., formerly curator of the Botanic Gardens, Liverpool.

—— HENRY CURTIS, of the Devon Rosery, and St. Heliers, Torquay, called suddenly and peacefully to his rest on November 26, in his seventieth year.

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20×14	24×18

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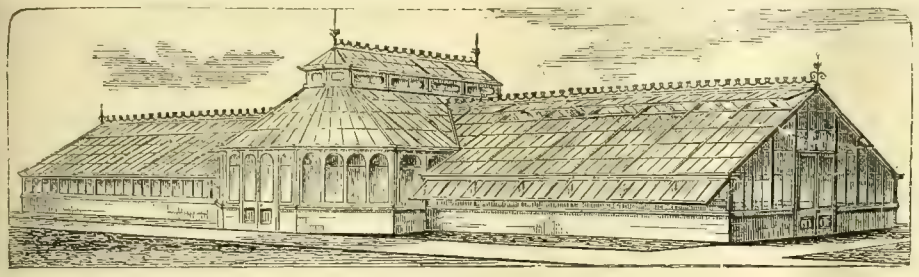
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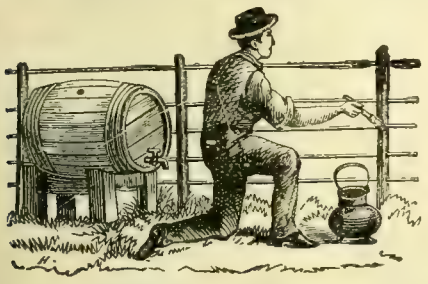
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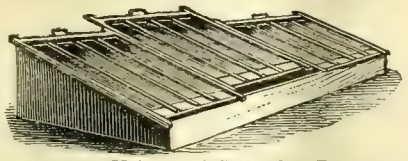
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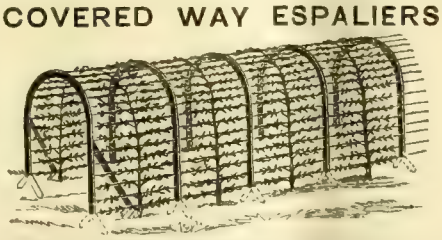
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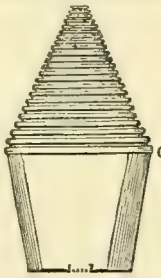
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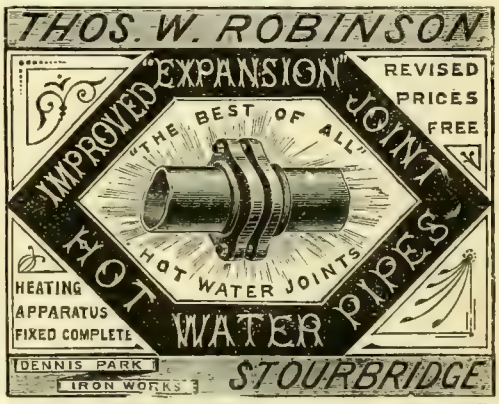
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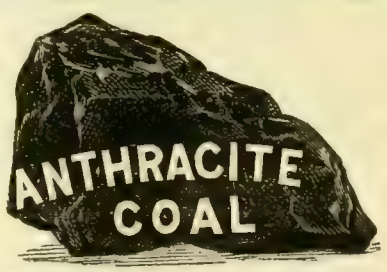


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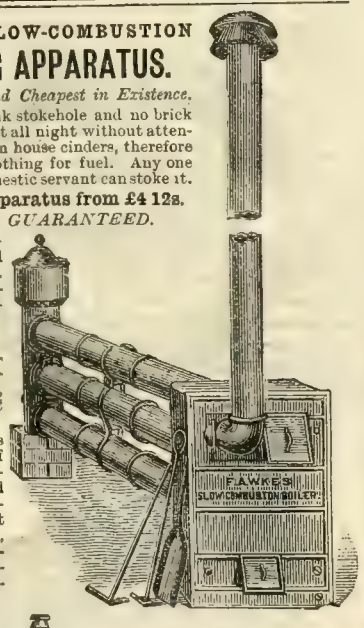
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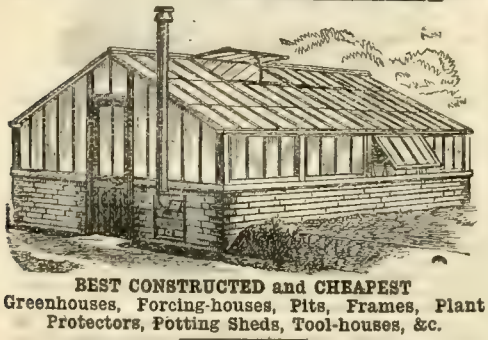
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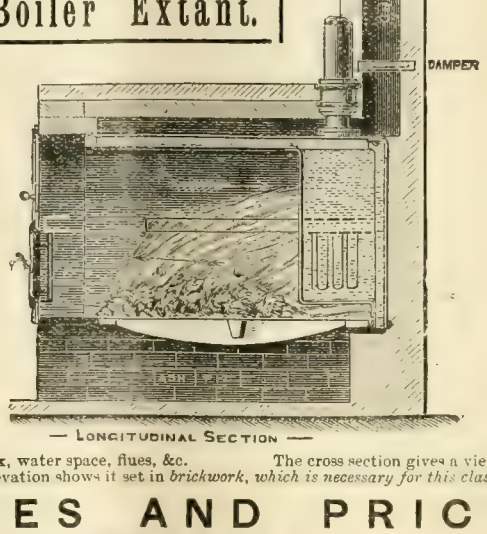
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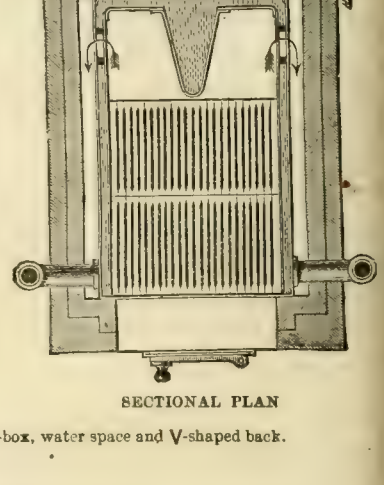
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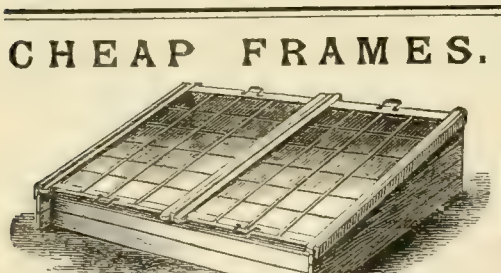
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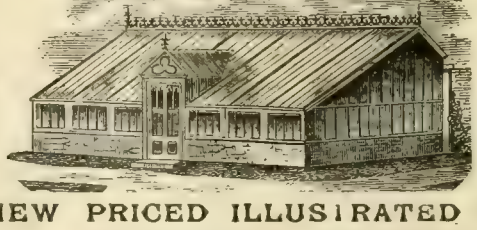
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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, November 30, 1889. Agent for Manchester—JOHN HEYWOOD

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2554.

No. 154.—Vol. VI. { Third Series. } SATURDAY, DECEMBER 7, 1889. [Regt. as a Newspaper. { PRICE 3d. Post-Free, 3½d.

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MONDAY, WEDNESDAY, and THURSDAY NEXT.
GREAT UNRESERVED SALES.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY, WEDNESDAY, and THURSDAY NEXT, at half-past 11 o'Clock each day, thousands of first-class HYACINTHS, TULIPS, CROCUS, NARCISSUS, and other BULBS, from Holland, lotted to suit Large and Small Buyers.

On view morning of Sale, and Catalogues had.

Tuesday Next.

10,000 LILIUM AURATUM, including a large quantity of gigantic BULBS, just received from Japan.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on TUESDAY NEXT, December 10, at half-past 12 o'Clock precisely, 10,000 unusually fine BULBS of LILIUM AURATUM, many of them gigantic roots just received from Japan in splendid condition; many hundreds of extraordinary fine roots of English grown LILIES, consisting of Browni, Hansoni, Giganteum, Humboldti, Wallisi, Colchesteri, Melpomene, and others; thousands of choice Hardy Perennials, comprising HOLLYHOCKS, POPPIES, HEUCHERA SANGUINEA (new), IRIS, CARNATIONS and PICOTEES, PINKS; 5,000 GLADIOLUS, MONTBRETTIAS, AMARYLLIS, and NARCISSUS; a variety of CALOCHORTI and other CALIFORNIAN BULBS.

On view morning of Sale, and Catalogues had.

Tuesday Next.

Standard and Dwarf ROSES of the best sorts; CONIFERS, AMERICAN PLANTS, ORNAMENTAL and FRUIT TREES, GREENHOUSE PLANTS, CARNATIONS, DUTCH BULBS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at the City Auction Rooms, 38 and 39, Gracechurch Street, London, E.C., on TUESDAY NEXT, December 10, at half-past 12 o'Clock, without reserve.

On view morning of Sale. Catalogues had at the Rooms, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Clapham Road, S.W.—Absolute Clearance Sale.
TUESDAY NEXT.

In consequence of the expiration of the lease.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, the Nursery, 262A, Clapham Road, S.W., near the Swan Inn, on TUESDAY NEXT, Dec. 10, at 12 o'Clock precisely, the Erections of 19 GREENHOUSES, Hot-water PIPING, BOILERS, PITS, GARDEN LIGHTS; also the whole of the Plants, 2000 PALMS, 4500 FERNS, 250 CAMELLIAS and AZALEAS, mostly white; 2 SPRING VANS, Bay HORSE, 4 MOWING MACHINES, GARDEN ROLLERS, and numerous other effects.

May be viewed the day prior to and morning of Sale. Catalogues had on the Premises, and of the Auctioneers, 67 and 68, Cheapside, London, E.C.

Wednesday Next.

PALMS, FERNS, and other PLANTS in variety, 100 Lots of DAFFODILS, first-class HYACINTHS, TULIPS, CROCUS, and other DUTCH FLOWER ROOTS, LILIES, and MISCELLANEOUS BULBS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 11, at half-past 11 o'Clock precisely, without reserve.

On view morning of Sale, and Catalogues had.

Friday Next.
IMPORTED ORCHIDS for UNRESERVED SALE.
500 ODONTOGLOSSUM ALEXANDRÆ.

MESSRS. PROTHEROE AND MORRIS will include in their SALE on FRIDAY NEXT, December 13, several cases of imported ORCHIDS for Sale, without reserve, including 500 Odontoglossum Alexandræ, 300 O. Halli xanthoglossum, and a quantity of BRAZILIAN ORCHIDS.

On view morning of Sale, and Catalogues had.

Friday Next.

THE COLLECTION of ESTABLISHED ORCHIDS, formed by the late A. Travers, Esq., of 28A, Addison Road, W.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, E.C., on FRIDAY NEXT, Dec. 13, at half-past 12 o'Clock, a choice COLLECTION of ESTABLISHED ORCHIDS, including several plants of Phalænopsis Schilleriana and P. amabilis, Cattleya labiata, autumn flowering; Lycaste Skinneri alba, Angræcum sesquipedale, and A. eburneum, Dendrobium, good plants of Cattleya Mendelii, C. Mossiæ, and C. Trianæ, Odontoglossums, &c.

On view morning of Sale, and Catalogues had.

Friday Next.
CYPRIPEDIUM ORPHANUM, in Flower.

MESSRS. PROTHEROE AND MORRIS will include the above Plant in their SALE of ORCHIDS on FRIDAY NEXT, December 13.

On view morning of Sale, and Catalogues had.

ABSOLUTE SALE.
In Bankruptcy.—*Re* Maurice Young.

THE MILFORD NURSERIES, GODALMING

HIGHLY IMPORTANT SALE
of the First Portion of the exceptionally choice and remarkably well-grown

NURSERY STOCK,

extending over several acres of ground, and comprising the healthiest Stock that has ever come under the hammer, affording to Gentlemen, the Trade, and Large Buyers, an unprecedented opportunity for securing unlimited quantities of SHRUBS and TREES in the best possible condition for transplanting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above by AUCTION, on the Premises, the Milford Nurseries, Godalming, Surrey, on MONDAY, December 16, and four following days, at 12 o'Clock precisely each day.

The stock comprises about 32,000 CONIFERS and EVERGREENS, 6,000 Young's GOLDEN JUNIPERS, 5,000 ORNAMENTAL BORDER SHRUBS beautifully furnished specimens, 5,000 LAURELS, 20,000 STANDARD ORNAMENTAL TREES, fine specimens, Young's WEEPING BIRCH and WEEPING ELMS, 103,000 FOREST TREES, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, of W. LEE, Esq., Trustee, 143½ High Street, Guildford; and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—In the event of severe frost, a reasonable time will be allowed purchasers for the removal of the Stock.

The Nurseries, West Wickham, Kent.
UNDER BILL OF SALE.
GREAT CLEARANCE SALE OF ENTIRE STOCK, WITHOUT RESERVE.

MR. W. LEVENS will SELL by AUCTION, on MONDAY, December 16, 1889, and three following days, at 11 for 12 o'Clock each day, the whole of the STOCK on the above NURSERIES, comprising 40,000 Conifers, 3000 Border and Specimen Shrubs, consisting of Wellingtonias, Thuiopsis borealis, Cupressus Lawsoniana, Golden Yews, Golden Hollies, Cupressus Lawsoniana erecta viridis, Thuia aurea, Aucubas, Piceas, Thuia Lobbi, Retinospora, Araucaria erecta, &c.; 1000 Gold and Silver Hollies, 5000 Thuia Lobbi, 200 Aucubas, 3000 Portugal Laurels, 5000 Cupressus Lawsoniana, 2000 Green Hollies, 6000 Laurels rotundifolia, 300 English Yews, 1000 Berberis Darwinii, 5000 Pinus cembra, Pinus excelsior, austriaca, &c.; 20,000 Fruit Trees, comprising Apples, Pears, Plums, Cherries, Nectarines, Peaches, &c.; 10,000 Limes, Laburnums, Mountain Ash, Plane, Poplar, Beech, and other Forest Trees; 20,000 Manetti and Brier Stocks, fit for immediate working; 1,000 small Conifers, 3000 Deciduous Shrubs, Standard and Dwarf Roses; Orchids, Stove and Greenhouse Plants; Greenhouses, Pigstyes, Frames, Garden Lights, Water Tanks, Implements, Vans, Carts, Harness, a Boar Pig, 2 Breeding Sows, a Sow with 10 Pigs, a quantity of Fowls, 3 valuable Horses, and numerous effects.

N.B.—West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

May be viewed any day prior to Sale. Catalogues obtained of the Auctioneer, Railway Bridge, Beckenham.

GROUND WANTED, in neighbourhood of St. John's Wood or Maida Vale, to build large Glasshouse. With Dwelling-house attached would not be objected to.—Apply, C. WOOD AND SON, 21, High Street, Marylebone.

FLORIST and NURSERY BUSINESS to be SOLD as a Going Concern. Price £100, or valuation. Greenhouses well heated, and about half an acre of Ground. Nominal rent, and situated within 2 miles of Covent Garden.

Apply, W. CALLINGHAM, Prince's Square Nursery, Kennington, S.E.

FOR DISPOSAL, a SEED, NURSERY, FLORIST, and FRUIT BUSINESS, in a good Market Town, West of England.—To a pushing man, with moderate capital, this would prove a paying concern, as the business is a going one, having a large connection with Farmers and the principal Nobility and Gentry in the county. For particulars, Address M. T., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

TO LET, a SMALL NURSERY.—300 feet run of Glass, well-heated. Good Six-roomed House. Low Rent. Stock, £75, or offer.

Apply to A. B., 161, High Road, Lee, London, S.E.

To Gardeners, &c.

TO LET, a nice compact FRUIT FARM and MARKET GARDEN, consisting of 5 acres, at Sherburn in Elmet, half an hour's ride by Rail to Leeds. Good Dwelling-house, consisting of Dining, Drawing, Breakfast Room, and Kitchen, Bath-room, Pantry, Coal-house, &c., on ground floor; 4 Bed-rooms and Servants-room, Wash-house, Coach-house, 2-stall Stable, Pigstyes, Poultry-houses, Greenhouse, Pits, Frames, large Orchard, scores of Apple, Plum, and Pear Trees; about 1600 Gooseberry and Currant Trees; an acre of Strawberries; nearly an acre of Raspberries in good bearing condition. To a steady respectable person with good references, the proprietor would let at a very reasonable rent. Apply to WILLIAM TAYLOR, Saville House, Princes Square, Harrogate.

Fifty Nurseries, Market Gardens, Florist and Seed
BUSINESSES to be DISPOSED OF.

MESSRS. PROTHEROE AND MORRIS' HORTICULTURAL REGISTER contains full particulars of the above, and can be obtained, gratis, at 67 and 68, Cheapside, London, E.C.

To Nurserymen.

THE WILLESDEN BURIAL BOARD are prepared to RECEIVE TENDERS for the SUPPLY and PLANTING of the following TREES and SHRUBS, at their New Cemetery, at Church End, Willesden, viz.:—

90 PLANE TREES.
90 LIME TREES.
40 LOMBARDY or BLACK POPLARS.
200 PORTUGAL LAURELS.

Particulars and Forms of Tender may be obtained on and after Monday, December 9, 1889, upon application to Mr. J. SALMON, Superintendent of the Cemetery, 10, Vicarage Villas, Willesden, N.W.

Tenders to be delivered not later than noon on Friday, December 13, 1889, addressed to W. B. LUKE, Esq., Chairman of the Burial Board, Vestry Hall, Church End, Willesden, N.W.

The Board do not bind themselves to accept the lowest or any Tender.—By order,

W. A. TOOTELL, Vestry Clerk.—Dec. 4, 1889.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense stock, to which they are constantly adding, and all are offered at the lowest possible prices. LISTS with Prices and particulars post-free on application to the Company,

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

POETICUS NARCISSUS, market size, 5*s.* per 1000; Flowering Bulbs, thirds, 1*s.* 3*d.* per 1000, or 8*s.* per cwt. CHRISTMAS ROSES, good clumps, 16*s.* per dozen. TRITOMA UVARIA, 16*s.* per 100, at Spalding.

DALCORN, Spalding.

The Best Present for a Gardener.

VINES and VINE CULTURE.
The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5*s.*, post-free 5*s.* 6*d.*
A. F. BARRON, Royal Horticultural Society, Chiswick.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

SEAKALE for FORCING, superior selected Crowns, 80*s.* per 1000; under 500, 9*s.* per 100. Orders to be accompanied by Cheque or Post-office Order. — ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, S.W.

LILIES and ORCHIDS.—An immense stock of recently imported Plants, compels a sale of the Established Plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains; see public journals for high prices recently obtained. The special offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and trade.

My first consignments of LILIUM AURATUM have arrived, prices 4*d.*, 6*d.*, 9*d.*, 1*s.*, and 1*s.* 6*d.* each; per 100, 30*s.*, 35*s.*, 45*s.*, 55*s.*, and 70*s.* Liberal allowance to the Trade.

Apply for CATALOGUE to
W. GORDON, The Nurseries, Amyand Park Road, Twickenham.

Special Offer to the Trade.

GOOSEBERRIES, Whitesmith, Crown Bob, Warrington Red, and many other leading sorts, at 12*s.* 6*d.* per 100, £5 per 1000; sample dozen, 2*s.* 6*d.* Also DWARF H. P. ROSES, from our well-known collection, at 21*s.* per 100, £10 per 1000; sample dozen, 3*s.*

GLOIRE DE DIJON, Cheshunt Hybrid, five to six feet shoots, 40*s.* per 100, 6*s.* per dozen, for cash with order.

JOSHUA GREENACRE, Nurseries, Stone Hills, Dereham Road, Norwich.

"Now is the Time to Plant Trees."

ROBERT NEAL begs to call the attention of Gentlemen, Local Boards, Builders, and others who intend planting this season, to his large and varied stock of Shrubs, Standard, Ornamental, and FOREST TREES, FRUIT TREES, ROSES, CLIMBING PLANTS, &c., which, being well transplanted, are in fine condition for removal, and having been grown in the vicinity of London, are especially adapted for town and street plantings. Special quotations for large quantities, delivery free within a radius of six miles of the nursery. Inspection of the Stock solicited. CATALOGUES free on application. Also to offer extra fine forcing SEAKALE and RHUBARB.

The Nurseries, Trinity Road, Wandsworth Common.

New Fern, 1889.

ADIANTUM WALTONII DIFFUSUM.—First-class Certificate was awarded by the Royal Horticultural Society on October 9, 1888. See opinions of the Horticultural Press, October 11 and 13, 1888.

The Executors of Henry Walton have pleasure in announcing that this very fine Adiantum is now being offered to the Public. We have every confidence in recommending it, and feel certain that it will give every satisfaction either as a specimen plant or for cutting purposes, the fronds being light and graceful, three to five times divided, from 2 to 2½ feet in length, and, when mature, are of a pleasing shade of glaucous green. A great improvement on A. Waltonii (T. Moore), and a more desirable variety than A. fragrantissima (see *Gardeners' Chronicle*, November 16, 1889, p. 557). All who have seen the parent plant have pronounced it to be a great acquisition.

Strong Plants, 3*s.* 6*d.* each.

Small Plants, from boxes, 1*s.* 6*d.* each, 12*s.* per dozen.

We hold a fine healthy stock of French and Show PELARGONIUMS, in 3-inch pots, per dozen, 4*s.*; per 100, 30*s.*, our selection. Price to the Trade on application.

Edgend Nursery, Brierfield, near Burnley.

THE FOLLOWING TREES, having stout, straight stems, fine heads, and splendid roots, all having been transplanted within two years:—

ACACIA BESSONIANA, 12 to 14 feet.
,, SEMPERFLORENS, 12 to 14 feet.
ACER DASYCARPUM, 12 to 16 feet.
,, ,, WIERII LACINIATA, 10 to 14 feet.
,, NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
,, REITENBACHII, 12 to 14 feet.
,, SCHWEDLERII, 12 to 16 feet.
,, WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, common, 10 to 12 feet.
,, Purple, Pyramids and Standards, 10 to 16 feet.
BIRCH, Silver, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
,, ,, Double White, 10 to 16 feet.
,, ,, Scarlet, 12 to 16 feet.
,, Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
,, Guernsey, 12 feet.
LIMES, 12 to 16, and 20 feet.
,, Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
,, Scarlet, American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR, Bolleana, 10 to 14 feet.
,, canadensis nova (the true variety), 12 to 16 feet.
,, Lombardy, 14 to 16 feet.
SYCAMORE, Common, 14 to 16 feet.
,, Purple, 14 to 16 feet.
THORNS, Double, Scarlet, 8 to 10 feet.
,, ,, White, 8 to 10 feet.
WALNUTS, Common, 10 to 12 feet.

WEEPING TREES.

BEECH, Weeping, Pyramids and Standards, 8 to 12 feet.
,, ,, Purple, Pyramids and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 6 to 10 feet.
OAK, Weeping, English, Standards, 10 to 12 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.

ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

CHRYSANTHEMUMS, Grand Novelties:—Mrs. S. Coleman, 5*s.*; Ada Spaulding, 5*s.*; John Lambert (incurved), 3*s.* 6*d.*; Sunset, 5*s.*; W. W. Cowles, 3*s.* 6*d.*; J. C. Price, 3*s.* 6*d.*; A. H. Neve, 3*s.* 6*d.*; Mrs. I. Clarke (syn. Volunteer), 3*s.* 6*d.*; Beauty of Castlewood, 3*s.* 6*d.*; Countess of Lytton, 1*s.* 6*d.*; Sir Joseph (Japanese), 1*s.* 6*d.*; E. C. Jukes, 3*s.* 6*d*; Mrs. Judge Benedict (anemone), 2*s.* 6*d.* Orders executed in rotation in March.

The following and all other Novelties can be supplied now in Cuttings:—Mrs. Alpheus Hardy, 1*s.* 6*d.*; Mrs. Andrew Carnegie, 1*s.* 6*d.* CATALOGUE in press, price 6*d.*, gratis to customers. Cultural Directions by W. Tunnington.

ROBERT OWEN, Floral Nursery, Maidenhead.

Planting Season.

JOHN PERKINS AND SON hold large stocks of the following, which they are offering at very low prices. Special offers on application.

BIRCH, 1½ to 2, 2 to 3, and 3 to 4 feet.
PINUS AUSTRIACA, 1½ to 2, and 2 to 2½ feet.
,, LARICIO, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
BERBERIS AQUIFOLIA, 1 to 1½ feet.
COTONEASTER SIMMONSII, 1½ to 2, and 2 to 3 feet.
HAZEL, 2 to 3, and 3 to 4 feet.
HORNBEAM, 1½ to 2, and 2 to 3 feet.
LAURELS, Common, 1½ to 2, 2 to 3, and 3 to 4 feet.
,, CAUCASICA, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
,, ROTUNDIFOLIA, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
SNOWBERRY, 1½ to 2, 2 to 3, and 3 to 4 feet.
YEWS, English, 1½ to 2, 2 to 3, and 3 to 4 feet.
QUICK, on Whitethorn, strong transplanted.

Samples on application; inspection of our stock invited.

Billing Road Nurseries, Northampton.
Postal Address—52, Market Square, Northampton.
Telegraphic Address—"Quick, Northampton."

Special Cheap Offer.

ISAAC MATTHEWS AND SONS have to offer 200,000 very fine plants of RHODODENDRON for forcing, Cunningham's White, Jacksonii, Caucasicum pictum, in sizes varying from 1 to 3 feet, at very low prices.

PONTICUM RHODODENDRON, from 3 to 6 inches, and intermediate sizes up to 4 feet, about 800,000; Seedling Hybrids, in sizes from 4 to 6 inches to 3 feet, about 400,000. All fine, bushy, well-rooted stuff.

HOLLIES, Common LAURELS, Portugal LAURELS, English YEWS, CUPRESSUS RETINOSPORA, AZALEAS, and other sorts of Surplus Nursery Stock too numerous to mention, at very reduced prices. 800,000 strong 4-yr. and 5-yr. THORN QUICK.

For prices and particulars apply to the Nurseries, Milton and Wetley Moor, Stoke-on-Trent.

CATALOGUES free on application.

SPECIAL TRADE OFFER.

LILIUM AURATUM—JUST ARRIVED.

Extra fine bulbs.—Sound and firm.—Hard as bricks.

Bulbs, 8½ inches round, 4*s.* per dozen; 20*s.* per 100.
,, 9½ ,, ,, 6*s.* ,, 35*s.* ,,
,, 11½ ,, ,, 9*s.* ,, 60*s.* ,,

Extra Selected.

BETTER CONDITION IMPOSSIBLE.

First Shipment of 8000 *now on Offer.*

SPIRÆA JAPONICA, extra strong clumps, 16*s.* per 100.
Double African TUBEROSES, extra large, 2*s.* per dozen; 10*s.* per 100.
Berlin Crowns LILY OF VALLEY, 36*s.* per 1000; 4*s.* 6*d.* p. 100.
Selected Clumps ditto, 7*s.* per dozen.
LILIUM HARRISSI (true), 5 to 7 inches, 6*s.* per dozen; 35*s.* per 100.

All finest quality. Order early. Fifties supplied at 100 rate.

Large quantity of ORCHIDS.—Cheap.

W. H. HUDSON,
Bulb Grower and Importer, West Green Road,
TOTTENHAM, LONDON.
Address for Telegrams:—"AURATUMS," London.



CUTBUSH'S MILL-TRACK MUSHROOM SPAWN.—Too well known to require description. Price 6*s.* per bushel (1*s.* extra per bushel for package), or 6*d.* per cake; free by parcel post, 1*s.*

None genuine unless in sealed packages and printed cultural directions enclosed, with our signature attached.

WM. CUTBUSH AND SON, Nurserymen and Seed Merchants, Highgate Nurseries, N.

FOR FRUIT TREES OF ALL KINDS, WRITE TO GEO BUNYARD & CO MAIDSTONE, KENT. WHO CULTIVATE 800 KINDS TRUE TO NAME. ILLUSTRATED LIST 6 STAMPS. LIST OF NAMES GRATIS.

FRUIT TREES. IMMENSE STOCK of remarkably well-grown Trees. Inspection invited. New descriptive CATALOGUE on application.

DICKSONS THE NURSERIES, **CHESTER.**
(LIMITED).

FOR PLEASURE AND PROFIT.

FRUIT. Nothing so profitable and easy to grow. 74 Acres in stock.
See CATALOGUE for simple Instructions and kinds of Trees to suit all soils.

ROSES. 20 Acres. Bushes 8*s.* per dozen, 60*s.* per 100.
☞ Packing and Carriage Free for Cash with Order.

ROSES IN POTS from 15*s.* per dozen.

ORNAMENTAL TREES, 91 Acres.

4 Acres of Glass.

CLEMATIS (80,000), 12*s.*, 18*s.*, and 24*s.* per doz.

SEEDS & BULBS. VEGETABLE, FLOWER, and FARM.

Descriptive LISTS free.

RICHARD SMITH & CO.,
WORCESTER.

Special Offer of Large Well-grown Evergreens and CONIFERS, frequently transplanted, standing singly, and every plant a specimen, offered by

WILLIAM WOOD AND SON,
The Nurseries, Maresfield, Uckfield, Sussex.
Single plants supplied if required at the dozen price.

Coniferæ.

ABIES DOUGLASII, 5 to 6 ft., 18*s.*; 6 to 7 ft., 24*s.* per dozen.
,, ,, GLAUCA, very fine, 5 to 6 feet, 24*s.* per dozen.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15*s.*; 5 to 6 feet, 18*s.*; 6 to 7 feet, 24*s.* per dozen.
CUPRESSUS LAWSONIANA, 6 feet, 18*s.*; 6 to 7 feet, 24*s.*; 7 to 8 feet, 30*s.*; 8 to 10 feet, 40*s.* per dozen.
,, LAWSONIANA ERECTA VIRIDIS, extra fine, 4 feet, 42*s.*; 5 feet, 60*s.* per dozen.
PICEA PINSAPO, 2½ to 3 feet, 30*s.*; 3 to 4 feet, 42*s.* per dozen.
,, PECTINATA (Silver Fir), 3 to 4 feet, 18*s.*; 4 to 5 feet, 22*s.* per dozen.
PINUS AUSTRIACA, 3 to 4 feet, 20*s.*; 4 to 5 feet, 28*s.* per doz.
,, LARICIO, 4 to 5 feet, 28*s.*; 5 to 6 feet, 36*s.* per dozen.
,, SYLVESTRIS (Scotch Fir), 4 to 5 feet, 20*s.*; 5 to 6 feet, 25*s.* per dozen. From nursery rows, 2 to 3 feet, 35*s.*; 3 to 3½ feet, 50*s.* per 1000.
,, INSIGNIS, 5 to 7 feet, 30*s.* per dozen.
,, CEMBRA, 3 to 4 feet, 15*s.* per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, 12*s.* per dozen.
RETINOSPORA PLUMOSA, 5 feet, 20*s.*; 6 feet, 24*s.* per dozen.
,, ,, AUREA, 3 feet, fine, 20*s.* per dozen.
THUJOPSIS DOLABRATA, 2 to 3 ft., 18*s.*; 3 to 4 ft., 24*s.* doz.
,, BOREALIS, 4 to 5 feet, very fine, 30*s.* per dozen.
TAXUS ELEGANTISSIMA, 1½ to 2 feet, 20*s.* per dozen.
THUIA LOBBII, 4 to 5 ft., 20*s.*; 5 to 6 ft., 30*s.*; 6 to 7 ft., 36*s.*

Large Evergreens.

LAURELS, Common, colchicum, caucasicum, and rotundifolium, 3 to 4 feet, 12*s.*; 4 to 5 feet, 18*s.*; 5 to 6 feet, 24*s.* per dozen.
,, Portugal, 2½ to 3 feet, 24*s.* per dozen.
TREE BOX, green and variegated, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* per dozen.
BERBERIS DARWINII, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* doz.
LAURUSTINUS, 1½ to 2 feet, 10*s.*; 2 to 2½ feet, 15*s.* per dozen.
GRISLINIA LITTORALIS, 1 to 1½ ft., 10*s.*; 1½ to 2 ft., 15*s.* doz.
OLEARIA HAASTII, 1½ to 2 feet, 9*s.* per dozen, 60*s.* per 100.
COTONEASTER SIMMONSII, 3 to 4 feet, 8*s.* per dozen.
GORSE, double, fine, in pots, 8*s.* per dozen, 50*s.* per 100.
DECIDUOUS FLOWERING SHRUBS, consisting of Althæa frutex, Deutzias, Forsythias, Guelder Rose, Rhus, Ribes, Sambucus, Spiræas, Syringas, &c., at 4*s.* per dozen, 22*s.* 6*d.* per 100.
WEIGELAS, a fine collection, 6*s.* per dozen, 40*s.* per 100.

CATALOGUES Gratis on application.

J. E. DIXON'S "PRESIDENT CARNOT" BRUSSELS SPROUTS.

J. E. D. will be able to supply this extraordinary fine strain at 1*s.* per packet, for season 1890. The following testimonial (one of many similar) has been received from—

Mr. GEORGE SUMMERS, *Gardener to the* Earl of Scarbrough:—"DEAR SIR,—I have grown your President Carnot Brussels Sprouts by the side of several other well-known varieties, and have come to the conclusion that it is the hardiest and best variety grown."

London Wholesale Agents:—HURST AND SON, 152, Houndsditch, E.; COOPER, TABER AND CO. (Limited), 90, Southwark Street, Borough, S.E.

JOHN ETHERINGTON DIXON (second son of the late Edmund Philip Dixon, Seed Merchant, Hull), Seedsman, 21 and 23, Lord Street, Gainsborough.

FRUIT TREES—FRUIT TREES.

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THE
Gardeners' Chronicle.

SATURDAY, DECEMBER 7, 1889.

TONGUES IN TREES.

(*Continued from p.* 558.)

SOMETIMES a superstition is recorded in the name of the plant; thus the Celandine, from Chelidon, the Swallow, exudes a yellow juice, which, applied by the old birds to the eyes of young swallows who are born blind, gives at once the power of sight. The Hawkweed has the same virtue with young hawks. The fumitory, from *fumus*, smoke, was really so called because it makes the eyes smart and water as does the smoke of burning wood. The meaning was lost, and supplied by the derivation *fume-terre*, with the belief that vapour rising from the earth was arrested and transformed into the plant. The Devil's-bit is a Scabious, with a premorse or shortened root, used so successfully for all manner of diseases that the devil spitefully bit it off, and for ever checked its growth. The Eye-bright, or Euphrasy, bore mucous seeds, which were applied to cure ophthalmia; hence the belief that its application cleared the spiritual vision, and gave insight into the shadowy world:—

> "Michael from Adam's eyes the film removed,
> . . . then purged with Euphrasy and rue
> The visual nerve; for he had much to see."

The Mandrake, from misconception of its first syllable, gathered round it a host of wild credulities. Bearing a large forked tuber, resembling the human form, it was held to remove sterility, a belief expressed by Rachel in the Book of Genesis, and with this idea was sold for high prices in the Middle Ages. The demand exceeding the supply, dealers used to carve the large roots of the white Bryony into the figure of a man, and insert grains of Millet in the head and face, which soon sprouted into the semblance of hair and beard. These monstrosities, offered as genuine Mandrakes, fetched in Italy, Sir Thomas Brown tells us, as much as thirty gold ducats, and were sold largely in England. It was thought that the plant would grow only beneath a

murderer's gibbet, nursed by the fat which fell from his decaying body: hence it formed an ingredient in the philtres or love potions and other hell-broths of witches; and since the root when torn from the earth was supposed to emit a shriek, which none might hear and live, terrible devices were invented to obtain it. Readers of Thalaba will remember the fine scene in which Khawla procures the plant to form part of the waxen figure of the destroyer. One more superstition belongs to this class, the belief in fairy rings, due to the law which governs the fructification and development of fungi. Dung of bird or cattle falls upon the ground; a Mushroom grows; from its mycelium or spawn springs a crop of fungi which exhaust the soil of carbon, nitrogen, phosphorus, potash, storing them in its own substance. The spawn extends centrifugally, and a fresh crop springs at a distance from the centre; and so the growth proceeds in a yearly enlarging circle. The grasses within the ring avail themselves of the manure offered by the decomposition of the rich older mycelium, and the coarsest and rankest species gain the victory and grow. These soon exhaust the richness, leaving poor soil and herbage, and so we get the phenomenon of a ring of strong coarse grass, annually extending, with fungi on its outer margin, and its interior poor and barren.

Doctrine of Signatures.

The medical beliefs revealed by many names are not less curious than their legendary associations. It was the conviction of the old herbalists, or simplers, that God had not only provided a special plant as a cure for every disease, but had made their curative power evident by stamping them with some resemblance to the part or to the malady they were meant to heal; and this faith, known to students of our older botany as the "Doctrine of Signatures," lurks in many an English name. The Lungwort, its leaf spotted with tuberculous scars, was a cure for consumption; the Liverwort, liver-shaped in its green fructification, was a specific for bilious maladies; the scaly pappus of the Scabious for cutaneous eruptions; the throat-like corolla of the Throatwort, or Canterbury Bell, for bronchitis; the Saxifrage, cleaving the hard stones with penetrating fibres, was efficient against calculus; the Scorpion-grass, known better as Forget-me-not, whose flower-spike dimly resembles a scorpion's tail, was an antidote to the sting of that and other venomous creatures; the Moon-daisy averted lunacy; the knotty tubers of Scrophularia were lenitive to scrofulous glands; the Kidney-vetch, Birthwort, Nipplewort, Spleenwort, were all appropriated to resemblances, real or fancied. The pretty Toad-flax of our hedges and walls owes its name to a strange mistake. Believed to be the cure for a complaint known as buboes, it received the Latin name, Bubonium. A confusion between Bubo and *Bufo*, Latin for a toad, gave birth to its present title; and, the name once changed, stories were not long wanting that sick or wounded toads had been seen to nibble it, and to recover health. Similar distortions occur in non-medical names, some transparent to an educated eye, others strangely recondite. Any scholar will detect in Acacia the Greek for *guilelessness;* in the Amaranth, which wreathed the brows of Milton's worshipping angels, the Greek for *unfading;* in the Periwinkle the Pervinca used to *bind about* the head; in Lettuce, the meaning *milky*, in Geranium the descriptive *Crane's-bill*. In the Plane he will recognise the *Platanus* of the Latin poets; in the Vine the *οἶνον* or *vinum*, whose Sanscrit root is present in our *twine* and *twist;* in the Rose, the *ῥοδον* of Homer and the rosa of Virgil; sacred to Harpocrates, the god of silence, suspended in banqueting halls as a sign that convivial talk, circulating *sub rosâ*, was not to be elsewhere repeated. He will understand that the Basil, planted by "poor simple Isabel" in the flower-pot which held her murdered lover's head, was the *royal* plant, infused, perhaps, of old in royal baths or unguents; that the Belladonna, or Deadly Nightshade, was used as a collyrium and a cosmetic to make Italian ladies beautiful. He will not so readily discover that the Tansy of our cottage gardens is the Greek *ἀθανάσια, immortality*, administered to Ganymede, that he might be fitted for his life in heaven; that the common Yarrow is the *ἱερα* or *holy* herb, pledged to heal all wounds with its fragrant leaves; that Nasturtium is *Nose-twister*, from its pungent smell; that Whortle-berry is *Myrtle-berry*, Bilberry is *blue-berry;* that Eglantine is *aculeata*, the *prickly* Sweet Brier or Dog-rose; that Liquorice is an anglicising of the Greek *glycirrhiza*, Sweet-root; that Lavender, from *lavare*, to wash, was in the twelfth century, Northern English for washerwoman, its sweet spikes then as now being laid among fresh linen; that the Service tree is the Latin *Cerevisium*, beer, its leaves having been used to flavour ale; that the pretty little Squinancywort was a remedy for the *Kynanche*, or dog-choker, which we have modernised into *Quinsy;* that Mushroom is the *Muscarius*, or Fly-bane, because a particular Agaricus, pounded and mixed with milk, was a popular insecticide. *W. T., Rugby.*

(To be continued.)

New or Noteworthy Plants.

STAPELIA ERECTIFLORA, *N. E. Br.* (*new sp.*)

This plant was introduced about twelve years ago by Sir Henry Barkly, when Governor of the Cape Colony. It was discovered by Mr. Bain on the Karoo, in the Clanwilliam district, a few miles beyond the Cederburg Mountains. It was cultivated at Kew for many years, but is now lost. Being anxious to obtain it again for that establishment, if it exists in any other collection, I publish this description of the plant, which is one of the most distinct and remarkable of the whole genus, and one of the most free-flowering; on a small plant I have had from 30 to 40 of its peculiar turk's-cap-like flowers open at once. Each flower lasts from eight to fourteen days, and has scarcely any perceptible odour.

The stems are 4—7 inches high, 4—5 lines thick, 4-angled, with concave-channelled sides, branching at the base, and flowering along their sides, the same stem often producing several cymes. The cymes are 1—4 flowered, rarely more. The pedicels vary from 2—5 inches in length; they are quite erect, and nearly always overtop the stem that bears them; they are about 1 line thick at the base, slightly tapering upwards, purplish, and pubescent. Calyx-lobes lanceolate, acute, 1½ line long, pubescent. Mature buds broader than long, rather depressed, with a short blunt point. Corolla small, turk's-cap-like in form, the lobes being rolled back so closely as to entirely conceal the back, leaving only the bases of the calyx lobes visible; when thus open, the flower is about 4½—5 lines in diameter; the lobes are broadly ovate, acute, pubescent and purplish on the back, the face is without wrinkles, purple-brown in colour, and densely clothed with closely adpressed white hairs, the effect being that the flower appears of a purplish-grey colour. Outer coronal segments brownish-red, 1¾ line long, ½ line broad, linear, with two faint grooves down the face, and the subobtuse apex shortly upturned. The segments of the inner corona are quite simple, without any crest or wing on the back, subulate, 2 lines long, strongly recurved, honey-yellow.

I shall be extremely obliged to any one who may possess this plant, which I know has been distributed from Kew, if they will kindly send to me, or to Kew, a cutting of it, in exchange for other species. *N. E. Brown, Herbarium, Kew.*

Cœlogyne Rossiana, *Rchb. f.*

This is a pretty little Cœlogyne, somewhat intermediate in general appearance between C. flaccida and C. lentiginosa, though abundantly distinct from either. It was described in these columns in 1884, pt. 2, p. 808, as a native of Burmah, but seems to have remained comparatively rare in gardens up to the present time. Quite recently a plant which had been sent by Mr. H. J. Ross, of Florence, flowered in the Kew collection, together with a second plant received from another source under a different name, which proved to be erroneous. Then it came from Messrs. Fred. Horsman & Co., of Colchester, and from Sir Trevor Lawrence—in both cases for determination. The flowers are a little over 1½ inch in diameter, the sepals and petals creamy-white, the former lanceolate-linear, and the latter very narrow. Lip three-lobed, the disc white, with three crenulate keels, the middle one being rather obscure; front lobe rounded, subobtuse, constricted a little at the base, sides light yellow, light sienna-brown in front of this, and apex white; side lobes rounded, and of a uniform light sienna-brown. It seems to be quite a late autumn bloomer. *R. A. Rolfe, Herbarium, Kew.*

PRIORWOOD, MELROSE.

Priorwood is the residence of Alexander Curle, Esq., and is about five minutes' walk from the Melrose Railway Station. Though not of great extent, it is of interest to horticulturists, and particularly to the cultivator of Orchids. The owner is an enthusiastic admirer of these plants, as well as a discriminating collector, and he possesses many rare and valuable species and varieties. The ruins of Melrose Abbey stand immediately outside the northern boundary of the pleasure-grounds, and from many points glimpses are obtained of the venerable pile. The great age of many of the park trees, and especially of some Pear trees in the kitchen garden, is suggestive of their having been planted in the days of ecclesiastical domination. One huge specimen of the latter, with a trunk 2 feet in diameter, and a healthy spreading top, occasionally bears fair crops, but this season it had no fruit. The variety is without a name.

Trained on the front of the gardener's house at the north-west corner of the kitchen garden, a thriving young Moorpark Apricot, with a spread of branches of about 18 feet, was at the time of my visit, carrying a heavy crop of fine fruit; but that was no exception, as all stone fruit seems to do well, as an inspection of the wall and standard trees of Plums proved. The crops were heavy, and the size and quality of the fruit excellent. Apples on dwarf standard and pyramid trees were plentiful and good. The more notable varieties were—Peasgood's Nonsuch, Stirling Castle, Kerry Pippin, Hawthornden, new and old; Lord Suffield, Ecklinville, and Warner's King.

On the gardener's house near the Apricot already mentioned, a thriving plant of Clematis Henryi was flowering with a profusion almost equalling C. Jackmani. The situation is a good one, but this variety of Clematis is rarely seen growing and flowering in the same perfect way outdoors anywhere in Scotland as it is here.

In a mixed border in front of one of the ranges of houses, a number of Lemoine's new hybrid Gladioli were blooming. They were seedlings, and the first we had seen of the breed. Refreshingly novel, distinct, and beautiful they were; rich in colour and peculiar in shape. In that and other borders in the kitchen garden, many of the more select and beautiful herbaceous and alpine plants are accommodated.

A run through the Orchid-houses confirmed a favourable impression we had received of Mr. Wm. Sharp's ability as a grower during the ten or more years he had had charge of them prior to his recent appointment to a more important charge at Freelands, Forgandenny. Not an unhealthy plant was to be seen in the several houses devoted to Orchids, and many were remarkable as superior specimens exhibiting extraordinary vigour. Very notable were fine plants of Dendrobium crassinode album with growths over 2 feet in length; Lælia purpurata alba, with twelve to fourteen bulbs; Vanda cœrulea, with nineteen pairs of leaves clothing the plant to the

pot; Cypripedium Druryi, 2 feet through; C. philippinense, Cattleya amethystoglossa, Angræcum sesquipedale, Lælia anceps Dawsoni, and L. A. Barkeri were each remarkable for the exceptionally vigorous health in which they were. Mr. James Watt, who has succeeded Mr. Sharp, is to be congratulated on having stepped into a charge so well conditioned; and there is no doubt his skill as an orchidist will enable him to still maintain the plants at that level.

Not many species were in flower at the time of our visit, but we hope to have an opportunity of inspecting and reporting on them when more are in that state. Among those we noted on this occasion were Cattleya Gaskelliana alba, C. Harrisonii violacea, Odontoglossum aspersum, with rose-purple lip, the identity of the particular form being at present a subject of question; O. Harryanum, regarded by Mr. Curle as a superior variety, the lip of which is unusually large, and pure white; O. Wilckeanum, a beautiful form, with creamy-white ground and deep crimson spots, but shorter sepals than those of the type; Cypripedium Godefroyi, and the singularly interesting as well as beautiful Catasetum Bungerothi. *W. S.*

POTATO SCAB EXPERIMENTS.

In addition to the regular statistical work in the garden and orchard of the New York Agricultural Experimental Station, a special study has been made of the Potato scab, from the report of which we gather the following interesting particulars. The peculiar rusty scab-like appearance on the outside of the Potato tuber has often been found to extend deep into the body of the Potato, causing a considerable loss of substance. The edible qualities of the tubers thus affected are not injured, but their market value is greatly lessened.

The Effects of Excessive Moisture on the Production of Scab.

On May 6, forty-five rows of Potatos were planted near a water-tank in the garden in such a manner that every alternate two rows could be irrigated, while the remainder were unirrigated.

The seed used was the White Star variety, except the first row, which was a red-skinned seedling. Twenty-two rows were planted with scabby tubers, and twenty-three with tubers entirely free from scab, in the following manner:—First row, a red-skinned seedling free from scab, then two rows of scabby tubers of the White Star variety, next two rows with tubers of same variety free from scab, and so on alternately two rows scabby and two without scab. The tubers of each four rows thus planted were treated with a different substance intended as a preventive of the scab. One half the area of the experiment received no manure, while the other half was manured with stable-manure before ploughing the land.

Irrigation was begun on July 19, when the tubers had just commenced to form, by allowing a stream of water to run during the hours from 6 P.M. to 7 A.M., between each alternate rows, extending over the whole area. This was continued until October 15, at which time the crop was lifted, each tuber being separately examined for scab, and a record made of the whole number of tubers, and the number of scabby tubers.

Comparing the irrigated with the unirrigated portion, the following result was obtained:—

	Total Number of Tubers.	Per Cent. Scabby.
Irrigated	1,658	48
Unirrigated	1,868	31

The number of scabby tubers in the product of the irrigated portion exceeds the number of scabby tubers in that unirrigated by 17 per cent., which tends to indicate that excessive moisture favours the production of scab. This result coincides with the work of Dr. Nobbe, who found in water culture of the Potato that, from the first formation of the tubers grown in water, very small warts were produced by excessive local growth of Cork.

These warts were not found in the tubers grown in the air.

Comparing next the product of the scabby seed of the irrigated and the unirrigated portions with that of the smooth seed similarly treated, the results are as follow:—

Scabby Seed.

	Total Number of Tubers.	Per Cent. Scabby.
Irrigated	823	57
Unirrigated	961	32

Smooth Seed.

	Total Number of Tubers.	Per Cent. Scabby.
Irrigated	835	44
Unirrigated	907	29

It appears that there were 25 per cent. more scabby tubers in the irrigated portion planted with scabby seed than in the unirrigated, and 15 per cent. more scabby tubers in the irrigated portion planted with smooth seed than in the unirrigated, or 10 per cent. more scabby tubers from the scabby than from the smooth seed.

The difference in the per cent. of scabby tubers in the products of the smooth and the scabby seed does not appear striking, and does not in this case tend to disparage the use of scabby Potatos for seed.

Comparing the manured and unmanured portions, the following data are obtained:—

Unmanured.

	Total Number of Tubers.	Per Cent. Scabby.
Irrigated	775	22
Unirrigated	468	21

Manured.

	Total Number of Tubers.	Per Cent. Scabby.
Irrigated	883	71
Unirrigated	996	30

Practically, there was no difference in the percentage of scabby tubers between the irrigated and unirrigated portion that was not manured.

In the manured portion the number of scabby tubers was 41 per cent. greater in the irrigated than in the unirrigated.

The Relation between Colour of Skin and the Liability to Scab.

To determine if any relation existed between the colours of the skin of the Potato tubers and the liability to scab, the yields of eleven plants each of forty-five different varieties tested in the garden were examined and counted, with the following result:—

	Total Number of Tubers.	Per Cent. Scabby.
Dark-skinned varieties ...	531	27
White-skinned varieties ...	1,076	43
Flesh-coloured varieties ...	529	53

It appears that the dark-skinned varieties gave a smaller percentage of scabby tubers than the white varieties. Those having a flesh-coloured skin seem to be most susceptible to the scab, the percentage of scabby tubers being greater than in either the white or dark-skinned varieties.

Summary.

The data obtained from the foregoing experiments indicate that:—(1.) The scab was not primarily caused by a fungus. (2.) It was not due to the work of insects. (3.) In nearly every instance an increased yield was accompanied by an increased percentage of scabby tubers. (4.) Any marked change in the rapidity of growth, either an increase or decrease, tends to an increased production of scab. (5.) A continuous growth from the time of first vegetation until the tubers are fully matured, appears to be the condition least favourable to the production of scabby Potatos. *J. J. Willis, Harpenden.*

CAMELLIA BUDS DROPPING.

It may be said with regard to the above subject, that there would seem to be two or three kinds of bud-dropping common to the Camellia: loss of buds from there being more buds set than the plant can bring to the point of opening; loss from over-dryness of the air; from over-dryness of, as well as from excess of water in, the soil in which the roots are, and from town fog. It is possible to have the conjunction of two, or of all of these causes in one collection of the plants; and without a thorough investigation of the causes of bud-dropping in the case of each, it is not possible to state with any degree of certainty the reason for the loss. Cases have come under my notice where everyone of these causes, excepting fog, have operated in one autumn and winter, and in one and the same conservatory; and with a large collection (900) in tubs and large pots, loss of buds from one or the other cause was unavoidable. Excessive drainage is frequently a cause of loss, and it is one that is likely to act on the plant in two ways by a too rapid parting with the moisture afforded the plant, and the consequent need for frequent waterings, to the impoverishment of the soil. Camellias are better when potted in rather retentive soil, and if burnt earth and charcoal be used in it, with only a double layer of large crocks over the bottom of the tub or pot, there will be less need for watering much in the autumn and winter than where the reverse of these conditions is found.

When plants have stood near to hot-water piper, or over a drain containing hot-water mains, or near a hot-air flue, or immediately over steam-heated pipes, the highly heated dry air has caused sometimes a total loss of bloom-buds in a day or two. The same plants another year, placed at a long distance from the inimical conditions which caused the loss the previous year, lost no buds whatever unless from the process of nature thinning or disbudding, to which the Camellia, in common with other plants, is subject. Too great wetness of the soil causes loss of buds and foliage, too, and is often made noticeable by the yellow variegation apparent on the foliage and the entire denudation of the young shoots of leaves.

This kind of loss is entirely avoidable, and is due to errors in cultivation. A fruitful source of loss in this way, especially when ill-made tubs and pots are employed, results from standing these directly on the pavement of the house, whereby the free egress of the water is hindered or prevented, and worms, which are always present in cool houses, readily get into the soil through the water-holes and make havoc with entire ball of soil. Where a tub is not provided with feet, it should always be elevated on a few small blocks of wood, or on half-bricks, and the same holds good of pots in such positions. In the case of tubs, it has the advantage of preserving them from too rapid decay, and tends likewise to a thorough aëration of the soil.

Another advantage not to be underrated in the winter, is that the floor may be washed down thoroughly, and that it gets dry sooner afterwards, and when watering has been done, than where the pots, &c., stand directly on the floor.

I have touched on all the ordinary causes which lead to, and result in loss of buds. The loss of buds by smoke and fog, or smoke alone, is an extraordinary cause, and its effects are felt mostly in the neigh-

bourhood of large towns, where coal-smoke abounds, and where it is very questionable if matters will be any better whilst the Smoke Abatement Acts remain only partially enforced. The only chance seems to lie in our avoidance of all preventible causes, and by the use of thick woollen or cotton coverings over the ventilators of Camellia-houses and greenhouses.

It may be that the chemists can suggest some substance which would form an attraction to the sulphureous matter held in suspension in town fog, and so render it less harmful to plants. We can render a fruit room less damp by keeping lumps of quicklime in it, removing them daily, and supplying fresh; or the fumes of fresh paint, by placing a few pails of water and hay in a room. Why not something similar for the Camellia? *F. M.*

Plant Notes.

ARISÆMA FIMBRIATUM, *Mast.*

This handsome and distinct species was described and figured by Dr. Masters in the *Gardeners' Chronicle* for 1884, vol. xxii., p. 680, and p. 689, f. 119; but its native country was then not distinctly known, although it was thought to have been imported from the Philippines along with some Orchids, and it may possibly have come from there. However, specimens of it have now been received at Kew, collected by Mr. Curtis in the island of Langkawi, in the neighbourhood of Penang. Both specimens have hermaphrodite spadices, and the filiform processes which cover the appendix are longer than in the type specimen, which was kindly presented to Kew by Dr. Masters. *N. E. Brown.*

Bignonia venusta.

This beautiful Brazilian creeper, so seldom seen, deserves a few notes in its praise at the present time, when it forms an object of beauty in the warm conservatory. The long terminal racemes of bloom hang down loosely from the roof, and are very decorative in that position. The flower has funnel-shaped, rather spreading corollas, and lasts some long time in good condition. We find cut blooms capital for vases, being very effective when so employed. Most of the Bignonias live under cultivation to a great age, and flower profusely if well treated. They require an equal quantity of very fibry loam, and good hard peat, and a small portion of decayed manure, and do best when planted out in a border, but not given too much root-space; and I have proved that a small border and the plants supplied with a good fertiliser at times is best for this and most other climbing plants. Bignonias enjoy sunlight, and should not be shaded, for unless the wood is well ripened, the flowers are few. They are suitable subjects to plant for shade, and when used in that way, the weak shoots should be cut away, and the stronger ones allowed to hang down. They do not then deprive the plants beneath of much light. Propagation is effected by cuttings of the young shoots placed under a bell-glass or in a warm propagating pit, and if the cuttings have a heel so much the better. They are rather a long time in making roots, and require very little moisture, just as much as will keep them from shrivelling. They may also be increased by layering in the usual way. *Geo. Wythes, Syon House.*

Amomum (Alpinia) magnificum.

In the *Bot. Mag.*, t. 3192, there is a good figure of this plant, which the editor described as Alpinia magnifica; and, if I remember rightly, as Nicolaia in Horaninows' *Prod. Monogr. Scitam.*; but in Bentham & Hooker's *Genera Plantarum*, it is included in the genus Amomum, which name, I presume, will now be adopted in preference to any other. The figure in the *Bot. Mag.*, was, we are told, prepared from a plant which flowered in the garden of Lord Milton of Wentworth, in August, 1832, from which time till now the plant appears to have been lost to cultivation. However, about three years ago, Sir Henry Barkly succeeded in importing living plants from Seychelles, which he presented to Sir George MacLeay, and these are now flowering for the first time; the plant evidently requiring to attain an adult size before flowering. It is growing in the Aquatic-house, and is now from 10 to 12 feet high, and in general appearance greatly resembles the well known Alpinia nutans, but is of larger dimensions, the stems at the base measuring about 6 inches in circumference. They are well clothed with large, leathery, dark green, oblong acute leaves, sheathing the stems, have a prominent midrib, and many oblique parallel nerves, thus so far being not unlike Alpinia, but the inflorescence is entirely different from that plant, and, instead of being terminal, it is developed from the rhizome on a leafless scape about 4 feet high. It is clothed with closely sheathing green bracts, the last one developing into a leafy character, and which withers as the inflorescence expands. The latter is a dense capitate spike of flowers, surrounded with numerous deep rosy-red bracts, the outer rows being thick and fleshy, about 4 in. long and 2 in. broad at the base. They are slightly reflexed and margined, as are also the others, with a distinct white line. The outermost bracts are oval acute in outline, with a prominent needle-like process near the tips; the inner rows are more erect and obtuse, becoming smaller in size, until the flower-spike is reached, when they become suddenly erect, closely imbricated, and only about 1 inch long, and from within which the purplish-red corolla peeps out, enclosing the stamen and red-coloured capitate stigma. The plant is certainly one of the most striking of all the Scitamineæ, and is deserving of cultivation wherever space can be afforded it. *F. R.*

Schizostylis coccinea.

This fine Caffrarian plant, which can be had in bloom from October to February, is a useful one to grow for supplying cut flowers. To grow it successfully, it should be taken up and replanted annually, the stolons being sorted into sizes, and the strongest planted for flowering, and the smaller pieces put into beds to grow larger. The plant requires light sandy soil, and the best time for dividing is after flowering; and after they are planted, no further attention is required, except a watering or two during hot weather, until October, when, if wanted for indoor decoration, masses should be potted in 6-inch pots, this size being a most suitable one. Place them in a cool-house pit, Peach-house, or vinery at rest. Fire-heat is almost fatal to them, but the above treatment will well repay the cultivator for his trouble. *A. Evans, Lythe Hill.*

SALVIAS.

For flowering during the autumn and winter, there are no plants more showy and valuable than Salvias, of which there are a great many varieties, embracing a wide range of colour, some being of a very bright scarlet; these are remarkably telling, the first among them being S. splendens Bruanti, which, besides its tall spikes of brilliant bloom, has beautiful foliage, the contour of the plant is pleasing and striking; and it is only about half the height of S. splendens. To have this Salvia in really good condition, it requires more heat than an ordinary greenhouse affords, the most suitable temperature being 50° to 55°, in which it will continue to branch out and flower with freedom. Another fine kind is S. Bethelli, fig. 89, a form of S. involucrata, and which produces very large spikes of puce-coloured blooms, the foliage being of a light green tint, and the habit of the plant branching and good. The Pine-apple-scented Salvia, S. rutilans, is also a very desirable variety that bears very long spikes of small flowers, the colour of these being, such as they are, scarlet shaded, or tinged with violet, which gives quite a glow, and renders them very attractive. S. gesneriflora forms a stately plant, and is the strongest of all, and produces the biggest blooms, which are of a glowing scarlet; but it is a late kind, it being at its best about March if allowed to come on naturally, and it is very impatient of artificial heat, in which it is apt to drop its flowers, and never looks so well as when allowed to have its own time. S. Hurii is the latest of all, and is perhaps the freest to bloom, as it branches out in all directions and becomes a mass of flowers, the colour being crimson, and the foliage deep green. S. Pitcherii is a very spare habited kind, that sends up slender hard stems, ranging from 2 to 3 feet high, and sends out long spikes of Lobelia-like blooms, the colour of these being rich blue. All the above are well worth growing, and the propagation and culture is very simple; the best way of treating the whole, after they have done flowering, is to reduce the heads by cutting them back, and then giving the plant the benefit of a little moist heat to induce them to break, and make some fresh growth to take off for cuttings. Shoots of about 4 inches long are the most suitable for these, and after they are trimmed and heeled in the ordinary way, they should be placed singly in small pots filled with sharp sandy soil, and then stood in a propagating-box, or under a handlight in moist heat till they root, and after that they should be stood on a shelf in some warm-house or pit, and be potted on as they require more root room. The soil most suitable to grow Salvias in is a good loam, mixed with just a little rotten manure, and some sand to keep the whole open. Some growers of these plants plant them out at the end of May or early in June, and lift them again in the autumn; but though that plan of treating them may save a little labour in watering, they do, I think, best in pots, as then they receive no check, and do not cast the lower foliage in the way they are apt to when disturbed by taking them up. If they are kept in pots, it is advisable to plunge them in ashes, or surround them with litter to keep off the sun from the sides of the pots, otherwise the roots are liable to injury owing to the heat bearing against them. *J. S.*

We reproduce two illustrations figs. 88, 89, of these fine winter-flowering plants.

THE HISTORY OF THE CHRYSANTHEMUM.

BY W. B. HEMSLEY, F.R.S.

(*Concluded from p.* 586.)

Wild Specimens of Chrysanthemum in the Kew Herbarium from China and Japan.

Chrysanthemum indicum ranges, in a wild state, from Hongkong to Peking, and the province of Shingking, or through at least twenty degrees of latitude. The southern specimens have usually somewhat larger, less numerous flower-heads, though one or two specimens from the most northern locality exhibit the same character. As already stated, the ray and disk are both invariably yellow, at least so far as all available information goes, and there is never any difficulty in distinguishing these wild specimens from C. morifolium and its northern variety, gracile. There are specimens from Hongkong (Seemann, Champion and others); Chapoo, Chekiang (Oldham); Ichang, Nanto and other localities in Hupeh, abundant (A. Henry); Shanghai, Kiangsu (Carles and Maingay); Chefoo, Shantung (Forbes); near Peking (David); Moukden and other localities in Shingking (Ross and Webster); Rabasima, Japan (Oldham), and from various other parts of Japan, though not localised, collected by Buerger, Maximowicz, and Dickins.

Chrysanthemum morifolium (sinense) genuinum I have only seen from the Luchu Archipelago (Wright), and the Chinese central province of Hupeh, from the mountains around and near Ichang, collected by Dr. Henry. I may repeat here that this is altogether a more robust plant than C. indicum, having thick leaves, tomentose, especially beneath; and the ray flowers are of a different colour from the disk. The Luchu specimen is remarkable for having quite leathery leaves, with a few broad short rounded lobes. A Japanese specimen with double flower heads, received from the St. Petersburg Herbarium, and labelled C. indicum β plenum, is the exact counterpart of this. Dr. Henry's specimens have also very thick leaves varying much in contour, and the degree of cutting, being sometimes almost entire; the ray is white in the Hupeh specimens.

C. morifolium, var. *gracile*, is only known from the



FIG. 88.—SALVIA SPLENDENS VAR. BRUANTI: COLOUR OF FLOWERS BRIGHT SCARLET. (SEE P. 652.)

mountains near Peking, from Southern Manchuria, and from Japan. The specimens are numerous from North China, and described as having lilac, rose, and deep rose ray-flowers, by different collectors. The Japanese specimens are not localised, and differ from the Chinese in having decidedly hairy leaves. In the absence of more direct connecting links, perhaps this dwarf slender plant should be regarded as a distinct species, though there are indications of close relationship.

Orchid Notes and Gleanings.

ORCHIDS AT "THE KILNS," FALKIRK, N.B.

At various times mention has been made in your columns of the Orchids belonging to John Gair, Esq., The Kilns. When in Edinburgh last week at the Chrysanthemum Centenary Show, I heard with regret that this well-known collection was to be dispersed in the spring. Orchid collections of any great size are few in Scotland, and it is always a pity when one has, from one cause or another, to be dispersed. On calling at The Kilns, on my return journey, I was pleased to learn that the rumour was only partly true, in so far that the intention of the owner is to dispose of only the larger specimens, the houses getting much overcrowded; but Mr. Gair, being very unwilling to part with his favourites, nothing has been definitely decided upon, although an early thinning-out of the plants will soon be imperative.

The end of the month of November is scarcely the best time to visit any gardens, or to find a great display of Orchids in bloom. Still, in a well-managed collection, such as this is, there are always some plants to admire, and "wrinkles" to learn about their management; while to one who has visited this particular garden on several occasions, it was a pleasure to note the continued excellence of the plants.

In the cool house one side was chiefly filled with Odontoglossum crispum of the best types—as told by the labels—few being in bloom. Besides these were several rare species. On the other side were numbers of fine plants of O. Pescatorei, and the numbers of the spikes bespoke the strength and vigour of the plants, and the fine display that there will be shortly. The masses of O. pulchellum majus formed another treat rarely seen, or the plant in such size and order. With them were strong plants of O. Edwardii, O. bictonense album, Maxillaria Sanderiana, growing vigorously, one plant of the last-named having seven strong growths; Oncidium cheirophorum, which, although small, is a sweet and pretty thing. Several fine plants of Odontoglossum grande had just passed out of bloom; near them was a number of nice Lælia anceps and a piece of L. a. Dawsoni, and numbers of Masdevallias in medium-sized plants were noticed.

Suspended from the roof was a number of plants in baskets, &c., and mention should be made of a fine plant of Dendrobium Jamesianum, remarkably strong and full of flower buds.

The large warm house, the finest object in the garden, is literally crammed with choice and varied species, and it speaks largely for the skill and close attention of the gardener shown in the management of the plants. All of these plants grow together luxuriantly. Amongst the many plants observed, I select a few as exhibiting remarkable vigour: Lælia purpurata Williamsi, in an 18-inch pot; Cattleya crispa, The Kilns variety, in a 24-inch pot, with splendid growths; C. crispa, Floor Castle variety, also fine; fine specimens of C. gigas, C. Imperialis, C. Sanderiana, &c., Cymbidium Lowianum, C. Mastersi with seven strong growths, Dendrobium Schroederii, D. nobile album, which I understand originated here; the old, but scarce, D. Macarthiæ and D. Falconeri giganteum with bulbs differing from the type, and resembling an attenuated variety of D. Wardianum. Amongst the evergreen Dendrobes was a long-bulbed variety, of D. chrysotoxum. At one side was a batch of healthy plants of Ærides expansum Leonis, A. virens Dayanum, A. Veitchii, A. suavissimum (true), with twenty-four leaves, and that sometimes difficult doer A. Larpentæ, a plant in fine condition.

Various species of Saccolabium and Vanda, notably a healthy lot of V. teres filled one end of house. The Cypripediums—a large collection—are well done, great specimens of the older kinds, and healthy thriving young plants of the newer species and varieties, being observed. There were C. Spicerianum with plenty of "magnificums" amongst them; C. Leeanum superbum, C. euryandrum, C. vexillarium, C. Sanderianum, C. grande, C. Godefroyii, and many others. The pretty and admired Zygopetalum Mackayii, in several good plants and fine forms, was noted, one having very dark markings, and another an unusually large labellum.

Dozens of Orchids hung from the roof, and amongst them a strong plant of Vanda Amesiana, with eight leaves and a branching flower-spike already 2½ feet long; this plant is much stronger in all its parts than the rest of the species in the collection. Angræcum articulatum had ten leaves and one spike, and is still growing vigorously; A. citratum in a basket, had nine leaves and five spikes. Several plants of the Sophronitis grandiflora, one being named S. g. giganteum, had blooms which measured 2½ inches across.

In two smaller houses were fine groups of Cattleyas, including three dozen of C. labiata Warneri, one of which had twenty healthy bulbs. A score or more of C. Dowiana were suspended from the roof; one plant of C. D. aurea had borne a spike with five blooms. Mr. Fairbairn keeps these species steadily growing, and his method is warranted by his success. Along with these, but now getting less water, were numbers of admirable plants of C. Mendelii, C. M. alba, C. Mossiæ alba, C. exoniensis×, C. Schrœderii alba, with eight flower-sheaths; C. dolosa, C. bulbosa or Walkeriana, C. maxima aurea, C. xanthina, and the rare C. crocata alba; also C. Skinneri oculata, from the Burton Constable collection; C. Sanderiana, and lots of C. Trianæ, and others. Odontoglossum Londesboroughianum was represented by a strong plant, with two heads doing well.

In a mixed Fern-house were masses of Cœlogyne cristata, Cymbidium eburneum, Cypripedium insigne, and C. i. Mauleii, with twenty blooms; Lælia autumnalis atrorubens was very bright, and telling amongst the greenery. Amongst a well-bloomed lot of Calanthes was a form from Rangoon of C. vestita luteo-oculata, with much denser-bloomed racemes than the usual type.

To keep a large mixed collection of plants in first-class order requires much skill, and in this Mr. Fairbairn shows marked ability, and he has every reason to feel proud of his success. *Jas. Whitton, Glamis Castle, N.B.*

Orchids at Studley House.

Recently I had an opportunity of visiting the well-known Orchid collection of Mr. F. G. Tautz, Studley House, Hammersmith, and was favourably impressed with the neat, well-built houses and their contents, which were healthy and well-grown. Thanks to Mr. Cowley, I was enabled to see everything of interest in the collection. The time being towards the close of November, I did not expect to meet with many Orchids in bloom, but close on forty different plants were found in flower. Cymbidium Mastersii, with its arching trusses of white fragrant flowers nestling among the deep green foliage; Oncidium tigrinum, with a branched spike nearly 6 feet long, and bearing thirty-eight flowers, rendered conspicuous by their bright, yellow lips and tiger-spotted sepals and petals. A pretty contrast to this was the dwarf-growing O. cheirophorum, with clusters of golden yellow flowers, sweet-scented. Several plants of Lycaste Skinneri alba, two flowers on one of the plants being borne on each scape. Odontoglossum hebraicum showed a fine arching spike of white, star-shaped flowers, spotted with reddish brown—this seemed to be a pale and pretty variety; O. cariniferum had about ninety flowers on a long spike; Masdevallia tovarensis and Pilumna nobilis, both white; the peculiar looking Angræcum (Listrostachys) ichneumoneum, which bore three pendulous dense racemes; Oncidium Forbesii, Lycaste lanipes, Lælia elegans Schilleriana, Odontoglossum tripudians, Epidendrum ciliare, and the minute-flowered Stelis macrantha were also blooming.

Among the Cypripediums, which form the chief attractions in the collection, was to be noticed a fine plant of C. Dauthieri marmoratum. This is a very curious and also beautiful hybrid. Several varieties of C. insigne were in flower, including some good specimens of C. i. Chantinii and C. i. Tautzianum. The latter has a large upper sepal with a broad pure white apical border, the remaining surface being bright green, with rows of large dark purple-brown warty blotches. The lower sepal is thickly covered—more so than any other variety of C. insigne—with lines of blackish spots. C. microchilus, a hybrid between C. niveum and C. Druryi, is a very charming plant, and shows the characters of both in about an equal degree. The rare C. Fitchianum, though not one of the hybridist's best results, is, nevertheless, noteworthy; the upper sepal reminds one of C. Hookeræ. C. Meirax was likewise in flower. Plants of C. regale and C. Mrs. Canham had fine flowers. Among other objects of interest were some good specimens of C. callosum, remarkable for its large upper sepal, with purple veins on a white ground, more or less suffused with crimson at the sides; C. Spicerianum, C. venustum, and the graceful C. Schlimii. *John Weathers.*

Masdevallia tovarensis.

This is an exceedingly chaste and useful species; and its white flowers are more appreciated by ladies than most of the darker coloured and curiously marked species. It is a native of Tovar, in Columbia, where it is found at several thousand feet above sea-level, it naturally enjoys a cool, moist, airy climate; thus, it is not to be wondered at that it resents anything approaching a close atmosphere, such as some growers afford, under the impression that it requires more heat than other members of the genus; and I have little doubt but that this sort of excitement is a prolific source of "spot." We have always grown it with the others in the Odontoglossum-house, in which it grows freely without spot; indeed, we have had the same flower-spikes flower twice, and sometimes thrice; but this persistency of the flower-scapes is not of much advantage, for if the old stems are retained it does not produce so many new ones; we therefore cut them off when the flowers have faded. Like other Masdevallias, it is easily cultivated, in the usual mixture of potsherds, peat, and sphagnum moss, in pots 5 inches is a very suitable size, as the leaves rarely exceed 6 inches in height, above which the flower-scapes rise only 2 or 3 inches. Each scape carries from two to four flowers, and, as a small plant in the size of pot named will have as many as two dozen scapes open at one time, it can easily be conceived what a pretty little decorative plant it is; moreover, the flower-stalks, unlike many other members of the genus, have sufficient strength to maintain themselves erect. Aphides are very partial to the flowers, and soon disfigure them if allowed to get a footing; therefore, it is well to see that the plants are free from this pest before the flowers begin to open. I may add that 45° to 55° is our range of temperature generally. *F. R.*

The Herbaceous Border.

RUDBECKIAS.

Possibly the best of the genus is the well-known R. speciosa—better known, perhaps, under the name of Newmani—a neat growing herb with much branched wiry stems, with terminally, showy, large flowers, the ray-florets orange-yellow, from an inch to a half more long, nicely reflexed, and with a slightly conical, blackish-purple disk. Rudbeckias

MASSACHUSETTS AGRICULTURAL

are useful for cutting, their long, wiry stems supporting them well. The plant averages 2½ feet, and to obtain the finest effect it should be planted in masses, large or small, as may suit the garden; indeed, for those who look for autumn effects, there is no more desirable, yellow-flowered plant with which to plant a large bed. Moreover, owing to the young growths pushing early, the beds would remain green with foliage after the flowering-stems are cleared away. It is of the easiest culture, and an ordinary garden soil suits it, but preference should be given to a situation where it would be unlikely to suffer through want of water, as when it gets dry the period of flowering is much shortened. When the roots get thickly matted, it should be lifted and replanted in fresh quarters, and, if in the same place, the ground should be well trenched and manured. It may be increased by division.

Another splendid plant is R. maxima, a much stouter stemmed, taller plant, often growing from 5 to 6 feet high. The stems are freely branched, and produce solitary terminal flowers of large size; the ray-florets are of a rich golden-yellow, nearly 3 inches long, and about three-quarters of an inch broad, drooping much from the base of the green columnar disk — a very conspicuous and effective border plant.

R. laciniata, also a tall-growing but earlier and lighter coloured flowered plant, is worth growing where tall subjects are required. R. hirta, R. occidentalis, and R. pinnata might also be included.

A beautiful plant now included in Rudbeckia is R. purpurea (Echinacea purpurea), growing from 3 to 4 feet high, with erect, sparsely branched stems, terminating in a solitary flower-head, reddish-purple, and paler towards the points of the florets, which are radiate, with a dark brown columnar disk —a capital border plant, but it requires a more favourable position than the Rudbeckias proper, which are able to grow and thrive in almost any position with more or less success, and are all easily multiplied by division or seeds. *F. R.*

Nursery Notes.

Messrs. Dobbie & Co., Rothesay.

I was so much impressed with what I saw on the occasion of a visit to Messrs. Dobbie & Co.'s seed growing establishment at Rothesay, N.B., late in the autumn of last year, and of which I gave a brief account in your issue of December 1, p. 640, that I determined to make an earlier visit this year in order to note more particularly the methods of seed selection adopted with the various subjects by a firm who have made themselves so high a reputation in this department of horticulture. Accordingly, I made my way there at the end of August, and found myself in time to see the several crops in all stages of growth.

The grounds of Messrs. Dobbie extend in all, in Rothesay, to some thirty or forty acres, not in one compact block or undivided farm, but consisting of many detached gardens, mostly walled in, of from one to several acres each. All of them are separated more or less from each other by intervening buildings or gardens, or plantations, so as to isolate them completely, some indeed being over a mile apart. The advantages of this scattered distribution of the land are obvious, perfect isolation of the related sorts of vegetables and flowers is attained, a condition absolutely essential to careful selection in many cases. But at the same time it must add much to the expenses of production, and increase the care and attention of the producers and their assistants.

The land is generally of a light, loamy character, and, as may be expected, is kept in a high state of fertility. Compost heaps are a feature, stowed trimly in one corner or another of most of the gardens, which indicate that Messrs. Dobbie have more confidence in well-prepared heterogeneous materials than in farmyard manure alone. Everything decomposable finds its way to the compost heap, and as much turfy matter as can be obtained, along with lime, are intermixed therewith, and mellowed by frequent turnings, for application to the ground at the proper time. This careful exclusion of all crude and rank manurial elements has doubtless much to do with the uniform cleanness of the crops of tap-rooted vegetables. The strains of Beet, Carrot, and Parsnip are no doubt refined by careful selection annually, but were there less discrimination exercised in selection of manure, the result on the growing crops would certainly be a falling-off in both excellence of form and in quality. Painstaking intelligent cultivation must ever go hand-in-hand with the skilful selection of superior types of any particular vegetable for the purpose of seed-bearing, otherwise deterioration will assuredly prevent, or at least modify, the end in view even in one season.

I did not find here that Messrs. Dobbie claimed that they were originators of new varieties. All they do claim is, that they earnestly work for the improvement of types which may be well known, but generally in a less refined form in consequence of less persistent methodical yearly selection being applied to them. No one is to be blamed if there are inferior strains of vegetables in the market. Prices have fallen in consequence of competition in the trade to a point that will not bear the expenses attendant on the production of the highest quality of seeds, and the maintenance of pure strains by selection. These expenses are heavy beyond the conception of those who have no experience of the work. Nor can it be entrusted to any but experts. Take, for instance, Beetroot, of which, although there are still varieties with names familiar as household words to gardeners who practised twenty-five or thirty years ago, yet they are, it will generally be admitted, most difficult to procure in the quality which gave them pre-eminence in those days. The only reason that can be assigned for this is, that there has been a falling off in the care and skill requisite in the selection of roots for seed-bearing, possessing in the highest degree the excellencies of the type or strain.

The only method by which Beet for seed-saving may be selected, so as to be assured of maintaining the standard quality of the stock, is that of cutting each root, so as to be able to ascertain its colour and texture. This involves the destruction or loss of a great number of roots, if the work is conducted with the view of securing the highest quality. Every root must be inspected not merely externally but internally also, for although a handsome form and a dark skin are desirable in Beet, the possession of either the one or the other is no sure criterion of the internal colour and quality being all that can be desired. This is the test to which Messrs. Dobbie subject their Beet, and it is applied with the inflexible determination to plant not a single root that is inferior to their ideal of perfection.

Equally thorough tests are applied to everything grown here for the purpose of seed-growing, and the result is seen on every hand in the evidences of pure unmixed stock, for not a "rogue" is permitted to live after its features are revealed. Be it Cabbage, Parsley, Turnip, or anything else, any declension from the type is relentlessly condemned.

Among notable samples of the specialties in vegetables of the firm, their Champion Selected Leek, of which they have maintained stock for the last thirty years, deserves special mention. I was shown some that were blanched 15 inches in length, with a proportionate thickness of stem. Samples also of their selected White Celery measured 3 feet 9 inches blanched; and their selected Red Celery was only 6 inches shorter, both clean, crisp and solid, as was proven by similar stalks which were cut up to test their quality. Their selected Red Onion is the largest I have met with, of a fine roundish globe-shape; with this Messrs. Dobbie have been working for the last twenty years, but owing to the humidity of Rothesay, and the shortness of the summer, they have never been able to secure even in the best of seasons other than most limited supplies of seed. The variety has consequently always remained scarce. It appears to have originated about Manchester, or at least it was from a grower in that neighbourhood that Mr. Dobbie, the founder of the firm, procured it about the time stated. Of Broad Beans, a number of sorts are grown; my attention was arrested by one sort bearing the name Nettleship's Prize, which should be known to every market gardener and others to whom an abundant crop is a consideration superior to extra-sized pods. It is the largest cropper that has come under my notice, and the Beans are moreover of good size and quality.

With a passing mention of Dobbie's selected Parsley, which is beautiful and crisp yet vigorous, I must leave the vegetables and pass on to the—

Flowers which are numerous in variety, and in some instances, such as Marigolds, grown by the acre. Of the French Marigold, there was one field of considerably over an acre in extent. There were two strains notable in the stock, one with lemon-coloured bars, the other with orange bars. The former is much the most effective, throwing up as it does the deep crimson ground more vividly. Messrs. Dobbie are directing their efforts to the perpetuating of this, and eliminating the orange-striped sort. They look on the task as one of many years' duration, but believe they will eventually succeed, as they obtain a larger proportion annually of plants bearing lemon-striped flowers. African Marigolds are grown largely, also some 7000 plants occupying part of one garden, and bulky patches of them are to be seen elsewhere. The quality of both these classes of Marigolds was superior.

Dobbie's New White Spiral Candytuft deserves note among hardy annuals for its pure colour, and its habit of continuous flowering, which enables it to remain showy long after any other white, with which I am acquainted, has succumbed to seeding.

A strain of fancy Pansies, a smooth and cleanly marked strain of Auricula-eyed Sweet William, deserve passing mention, as bearing the stamp of careful selection. Choice Quilled Asters, planted and grown under glass, as the only way in which seeding could be assured in the humid air of Rothesay, and Dobbie's Giant Mignonette must bring my notes of this interesting place to a close. The last named is a remarkable variety, robust and upright and with spikes of flowers about a foot long. Two plants on the bed in which it grew, and which were a fair average of the whole in point of size, gave, on having their spikes counted, fifty-one and fifty-four spikes respectively. *W. S.*

Hooper & Co., Maida Vale.

A complete change is noticeable in the stock of plants at this nursery, formerly known as the Pine-apple Nursery Company. Botanical nursery stock, useful enough in its day, has had to give place to large numbers of showy plants of easier cultivation, and which are greater favourites with the public, and these are heavily drawn upon for both plants and cut flowers by the various other establishments which are owned by the firm.

The large conservatory, as a show-house, is second to none in the trade. In it are arranged groups of all the plants ready for sale, making a fine show, and ranging from the small foliage plant a few inches in height to the tall Palm and Tree Fern, often 20 feet in height, but still in pots or tubs so small as to be easily transportable for house decoration—for what is termed "town work" is a special business of the firm. The rockery, too, in the conservatory—an artistic piece of work—is beautiful, now that the plants have attained large dimensions, and group themselves naturally. The Tree Fern stems, clad with creeping Ficus repens and F. minima, are especially noteworthy, the arching frondage drooping over and

among the foliage plants on every side having a pretty effect, and which intending rock-builders might inspect with advantage. On the front shelves are a number of Oncidium tigrinum, Pleiones, Cypripediums, Odontoglossums, &c., intermixed with Ferns; beside these are Bromeliads, Bouvardias, and Vallota purpurea in flower, &c., the centre being effectively arranged with Chrysanthemums, the supplies to keep up the display being drawn from the houses behind the conservatory. The basin of the fountain is rendered ornamental by plants of Aponogeton distachyon, and other aquatic plants, but chiefly noticeable are the four vases at the edge, containing noble plants of the Chiswick variety of crested Pteris, which grows from 3 feet to 4 feet in height, and has a very ornamental habit. The tank at the back of the fine structure, too, has many aquatics, and above it large specimens of Monstera deliciosa and Aroids, and other foliage plants. A lofty lean-to house abuts on the conservatory, and is filled with specimens of Latania rubra, Areca lutescens, and other Palms requiring more warmth than can be afforded them in the conservatory; and on the front stage of this house Cypripediums in variety were doing well.

Another house is filled entirely with Masdevallias, and a range in two divisions contains a large quantity of Odontoglossums and other species of Orchids of the cool-house, and which are employed to supply plants for orders for either plants or flowers.

Ferns and Palms fill a number of houses, and with both sections those which are useful for furnishing or market purposes are chiefly grown; thus, in Ferns, the many varieties of Pteris serrulata and P. cretica, and Adiantum cuneatum, A. Farleyense, and other species and varieties of Adiantum, form a large portion of the stock; while the Palms have thousands of Kentias, from the seedling just through the soil, to the large specimen; thousands of Cocos Weddeliana of various useful sizes, and large numbers of Latanias, Seaforthias, Chamærops, Coryphas, &c., there being, in the case of some of the species, whole houses full of them. A houseful of stocky Azalea indica, well furnished with bloom-buds, and one of dwarf-grown winter-flowering Carnations, which were just coming into bloom; several houses of plants with coloured foliage, the roof in one being furnished with Nepenthes, and that of another having baskets of Æschynanthus tricolor, an old and pretty plant suspended from it.

Near the forcing-houses, in which the Lilies of the Valley, Roman Hyacinths, &c., are coming on, is a houseful of the finer sorts of double Primula sinensis, which used to fetch such high prices, but which Messrs. Hooper & Co., by propagation, have brought to be as cheap as zonal Pelargoniums.

Large quantities of Aspidistras, Asparagus plumosus, Imantophyllums, Crotons, Dracænas, and other ornamental plants are here grown; and very noticeable are the specimens of the Tree Fern-like Cupania filicifolia, an elegant plant for decorative purposes; a large lot of Todea superba, and a fine stock of the Australian Pitcher Plant, Cephalotus follicularis.

The pit-ground and outdoor nursery are occupied by a varied collection of bulbous and hardy herbaceous plants, those of a showy character, as Iris, Delphinium, Pyrethrum, &c., being grown in quantity. The whole is in excellent order, under the management of Mr. Willingham, who has occupied an important position in this establishment for many years.

Florists' Flowers.

CHRYSANTHEMUM SPORTS.

One of the most sportive of plants is the Chrysanthemum. Sports have appeared much more frequently in this country than in others, but that is probably owing to the fact that the incurved Chrysanthemum is more grown in this country than in others, and it is among the varieties composing the incurved section of Chrysanthemums that the greatest number of sports occur. Indeed, no plant sports like the Chrysanthemum, and it is a curious fact in the history of Chrysanthemum sports that a white variety sports to a yellow, but never the reverse. Sports generally appear on a branch, but sometimes they come up from the roots, and when it does so a root-sport never fixes itself; but when it appears on the branch it always does. Therefore, branch sports are the most reliable, but only that portion of the branch which has sported should be propagated. A variety of the Chrysanthemum seldom sports in one place only. It will go on from year to year without showing any tendency of a sportive character, and then it will sport in several places at the same time, and of quite the same character.

That fine variety of the incurved Chrysanthemum, named Queen of England, and which was raised by the late Mr. John Salter as far back as 1847, has been prolific of sports. In 1856 it sported from a delicate rosy-blush colour to a clear lilac-pink, thus deepening its colour, and it received the name of Alfred Salter. In 1859 it threw a golden sport—a pale gold centre, with a buff and bronzy base—and it was named Golden Queen of England. In 1861 it sported to a beautiful pure white flower, named Empress of India. In 1886 it also threw a bronze sport. So we have thus derived four distinct varieties from one flower through this characteristic of sporting. But that is not all. The Golden Queen of England, itself the product of a sport, in 1882 threw a bronze sport; and the beautiful Empress of India, also a sport, a few years ago threw a striking golden sport, named Golden Empress, and later a primrose-coloured one named Lord Alcester.

There is another favourite and popular incurved flower, bearing the name of Princess of Wales. In colour it is white, tinted with delicate pink. This was raised in 1868. In 1873 it sported to the rosy or lilac-pink Hero of Stoke Newington; in 1886 to the rich golden Mrs. Norman Davis; and in 1887 to the pure white Lord Eversley. In 1873 Hero of Stoke Newington in its turn sported to Lady Dorothy, buff and rose; and in 1887 the golden Mrs. Norman Davis sported to Charles Gibson, a bronze-coloured flower. At the Provincial Exhibition of the National Chrysanthemum Society, at Hull, on the 21st ult., another sport from Mrs. Norman Davis was shown of a deeper golden colour. It remains to be seen whether this will become a fixed characteristic, as some sports soon revert to their original form, and do not occur again. Thus it is that Chrysanthemum growers come to speak of the "Queen" family," and the "Princess" family, but they are made up, not of seedling variations, but of sports; and it is a curious fact that out of something like eighty-six incurved varieties of Chrysanthemums, published in the catalogue of the National Chrysanthemum Society, about thirty have appeared in the form of sports.

The reflexed Pompon and Japanese varieties have yielded sports also, but not so numerously as the incurved types. Some very fine sports have occurred among the Japanese varieties, as in the case of the pure white Meg Merrielies, which threw the pure yellow Ralph Brocklebank, one of the finest varieties seen this season. The lilac-purple Baronne de Prailley threw a fine brownish-orange sport named Carew Underwood, and it is worthy of notice that this latter sport appeared at two or three places at the same time, and in the same form. The pink Alfred Salter sported to the white Lady Selborne; and the latter, in its turn, has thrown a yellow sport; and it is a remarkable fact that sports sometimes take on a more robust growth and finer character than the varieties from which they sported, but not always. Take the sports from Queen of England, and it is seen that Lord Alcester shows improvement; but Bronze Queen just the reverse; and the fine yellow sport from Meg Merrielies, named Ralph Brocklebank, is a stronger constitutioned plant than that from which it sprang. *R. D.*

—— Apropos of this (see p. 607), Mabel Ward is a sport from Eve, a creamy-white variety, and sports very often revert to their original colour. A gardener exhibited at the Brighton show "a sport from Mrs. Shipman," which was neither more nor less than Lady Hardinge, the variety from which Mrs. Shipman is a sport; it was a case of reversion. So many of the incurved varieties now are sports, that in every large collection cases of reversion to the original form may be expected to turn up annually. *J. Douglas.*

The Gold-laced Polyanthus.

What slow progress is made in the direction of adding new varieties of undoubted merit to those already cultivated for exhibition purposes. It almost seems as if Nature had closed her storehouse against raisers, and declared further improvement is impossible. The leading varieties seen at the annual exhibition of the National Auricula Society in London, and also at Manchester, with very few exceptions, are the varieties that were exhibited thirty years ago—George IV., Lancer, Cheshire Favourite, Prince Regent, Exile, Formosa, &c. Through many vicissitudes these have come down to us, and one looks in vain for much improvement upon them. A few years ago, Mr. Samuel Barlow, of Manchester, raised some varieties of considerable promise, that it was hoped would have proved the precursors of a new and improved race—but it has not yet appeared. Mr. Barlow has been unfortunate enough to lose his best varieties, and the work has to be gone over again. Occasionally a new variety puts in an appearance at the Manchester Show.

At the Exhibition of the National Auricula Society last spring, Mr. William Brockbank, of Didsbury, and others, had new varieties of promise; but they remain in Lancashire; and even there George IV., Exile, and Cheshire Favourite still hold their own. This is remarkable, because while every other popular florists' flower is making rapid headway in the matter of the introduction of new and improved varieties, the gold-laced Polyanthus is practically stationary, and has remained so for years.

It has been said that our leading varieties are thrum-eyed, and consequently, the pistil being low down in the corolla, it is difficult to get them to produce seed. Those of us who grow named varieties, know the extreme difficulty of getting a pod of seed from a named variety; and, when it is obtained, the result is too frequently disappointing; the progeny of but poor quality of flower. Perhaps we essay to breed in and in too much, and deterioration is an inevitable result. I think it will be a wise step to do what is often recommended to be done—to make a good pin-eyed flower the seed-parent, using for fertilising purposes the pollen of a refined variety like Cheshire Favourite, George IV., or Prince Regent. Good pin-eyed flowers appear among seedlings, and if it is possible to obtain one perfect in point of shape, the lacing pretty much all that could well be desired, the body colour well proportioned, and the yellow or ground-colour pure and brilliant, such a flower is most useful for fertilising purposes. A good flower of this kind should be propagated for seed purposes, crossing on to it any seedlings it may have thrown of a desirable character.

George IV. is desirable as a pollen parent because of its robust growth, large size of pip, and the possession of other desirable qualities; but it often comes coarse. Still, it can be made very useful, and should be employed for the purpose above suggested. It seems to be always scarce and dear, compared with other named varieties. The measure of beauty in a Gold-laced Polyanthus, is, all things else being equal, their property of refinement. I have seen Cheshire Favourite shown in the north in such a character as to excite the highest admiration. The setting of lustrous black in a bed of bright pure gold makes a combination of rare beauty. Somehow or the other we do not impart to our southern grown flowers the refinement seen in some of those shown in the north. I think it all lies in the knack of cultivating them, and therein the Lancashire florists have an advantage over us. I have seen Mr. James Beswick, of Middleton, stage George IV. and Exile in a character scarcely ever seen in the south, and then there is a bewitching beauty about the gold-laced Polyanthus all its own.



FIG. 89.—SALVIA BETHELLI: COLOUR OF THE FLOWERS PUCE. (SEE P. 652.)

So far, the plants of named variety look well; but they have yet to pass through the critical part of the winter. Hardy as they undoubtedly are, I do not think it wise to subject them to the trial of very hard frost. Hard frost and fog in combination appear to try them severely; if exposed to a soaking of rain, and hard frost follows, some losses are pretty certain to occur. My own plants are in my Auricula-house, the soil about the roots fairly dry, but not dry enough to lead to dry rot. I stand the pots in other pots, and cover the plants with newspapers in order to mitigate the effects of frost while it is sharp, as at the time I am penning the foregoing. *R. D.*

Stokesia cyanea.

In Messrs. Paul & Son's nursery, at Cheshunt, I noticed that a large quantity of this handsome Composite had been potted up to flower in the winter; they have a continuation of its really handsome pale blue flowers until March. It is a native of the Southern United States of America, Georgia, South Carolina, &c., and considered by Messrs. Torrey & Gray to be "one of the rarest plants of the United States." In Nicholson's *Dictionary of Gardening* it is stated to be a greenhouse plant. Even if it is not quite hardy, it is certainly an excellent subject to grow in the open borders in summer for flowering in pots during the winter. *J. Douglas.*

The Apiary.

THE HONEY HARVEST IN ABERDEENSHIRE.

To apiarians the past season has been of a varied character. The heat and brilliant sunshine of early summer created swarming of a wild nature, which did not tend to maintain strong broods all over. The Clover season, however, having been dry, was comparatively fruitful, but the succeeding rains rendered the Heather period rather unfavourable for the gathering of honey. The latter portion of the season has thus counteracted the progress of the early part. The contents of the hives vary from 30 lb. to 50 lb. each. The price of Clover-honey is about 6*d.* per pound, and Heather-honey 7*d.* to 8*d.* A good deal of artificial feeding will, doubtless, be necessary during the winter months, particularly in the case of late broods, which are, as a rule, weak. The inclement season of last year has also to be taken into account in reckoning the results of the present year, from the fact that many of the broods were weak to begin with, in consequence of the indifferent yield of the preceding year. Taken as a whole, the season may therefore be considered better than last year, and only a middling one for the bee-keeper. *W. K.*

How to make Honey-Vinegar.

Possibly this may not be generally known, although there cannot possibly be a more harmless or wholesome vinegar. Some years ago Mr. W. Z. Hutchinson, of America, gave a very good recipe in the American *Bee Journal*, which was much as follows, and which is an excellent one:—"The cappings should be put into a dripper, and allowed to remain about twenty-four hours, then put into as much water as you may reasonably expect to sweeten a little sweeter than good new cider, with the cappings that you expect to have. I fill an ordinary whiskey-barrel with water, and the honey from the cappings in extracting 1000 lb. of honey usually makes it sweet enough. The cappings are left in the water an hour or two, then skimmed out, and put into a strainer to drip dry, which they will do in ten or twelve hours. The drippings are, of course, saved, and put into the barrel. This slightly sweetened water soon begins to work, and the scum may be taken off with a wire, cloth, or other skimmer, as often as is necessary, until nothing rises. This sweetened water passes through all the stages of fermentation, the same as cider, until it reaches the point called vinegar. One year, perhaps less, makes it a very beautiful vinegar. We have used no other vinegar in our family, except for a short time, when I had no bees.

"There is probably no profit in making vinegar from good saleable honey, but in keeping bees there is often waste honey that is of little value. I know of no method of getting cappings ready for making into wax that is so convenient and profitable, and the vinegar is known to be pure. I keep the barrel covered with a cotton cloth, and there is not much danger of getting the water too sweet. If very sweet, of course it takes longer to get to vinegar, but it makes better honey in consequence."

Such, in substance, is the instruction given by Mr. Hutchinson, and it is very valuable. No part of the products of the industrious little bee is useless to man, and all ought to be brought into use. In the case of persons who keep bees in the old-fashioned skeps, there are, in fact, four products: 1, the pure run-honey; 2, the first washings of the comb, which makes excellent mead; 3, another washing, which will make vinegar; and, 4, the wax. After the above washings, very clear and excellent wax may be obtained. Mr. Hutchinson, of course, is a modern beekeeper, but whichever method is adopted, the vinegar may be obtained by any person of ordinary intelligence. *Bee.*

Plants and Their Culture.

The Plant Stove.—The temperature of the air in this house should be kept during the month as low as it is safe to do so—say 60° at night, and on cold days 65° will be high enough, allowing a few degrees rise in the morning if the sun comes out; a small amount of ventilation at the top of the house being afforded whenever the weather will allow of it, and closing early. Any plants in bloom should be stood at the warmer part of the house, and hardier subjects, as Palms, Pandanus, &c., will for the next month or two do well in the cooler part; and if kept clean they will give valuable aid to the general effect. Epiphyllum Russellianum truncatum does well at the cooler part of the stove, and Poinsettia pulcherrima and Euphorbia Jacquinæflora in the warmer and drier places. Damping down and syringing for the next few weeks will require great care, and advantage taken of sunny mornings if any heavy syringing has to be done. Gardenias and other plants which need a somewhat greater degree of moisture and more warmth than the other inmates, should be grown in a pit by themselves. The older Gardenias will now be blooming well, if they have been kept cool as advised early in the autumn. I rely on very early struck cuttings for early spring supply, which were taken off of a good length, and grown on rapidly, and which are now of large size in 7 and 8-inch pots. Gardenias are but little trouble if kept clean during early growth, and give many large blooms with dark green foliage.

Allamandas, Bougainvilleas, and Clerodendron Balfouriana will need no water if they are placed at the cooler part of the house, which is free from damp or drip. Clerodendrons will not endure so much drying off as many other plants, and should therefore be examined every fortnight, and not be allowed to shrivel from want of root-watering. Large Allamandas in borders should be kept dry, and means taken to prevent drip from other plants reaching the borders; and if the shoots are not yet thinned out, this operation should be at once done by cutting back weak growth—this will allow of light falling on the plant beneath. Cissus discolor may be rested, and if the plants are in pots, they may be removed for a time to the back part of the house.

Plumbago rosea is a suitable subject at this season for covering a wall or the front of house, and when old plants are employed for this purpose, and the shoots not pruned in, their long flower racemes are effective if they are loosely tied in. These plants are gross feeders when in robust health, and should often have liquid manure afforded them. Begonias will require assistance at this date to keep up a succession of bloom. Specially grown for winter flowers, John Heal and the later introduced hybrid from that variety, Adonis, will, I think, be found two serviceable plants, the colours being good for decorative purposes. B. fuchsioides and B. Knowsleyana are useful species at the present date, as is the well-known B. Weltoniensis for flowering in its season. The free-blooming Lasiandra macrantha, very effective during the winter months, may be grown easily, and should not fail in any collection of stove plants. Plants may be brought on in succession by retarding some, and bringing them into the house a few at a time. The plant is readily increased, and it needs only one season to make a good plant. A compost of good loam, peat, and coarse sand suits it. Aphelandras should now be in flower, and may be placed in a light position at the warmer part of the stove, and afforded manure-water occasionally. Gesneras, as they go past their best, should be dried off gradually. Alocasias will need but little water at the root until growth recommences.

Marantas should get similar treatment to the foregoing, and care taken not to expose the foliage to draughts of cold air. Calanthes are now in full bloom, and should be kept in a dry atmosphere whilst opening their flowers, and near the light, so that their colour is not spoiled during foggy weather. A temperature a few degrees higher than that of the ordinary stove is beneficial to them; but a temperature lower than 60° will cause the flowers to fall. As the plants go out of bloom, place them on a shelf and give no water for a time, as a long and thorough rest is the chief secrets of successful flowering them. Where there is a large number grown, they will take up less room if shaken out of the pots when their flowers are past, and the pseudobulbs put close together in pans of silver sand or Cocoa fibre, and placed on a shelf till they commence to grow.

The Greenhouse and its Supply-pits.—Chrysanthemum cuttings should be taken early, so as to get large plants and blooms next year; but plants for general decoration or for blooming late may be struck at a later date, as it is better to strike them late than to allow them to remain a long time in the cutting-pots, and become stunted and starved. The cuttings may be struck in a close frame with very little bottom-heat, and singly or three or more in a pot. Carnations now coming in may enjoy a higher temperature during foggy weather, and greenfly must be watched for and kept down by fumigation. The plants should be assisted with manure-water if the pots are full of roots. Keep the spring flowering varieties cool and with plenty of air, and look out sharply for signs of mildew, which is a source of trouble if neglected in the early stages. A house, or a frame which is damp soon causes it to spread at this season. Those who saw the fine group of Miss Joliffe Carnations exhibited at the last meeting of the Royal Horticultural Society, would notice how admirably decorative are Tree Carnations when well done. Cyclamens, and single and double-flowered Primulas will require a dryish house during the next few weeks, and any plants still in cold frames should be brought into the greenhouse, and placed on the shelves. It is well to keep the successions of Primulas in frames to a late date, but they should now be in drier quarters. As a rule, Primulas need a little more warmth than that of a cold pit or frame from the beginning of November. I still rely on the "old double white" for cut blooms, as it is still the most prolific of flowers if grown in a warmth of 45° at night and 55° during daylight, and the plants afforded weak liquid manure occasionally. The foliage will also keep of a deep green colour if a little clear soot-water be given to the plants of single and double varieties. Cinerarias often suffer from attacks of mildew, and this parasite must be got rid of, or the leaves will be disfigured. A little heat in the hot-water pipes during the day, with a moderate amount of air, will be of benefit to these plants. *G. Wythes, Syon Gardens, Brentford.*

The Orchid Houses.

Ventilation.—In the matter of ventilation during winter, it is better to be as liberal as is practicable and safe, a little air being allowed even in frosty weather, and the opening of the ventilators increased as the thermometer indicates that the heat given by the piping is more than is required to keep up the proper temperature. Plants suspended near the openings of the ventilators should be removed to a safe distance. Often in winter, we get mild and spring-like intervals, and when these occur the most should be made of them by affording the plants a thorough airing, even so far as to open the doors for a few minutes if the outside temperature should render it safe. Fogs are the great destroyers of Orchid flowers, but they do not injure the plants in

a proportionate degree. In foggy weather it is best to keep the heat low, and the ventilators shut.

The Temperature.—For December these should be, for the Warmest-house, 65° to 70° by day; 60° at night. The Intermediate-house, 60° to 65° by day; 55° at night. The Cool-house, 50° to 55° by day; 45° at night. The lower night temperatures should most strictly be observed, as excessive night heat is far more injurious than a too high day temperature. Falls in the temperature—so hurtful to the plants, ought to be carefully guarded against, and the man in charge of the fires should be told to clear them of clinkers frequently, and to see that there is a bright fire in the back of the fire-way: the front generally goes all right. Four-inch hot-water piping is by far the best, and gives off the most gentle heat; indeed, I would myself never put 2-inch or 3-inch piping in an Orchid-house.

I have observed cases in which the plants did not thrive satisfactorily in houses heated by 2-inch and 3-inch piping, but succeeded well enough when the smaller pipes were replaced by 4-inch. Blank ends, and the fronts of houses should be covered with mats during very severe weather, unless sufficient heating power be at command to render the precaution needless; but when mats are made use of, they should be removed as frequently as the weather will permit, in order to let in all the light possible on the plants As in summer, careful shading and ventilation play important parts in successful Orchid culture, so in winter well-regulated heating and reasonable ventilation are of the first consideration. As a guide thereby to balance the heat with the air admitted, so that the proper temperature be observed, a thermometer should be in every house, and continually consulted. "Rule of thumb" in these matters is too often permitted, and as a consequence many a good house-full of plants has been ruined by the stoker. It is a mistake to suppose that hard driving of the heating apparatus is the proper thing to do in hard weather; and it will be found that an even temperature can be far better kept up by keeping clear fires; and this is best attained by putting on a little fuel at short intervals. *J. O'Brien.*

The Flower Garden.

Protection in Severe Weather.—For the time being, severe frost has destroyed all flowers that were left out unprotected, but there is still work to be done by the gardener, and the foremost is that of protecting all plants which are of doubtful hardiness, and the most important of these are Tea Roses. Bracken, or long stable litter with the droppings shaken out, are excellent protectors from frost, and a very little of either needs to be laid round about the stem and rootstock of the plants, and the same will also be a protection to spring flowering plants and bulbs that may be planted amongst the Roses.

New Zealand Flax is not quite hardy in low or damp places, and the foliage should therefore be drawn closely together with matting, which will protect the hearts of the plants, and coal-ashes or cocoa-fibre about 4 inches in depth placed over the roots. Lilium auratum and other choice species, also Gladiolus, and Hyacinthus candicans, left to winter in the ground, would be safer if the same kind of covering were applied to them. Other open air operations which may well be carried out in severe weather, when there is no snow, consist of raking up leaves, sweeping of walks and roads, and carting of manure and soil in readiness for top-dressing trees or shrubs that need to have their waning vigour renewed. This work can be done at any time during the winter, when the weather is open; but the transplanting of trees of every kind should now be postponed till near the end of February, and meanwhile, so far as the weather will permit, levelling of turf, regravelling, making new, and repairing existing walks, and alterations of all kinds should be done with dispatch.

Bedding Plants.—These plants, if standing in cold frames, should be made secure from frost by the application of mats, bracken, &c. Even the hardiest, such as Violas and Calceolarias, receive a check in growth by the freezing in the frames of ever so slight a nature. Bedding plants in warm houses will suffer from the very opposite cause, that is by making growth which falls a ready prey to insect and mildew attacks, unless they are allowed plenty of space and abundant light. The best places for these plants are shelves near the glass. Pelargoniums are an exception, and, if space be inadequate, old plants may, for the time being, be stood in any out-of-the-way place so long as they are not liable to be frozen, and are afforded a fair amount of light, and kept dry—not dust dry, but approaching that point. From now onwards to the beginning of the new year is the most trying time for all tender bedding plants, such as Alternantheras and Coleus, and by affording them plenty of heat is the only sure way of keeping them in health; and as a very few stock plants will produce any number of cuttings in March and April, the space they need to occupy is really so small that the permanent occupants of warm houses are not injured by them. *W. Wildsmith, Heckfield, Hants.*

The Hardy Fruit Garden.

Tree Protection.—The stems of young standard trees of Apples, Cherries, &c., in orchards and exposed parts outside the walled-in garden, will require protection where there are hares and rabbits, as these creatures are sure to injure them, and often in one night during a frost. The best kind of safeguard is a strip of wire-netting placed around each, and which should be fixed a few inches away from the stem. Failing this, let the stems be painted for about 3 feet from the ground with a mixture of cow-dung, soot, and a wine-glass full of paraffin oil to a gallon, mixed to the thickness of paint, and applied to the trees with a brush. Repainting the stems may require to be done twice in the winter.

Now is a good time to prepare stakes for, and get trees staked. In removing the old cushions from the trees, see that these are carefully taken away and burned, as in them harbour many injurious insects. Stakes may also be placed to all recently planted trees, but the final tying of these should be left till a later period. A list of the names of trees should be prepared, and the labels made, during the bad weather. Strips of lead on which the names are punched form a good kind of label for fruit trees, and should be fastened to strong, durable stakes, about 1½ foot high, driven into the ground a few inches away from the stem of the tree. *H. Markham, Mereworth Castle, Maidstone.*

Fruits Under Glass.

The Cucumber-houses.—The weather has been at its worst for Cucumbers in this midland district—dense fog, with rain, causing loss of foliage by damp, and making it thin and deficient in colour. Not to distress the plants much, only sufficient fruit for current use should be left on the bines, the shoots thinly trained, and the foliage arranged so that one leaf does not shade another. Every advantage should be taken of clear and mild days to give a small amount of air; and not too high a temperature should be observed, or growth will be very weak—65° to 70° will do at night, and by day a few degrees higher. A Cucumber-house should have plenty of hot-water pipes if fruit has to be produced during the winter, and there is then no need to have them very hot. In applying water while the weather keeps dull, a good deal of care is required, but if there be no need to heat the pipes to a high degree, not a great deal of watering will be found necessary. Top-dress only when the young rootlets appear, and then put a few handsfull of compost over them, consisting of one-half loam and one of Mushroom dung, and this soil should always be kept in the house for the purpose of top-dressing. A too heavy or indiscriminate top-dressing at this time of year is, I think, more hurtful than beneficial. A fine day should be chosen for watering the plants, and the water used should not be of a lower temperature than the air of the house. Tree leaves should be got together in quantity, and stored in readiness for making hotbeds.

Figs.—Prune the trees, thinning out the shoots as soon as the leaves have fallen, and tie them to the trellis at about 3 inches apart. After doing this, remove all the old surface soil down to the roots, and top-dress with a compost of loam, some finely broken bones and old mortar finely pulverised, make this quite firm, and cover it with some flat boulder stones to serve as a protection to the roots and the soil when affording it the required large quantity of water. The stones, it will be found, will encourage the roots to the top. Prepare for the early trees in pots by getting the plunging material, if of leaves, turned over and sweetened, and put in the house in readiness. The plants may be stood on the top of the heap for a time, and when finally plunged in it, the bottom-heat should be at about 80°; for the starting the night temperature at 45° to 50°, and the day at 60°; the trees and paths should be syringed several times during the day, and a genial humid atmosphere kept up, warm water being used in watering. *W. Bennett, Rangemore, Burton-on-Trent.*

The Kitchen Garden.

Work During Frost.—Get manure placed on to the kitchen garden quarters, and spread over the ground as it is wheeled on, to prevent the frost penetrating too far; trenching and digging can then be proceeded with.

Heavy Soils.—The rougher these are left after the winter's digging, the better they will be at seed time. Manures for heavy soils should be strawey, and not much decayed; road-grit and burned soil are also excellent materials to dig in, or mix with the surface soil, as they secure porosity. All soils are better for being deeply tilled, and where practicable, some considerable amount of double digging should be carried out every year; and where the subsoil is not very rich, Cabbages, Cauliflowers, and Spinach may be sown and planted the first season. In trenching, the manure should be placed on the top of the first spit thrown up, and the second set up as a ridge on the top of that one as roughly as possible; and for Parsnips, Carrots, and other deep rooting plants, the manure should be placed in the bottom of the trench so as to secure clean straight roots. Light ordinary soils can scarcely be overdone in the matter of manure, and the lighter the soil the heavier and more decomposed should the manure be. The same system must be observed in the application of the manure to the soil for the various classes of crops. If for Beet, Carrots, &c., the manure should be placed at least 15 inches below the surface, so that clean fibreless roots be obtained. Another benefit arising from deep cultivation is, that the roots descend deeply, and are not stunted by drought in summer; and should the season be a wet one, there are greater facilities for the passage of water to the subsoil, and so into the drains. In cultivating land in winter, it should always be done with a view to the crop which will occupy it. Rotation is also to be kept in view. Although many good gardeners will produce the same crop year after year from the selfsame piece of land, without diminished results, excepting what may be due to the variations in the seasons, by the application of manure every year, it is not a practice to follow generally.

Ground occupied by Celery this season will form an excellent place for the spring-sown Onions. The Onion brake of this season is now under crop with winter Cabbages, ground occupied by Peas during the past season will carry Beetroots, Carrots, and other long roots, next year without manure. Potato ground will now be mostly under green crops, but as these are cleared a good coating of manure should be afforded it, and also a good stirring up, and it will then be ready for Peas and Beans. *W. B. Baillie, Luton Hoo.*

An Interesting Discovery.—The celebrated Breslau botanist, Professor Cohn, recently proved, by a series of exhaustive experiments, that the heating of masses of damp hay to a temperature resulting in spontaneous combustion is caused by a fungus. He first examined the heating action of the Aspergillus fumigatus, a plant having an evil reputation for causing illness, and which occasions the heating of sprouting Barley. Through the breathing of the small germ—that is to say, through the combustion of the starch and other carbon-hydrates, which are changed by diastatic fermentation into maltose and dextrine—an increase of temperature to about 40° C. follows, when the germs become stiff and heated, a condition in which they soon die. A heating of the germs to over 60° C. takes place only when the fermentation activity of the Aspergillus fumigatus sets in, and this exhibits its highest development and action in a temperature above blood heat, in which state it rapidly consumes the carbon-hydrates. Of all the actions of the fungus, and these are of an extremely manifold character, this action of the Aspergillus fumigatus is probably one of the most singular.

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

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W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

MEETINGS.

TUESDAY,	DEC. 10	Royal Horticultural Society: Fruit, Floral, and Scientific Committees, at Westminster.
WEDNESDAY,	DEC. 11	National Chrysanthemum Society: Committee, at Aquarium, Westminster.

SALES.

MONDAY,	DEC. 9	Lilium auratum, from Japan, Dutch Bulbs, &c., at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
TUESDAY,	DEC. 10	Lilies and other Bulbs, at Protheroe & Morris' Rooms. Roses, Greenhouse Plants, &c., at the City Auction Rooms, by Protheroe & Morris.
WEDNESDAY,	DEC. 11	Roses, Fruit Trees, Shrubs, Border Plants, Bulbs, &c., at Stevens' Rooms. Glass Erections, Plants, &c., at Clapham Road, by Protheroe & Morris. Greenhouse Plants, Bulbs, &c., at Protheroe & Morris' Rooms.
THURSDAY,	DEC. 12	Orchids in Flower and Bud, at Stevens' Rooms. Dutch Bulbs, at Protheroe & Morris' Rooms.
FRIDAY,	DEC. 13	Imported and Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	DEC. 14	Roses, Fruit Trees, Shrubs, Border Plants, and Bulbs, at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—40°.8.

*** **OUR ALMANAC.**—Secretaries of societies would greatly oblige by forwarding, as soon as possible, to the Editor, for insertion in the Almanac, which will be issued with the first Number of the New Year, any information respecting the dates fixed for horticultural and botanical meetings and shows in 1890.

Scientific Papers of ASA GRAY.

ASA GRAY, the great American botanist, was as much respected, and hardly less beloved, on this side of the Atlantic as he was in his own country. The reasons for this are not far to seek. His single-minded pursuit of truth, his indefatigable industry, his clear judgment and wide range of knowledge obtained for him the respect of all who knew his works, whilst the charm of his personal qualities and the amenity of his social relations endeared him to all who had the honour and pleasure of his acquaintance. Except indirectly, ASA GRAY was not specially a horticulturist—not one of the many books and memoirs which he published is strictly or exclusively of a horticultural character; but, for all that, GRAY has claims on the veneration and respect of all those interested in the scientific side—that is, with the progressive aspect of horticulture. His life-work was largely devoted to descriptive botany. As the great North American continent became more and more explored, and travellers and collectors increased in numbers, so the material pouring in upon ASA GRAY in his herbarium became greater and greater. In early life, together with TORREY, he planned and partially carried out a complete Flora of the Northern United States. In middle age he worked incessantly at it, but still the material poured in faster than he could deal with it. In old age he scarcely relaxed his efforts, feeling that although the hope of bringing the work to a conclusion must needs be abandoned, yet that every new species described, every error corrected, every new fact made known, was a substantial contribution towards the completion of that work, which, whether brought to an end by him or not, would redound to his credit so long as the study of plants has interest for any one. Of course he was not insensible to personal gratification; he would not have been a man otherwise. He was jealous of his fame, and anxious to stand well with his fellows; but no mere hope of gain, nor any sordid motive found place beside his unquenchable zeal in the search after the truth.

Descriptive botany did not absorb all his time. Much was given to the preparation of educational works — works distinguished by clearness of style, accuracy of proportion, and soundness of judgment. His great experience and wide knowledge rendered any expression of his views upon the controverted scientific topics of the day peculiarly valuable, and hence we find a special interest attaching to the memoirs which he published on points of morphology and geographical distribution. These were not numerous; they did not range over so wide an area as did those of his friend BENTHAM, not to mention others now living, but they were as eagerly sought after, and were accepted as guides and exponents by those whose circumstances did not permit them to form an independent judgment. This was more especially shown by Dr. GRAY's writings on the Darwinian question.

GRAY began his career as an adherent to the notion that all that we call species were independently created as such, although endowed with an inherent power of variation, differing greatly in degree in different cases. Thirty years ago this was the doctrine universally taught in our colleges; the leaders of scientific thought, without exception, adhered to it unquestioningly. We all know how completely the views of naturalists have changed, but the present generation of students naturally cannot realise what a revolution has taken place, nor can they—unless feebly—estimate the wrench which the leaders of science of those days must have experienced when compelled by the irresistible force of the accumulation of facts and reasonings collected and made public by DARWIN and WALLACE to abandon the old traditions, and accept others of the same character, though not identical in detail, as those at which they had been in the habit of scoffing. We know who were the men who were bold enough to sacrifice dogma for what they believed to be the truth, and we honour and respect them accordingly. Foremost among these was ASA GRAY, the apostle of Darwinism in America. The known character of the man, his religious temperament and theological tenets, served to arrest the attention of the thoughtful American public, and relieved them from the dread that the new views of the relationships and lineage of created beings were of necessity iconoclastic and destructive. People have got over these unreasonable fears now. They have found that the great principle of evolution may be held consistently with some of their cherished beliefs, indeed furnishes the most satisfactory assurances of their reasonableness, whilst being entirely independent of them it can have no effect injurious or otherwise upon others. Thus, GRAY was by temperament and force of circumstances placed in the breach between the supposed iconoclasts and the anarchists on the one side, and the militant and aggressive and the timid on the other. Admirably he filled the post. Recognising that the search after truth was the aim of both parties, and that their disputes and controversies were in a large measure due to ignorance and misunderstanding on the one side and on the other, he was able to moderate the excesses of both, and to prove that though the methods of the disputants differed, their common aim was identical.

Another large section of GRAY's works consisted in reviews, some slight, others profound and critical, of the works of others. In this way probably no works of first-rate importance in botany or kindred science escaped his notice. His collected works, therefore, supply a history of the progress of botanical science during the middle decades of the century. This period now closing is well defined, and a very important one in the history of science, so that the critical remarks of a writer like GRAY will be peculiarly valuable to the student in the future, even as they were and are serviceable to those desirous of knowing in what channels scientific thought is working, and what was the character of the harvest inbrought by the labourers. What the general character of GRAY's criticism was may be judged from what has already been said of the man. It was sympathetic, judicious, discriminative. When surgery was needed, the instrument with which it was effected was well tempered, keen, free from contamination. It was wielded firmly, fearlessly, and neither too much nor too little for the benefit of the patient. The stab might be sharp, but it left no rankling sore, and the good relations between the criticised and the critic were not impaired.

It is only in this general and discursive fashion that we can notice a work just issued by Messrs. MACMILLAN, and edited by Professor SARGENT.* GRAY's first paper was dated in 1834, his last in 1887, and during the interval not a year passed without the publication of a book, or a paper, giving the result of original researches, generally of many such. From such a mass we should not know what to select for comment, we have therefore confined ourselves to generalities as indications of the work that GRAY did.

Professor SARGENT must have felt the same difficulty, but he has exercised his selection judiciously. A few of the extracts were perhaps scarcely worth repeating; but on the whole, the Editor has succeeded in laying before the reader an excellent summary of such portions of GRAY's life-work as were suited for a work of this character. It will interest the general reader while, as we have said, it will furnish valuable historical material to the student.

NEPENTHES CURTISI.—Two years ago (Dec. 3, 1887) we published a description, and gave a page illustration of a handsome Nepenthes, introduced from Borneo by Mr. CURTIS to Messrs. VEITCH's nurseries. In that description we said the large pitchers are "likely to improve under cultivation." Well! they have done so. Nepenthes Curtisi, as now seen at Messrs. VEITCH's, and as exhibited

* *Scientific Papers of Asa Gray.* Selected by CHARLES SPRAGUE SARGENT. Two Vols. 8vo.

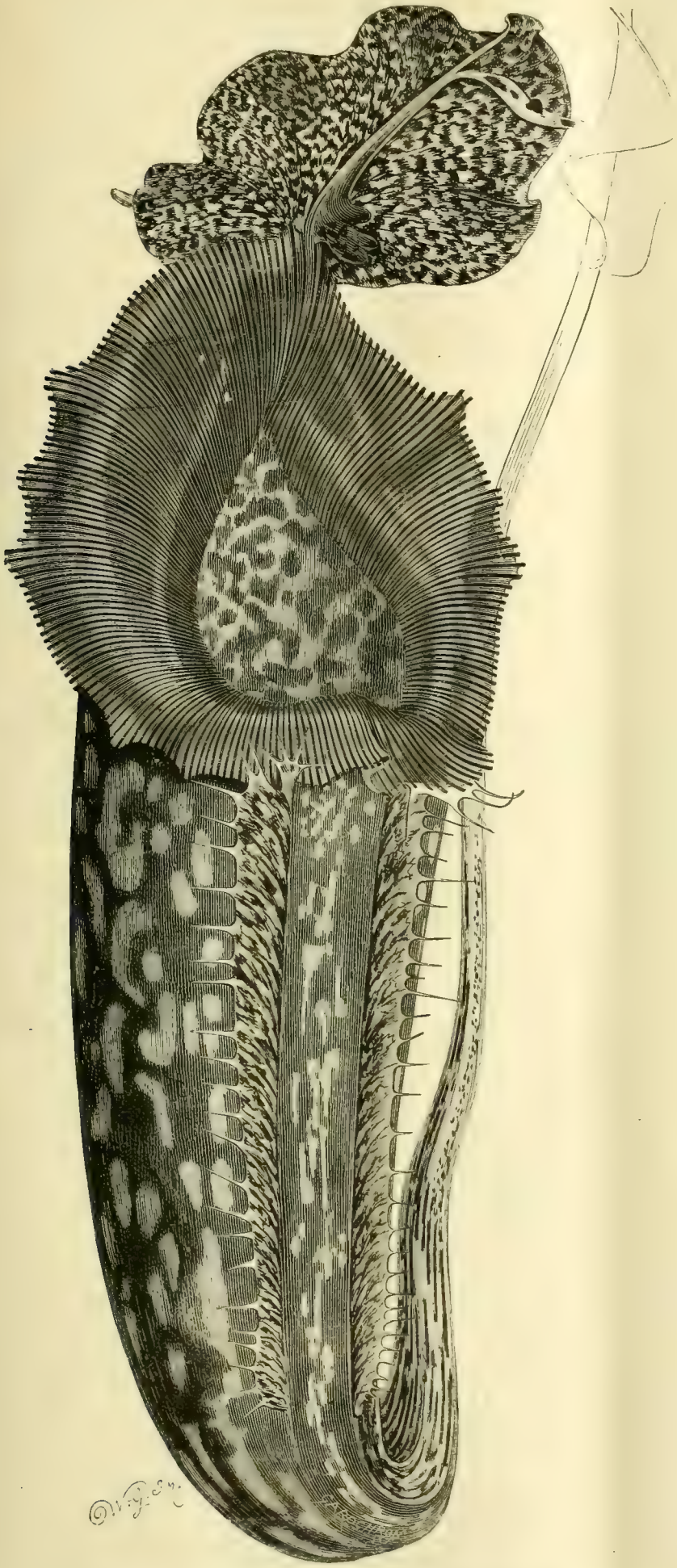


Fig. 90.—Nepenthes curtisi: green, spotted with maroon.

by them recently, has improved so considerably as a decorative plant that, fine as we then thought it to be, it is so much finer now that we have not hesitated to commission Mr. Worthington Smith to make another illustration, in order to render justice to the plant (see fig. 90). The ground colour is a dull Apple-green, the spottings reddish-purple. Our artist says "intense liver," which reads indigestibly! Happily the botanical characteristics remain as before, so that, with the exception of the dimensions, no material alteration need be made to the account given at p. 681 (Dec. 3, 1887). The peculiarity distinctive of this species lies in the presence of two teeth-like projections, from the under side of the lid from the base and from near the apex respectively. This is a peculiarity which, in the interests of science needs investigation and watching, while it certainly adds to the appearance of the pitcher. *M. T. M.*

The Gardeners' Orphan Fund.—The usual monthly meeting of the committee took place at the Caledonian Hotel, Adelphi, on the 29th ult., Mr. William Roupell in the chair, in the unavoidable absence of Mr. George Deal. The minutes of the last meeting having been read, a letter of sympathy with Mr. William Richards, of 41, Wellington Street, condoling with him in his long illness, and trusting that the voyage he is about taking to New Zealand and Sydney may result in his restoration to health was signed by all present. Sums of money from various special sources were announced:—From the Chiswick Gardeners' Mutual Improvement Society, £12, the proceeds of a concert given at Chiswick in aid of the Fund; from the following flower shows: Bristol, per Mr. Vallance, £1 11*s.* 6*d.*; Rugby, per Mr. Bryant, 6*s.* 8*d.*; Wimbledon, per Mr. Lyne, 14*s.* 6*d.*; and Twickenham, per Mr. W. Bates, £2. Some sums by means of collecting cards were also announced. In each case a hearty vote of thanks was awarded to the senders. Some correspondence was read from Mr. Tait, of Messrs. Dickson, Brown & Tait, of Manchester, with reference to a proposal made by him to place a child upon the Fund. The matter was adjourned, pending further negotiations. A tender from Messrs. H. M. Pollett & Co., for printing the necessary number of copies of the annual report and list of subscribers, was accepted; and the Hon. Secretary was authorised to obtain 5000 subscription forms. The proceedings closed with a vote of thanks to the Chairman.

Horticultural Club.—The usual monthly dinner and *conversazione* will take place at the Hotel Windsor, on Tuesday, December 10, at 6 p.m. The subject for discussion will be "Insecticides, and the Best Modes of Applying them," to be opened by Mr. C. E. Pearson.

Chrysanthemums in Paris.—These flowers are becoming as popular in Paris and in the Atlantic United States as with us. The exhibition at Paris was held on the 21st ult., and was attended by a large concourse of people.

Banquet to M. Hardy.—On the 21st ult. a banquet was given to this gentleman, the Director of the State School of Horticulture at Versailles, and who presided over the Horticultural Section at the recent Paris Exhibition. According to the *Revue Horticole*, the banquet was a marked success, M. Hardy being held in the highest esteem by his fellows.

M. Naudin.—One of the last acts of the ex-Emperor of Brazil was to send to the venerable botanist of Antibes the decoration of Commander of the Order of the Rose, in token of His Majesty's appreciation of the valuable services rendered by M. Naudin to botany and horticulture.

A Proposed Exhibition of Pinks.—A circular has just been issued, stating that the Directors of the Royal Aquarium have offered to give facilities for an exhibition of the florists' laced Pinks in connection with one of the shows to be held at the Royal Aquarium under the management

of Mr. WILLIAM HOLMES, and soliciting subscriptions towards the provision of a prize fund, so as to promote a revival in the culture of this once favourite flower. The movement has the support of the Rev. F. D. HORNER, and of Messrs. BARLOW, Manchester; THURSTON, Cardiff; B. SIMONITE, Sheffield; TURNER, Slough; J. LAKIN, Oxford; B. WYNNE, London; R. DEAN, Ealing, and others; Mr. E. R. JOHNSON, 90, Harleyford Road, London, acting as hon. secretary *pro tem.* It is intended to confine the operations of the promoters to offering prizes for florists' laced Pinks, and for bunches of border garden Pinks. Should the necessary funds be forthcoming, in addition to the contemplated exhibition at the Royal Aquarium for Southern growers in June, one will also take place in one of the Midland Counties in July, in order to give the Northern growers an opportunity for exhibiting their flowers also. It is proposed to form a committee, and issue schedules of prizes with the least possible delay, but much will depend upon the amount of support forthcoming.

ROYAL MICROSCOPICAL SOCIETY.—The next meeting of the Society will be held on Wednesday, the 11th inst., at 8 o'clock, when the following paper will be read:—Mr. A. W. BENNETT, "On the Freshwater Algæ and Schizophyceæ of Hampshire and Devon."

SIR RICHARD OWEN'S COTTAGE.—It is understood that the QUEEN has been pleased to inform Sir RICHARD OWEN that the picturesque little cottage in Richmond Park, which he now inhabits by her favour, will, after his death, be allowed to Mrs. WILLIAM OWEN, the widow of his only son, for the term of her natural life.

AN AGED THUIA.—Mr. SOWERBY has exhibited to the members of the Royal Botanical Society a curious dwarf tree, the Japanese Thuia obtusa, and explained that, though only 2 feet high, it was 130 years old. These dwarf trees, added the learned Secretary, were good illustrations of the power of endurance of plants under severe ill-treatment, and there were some nearer home which taught the same lesson. In the Society's garden might be seen several specimens of the common Oak between forty and fifty years old, yet only some 10 or 12 inches in height. They had been planted as an edging to a flower border, and kept clipped like the old-fashioned Box.

THE MASSACHUSETTS HORTICULTURAL SOCIETY.—Mr. SPOONER, a well-known nurseryman, of Boston, has been elected President of this renowned Society. A portrait of the President elect is given in the *American Florist*.

NEW CHRYSANTHEMUMS. — The *American Florist* notes the receipt at New York of a set of new varieties from Japan, among which are interesting seedlings from Mrs. Alpheus Hardy of "all sorts of colours, but never a hairy one among them." It will be remembered that among the curiosities sent us lately was a flower-head, half the florets of which were hairy, the other half smooth.

POLYGONUM AMPLEXICAULE VAR. OXYPHYLLUM.—Under the name of Mountain Fleece, Mr. W. FALCONER, writing in the *American Florist*, recommends a hardy perennial from the Himalayas. It was figured in *Bot. Mag.*, 6503, and is in the opinion of Mr. FALCONER the grandest hardy herbaceous perennial that there is in October. Its fleecy white flowers are suitable for bouquets, &c., where required for a short time only.

HOW TO DO BUSINESS.—"We are very busy, and shipping a great many herbaceous plants. The demand for these plants is growing rapidly. When we began growing them as a specialty—about six years ago—it looked like a hopeless task to make hardy plants a paying business. We now have customers from Nova Scotia to Texas." This is what one of the largest firms, dealing in this class of plants, in the country, writes us (*American Florist*). Now, there are a million families in this country to-day who want this sort of stock, and it depends upon you to supply them. Most of these people don't know what they want, don't know, in fact, that they want anything, so you have got to tell them that they want it, explain to them why they want it, show them what they want, and then let them have it—good plants of the hardiest, thriftiest, most showy and desirable stock, and at reasonable prices.

DULWICH PARK.—This fine piece of land, which is to be devoted to the use of the public, will be laid out by Messrs. CUTBUSH & SON, nurserymen, Highgate, N., whose estimate of £1014 has been accepted by the London Council; and the work of tree planting will be at once taken in hand, weather permitting, so as to complete that part of the work before the end of the year—a questionable proceeding if the land has not been well prepared by trenching and weathering.

HANDBOOK OF BROMELIACEÆ. — Mr. J. G. BAKER has added to the store of obligations under which horticulturists labour by the production of a complete descriptive list of all the genera and species of Bromeliaceæ. Although popular on the Continent, these plants have not hitherto been fashionable here. The facility with which they, or many of them, may be cultivated, the brilliancy of their colouring, and the persistence of their blooming period, afford substantial grounds for believing that sooner or later these plants will receive the attention they deserve at the hands of our cultivators. The full extent of our indebtedness to Mr. BAKER will then become apparent. Our foreign friends, we may incidentally remark, make much use of these plants for the decoration of their apartments—a purpose for which their structure well fits them. Small plants may be bought in the markets of French towns and on the hawkers' barrows, at a cost which would surprise our nurserymen, though doubtless were a demand to spring up here the prices of the commoner and more easily grown sorts would speedily decline. It will be remembered that this family was the special subject of study by the late Professor MORREN, of Liège, who amassed the most complete collections of living and of dried specimens. Most of these, as well as his magnificent series of water-colour drawings are now at Kew. Mr. BAKER has availed himself of these resources, as well as of the collections of M. ANDRÉ and other travellers, and has consequently produced the most complete account of the order that has yet been produced. The object of the author has been strictly practical, and hence we find the order conveniently divided into readily recognisable tribes, these into genera, and so on. Morphological and anatomical questions which are of special interest in this family are not treated of. The number of genera accepted is thirty-one, while the species exceed 800, more than double the estimate made by Mr. BENTHAM in 1883, and doubtless many more yet remain to be discovered. Tillandsia alone has more than 320 species, but some of the groups considered as distinct genera by some authorities, are relegated to the rank of sub-genera by Mr. BAKER. We are glad to find that the expenses of printing this work have been partly defrayed from the BENTHAM Trust. The expenditure of skilled labour and time on the part of disinterested scientific men is so great that they should not be allowed to suffer in pocket also. The Societies do something to remedy this state of things, but their resources are not equal to the demands made upon them. Mr. BAKER's volume may be had of the publishers, GEORGE BELL & SONS, York Street, Covent Garden.

ITALIAN WINE AND OIL FLASKS.—One of the staple trades of Italy is the production of flasks or bottles for holding wine or oil, and the covering of a large portion of these vessels with straw or Rush cases. For this purpose a kind of cord is made by twisting the culms of Typha angustifolia, which are bound together round the bottle by vertical strips of Typha latifolia. For the finer qualities the material is bleached, and Rye-straw is occasionally used. The work of covering the flasks is performed chiefly by women working in their own homes. They provide the straw, and are paid at the rate of 1 lire (franc) per twenty flasks, and a good worker will cover between forty and sixty ordinary flasks per day.

ROYAL HORTICULTURAL SOCIETY.—At the last meeting of the Council of the Society, Mr. A. H. KENT, A.L.S., of the Royal Exotic Nursery, Chelsea, was unanimously elected an honorary Fellow under Byelaw 15. Our congratulations to Mr. KENT on the bestowal of this well merited compliment.

DR. WARD OF SOUTHAMPTON.—Very familiar in the mouths of Orchidists is the name of this gentleman, whose death, at the age of eighty years, took place on the 18th inst., at Southampton. Long anterior to the days of Orchid millionaires, or indeed ere Orchids had become so plentiful with us as now, Dr. WARD was a well-known southern grower of them, and he will be long remembered as having given his name to the beautiful Dendrobium Wardianum. The deceased had but a small collection as collections now go, but in earlier days it was esteemed a choice one. Another aged and former well-known Orchid grower of the town, Mr. H. J. BUCHAN, of Wilton House, has been so seriously ill as to give his friends grave anxiety. Happily, Mr. BUCHAN is now better. His admirable collection of Orchids, one of the best in the district, was not so long since dispersed, because advanced years prevented that enjoyment of the plants formerly experienced.

FRUIT AND VEGETABLE CULTURE IN SERVIA.—A Foreign Office report on the trade of Servia is not very complimentary to Servian gardeners. A considerable quantity of fruit and vegetables, it is stated, is annually imported into Servia, chiefly from Austria-Hungary. The Servians are unwilling and careless gardeners, and with the exception of their Plums and Vines, in the cultivation of both of which there is room for great improvement, neither fruit nor vegetables of any but the poorest quality are produced. Apples, Pears, and Apricots grow in great abundance throughout the country, and there are unlimited opportunities of profit to be derived from their careful and intelligent cultivation. The fruit is in itself of a good description, but through want of attention to pruning, grafting, and manuring, it is, generally speaking, insipid in flavour and small in size, and seems to know no medium between acidity and mealiness. There can be little doubt that study and cultivation would make both fruit and vegetable raising a most important Servian industry.

WARE AND DISTRICT HORTICULTURAL MUTUAL IMPROVEMENT SOCIETY. — A successful meeting of the above Society was held at Ware on Tuesday evening, the 3rd inst. An interesting paper was read by Mr. E. WALLIS, entitled "Hardy Fruit," and a discussion followed.

LINNEAN SOCIETY.—At the meeting on November 21, Mr. W. CARRUTHERS, F.R.S., President, in the chair. Mr. Edward E. Prin was admitted, and Col. J. H. Bowker was elected a Fellow of the Society. Prof. Duncan exhibited and made remarks on a stem of Hyalonema Sieboldii, dredged between Aden and Bombay, a remarkable position, inasmuch as this glass sponge had not previously been met with in any waters west of the Indian Peninsula. Prof. Stewart criticised the occurrence, and referred to a parasite on the sponge which had been found to be identical with one from the Japanese Seas. Mr. James Groves exhibited and gave some account of a new British Chara, Nitella batrachosperma, which had been collected in the Island of Harris. Mr. Thomas Christy exhibited some bark of Quillaia saponaria from Chili, which has the property of producing a great lather, and is extensively used for washing silk and wool. It is now found to solidify hydro-carbon oils and benzoline, and thereby to

ensure their safe transport on long voyages, a small infusion of citric acid rendering them again liquid. Dr. F. Walker exhibited and made remarks on some plants collected by him in Iceland.

Onion Cultivation in Alexandria.—In a report on the trade of Alexandria for 1888, it is stated that the cultivation of Onions continues to increase, and the trade is likely to grow more and more prosperous, as the Egyptian produce reaches the home markets at least six weeks before that of any other country, and at a time when most markets are ill supplied. There was an increase in 1888 of 75 per cent. over the value of the exports of 1887. The quantity exported in 1885 was valued at £22,253; in 1886, £32,204; in 1887, £42,767; and in 1888, £73,964.

East Anglian Horticultural Club.—A meeting having for its object the formation of a Horticultural Club for East Anglia was held at the "City Arms," Norwich, on Thursday the 21st ult. Taking advantage of the occasion of the Norwich Chrysanthemum Show, which was held the same day, when a large number of gardeners annually visit the city, a circular was issued convening the meeting on that date, and a large and influential gathering was the result, many of the best known gardeners in the county being present. Mr. G. Daniels, Norwich, presided, and among others present were Messrs. Allan, Gunton Park; Baker, Marlingford Hall; Bartlett, Earlham Hall; Bole, Somerlington Hall; Gilbert, Sennare Hall; Macmillan, Oakley Park; Cork, Norwich; Morris, Witton House; New, Mundesley House; Woodhouse, The Plantation, and others. After a friendly discussion it was unanimously agreed that a club, having for its aim the advancement of the science of horticulture in the eastern counties, be formed, and with that view a committee was elected to organise future procedure, Mr. Morris, of Witton, being appointed President for the ensuing year, and Mr. W. R. Cunningham, Honorary Secretary. Members were enrolled freely. Great hopes are being expressed of the outcome of the meeting.

Ragi Flour for English Consumption.—Ragi, the seeds of Eleusine coracana, is a very important food crop in India, being the staple grain of the Mysore province. It is very productive, yielding in the hills from five to six maunds of grain per acre, and in the plains from twelve to fourteen maunds. The grain, if carefully stored in pits, will keep good for years. Prof. Church in his *Food Grains of India*, says that in some places, in ordinary seasons, Ragi may be obtained for about 2*s.* for 130 to 140 lb. It is more esteemed than Maize by the natives of Patna and Behar, but is not in general a popular food, being considered difficult of digestion, productive of flatulence, and astringent. The prospects of a grain of this kind becoming an article of commerce in England would not seem very probable, but it is stated in a report on the Agricultural and Industrial Exhibition, held at Mysore last year, that "Mr. Mukharji, F.L.S., has recently tried the experiment of supplying Ragi Flour for consumption by the poorer classes in England . . . . Mr. Mukharji hopes to sell the flour in London at 1*d.* per lb. Ragi grain can be stored without injury for many years, and it is largely due to this property that periods of scarcity in India are tided over with comparative safety."

Double Begonias.—The growth in popularity in Europe, says our excellent American contemporary, *Garden and Forest*, of the Tuberous Begonia can hardly escape the notice of the most casual observer. The plants are now seen everywhere. They form the most attractive feature in the flower-beds of city squares in Central Europe; they decorate the most pretentious of the ugly gardens of the great hotels, and they may be found growing and flourishing in pots on the window-sills of the smallest cottages in remote Swiss villages. They are gradually driving out the old scarlet Pelargonium from cottage gardens. This sudden leap into popularity is surprising, because it is barely a quarter of a century since the species from which this new race of Begonias sprung were entirely unknown; and in all the history of floriculture, there is not another case of a new race of plants taking at once such a hold upon popular affection. There is danger, however, that the florists will spoil these pretty plants as they have spoiled so many others in their pursuit of novelties, and of new and startling forms and varieties. The double-flowered Begonias, which are just now all the rage, are far less attractive than the single-flowered varieties; and there is danger, too, that even the single flowers may be made too big and ungainly for harmonious combination with the plants which bear them. The charm of a Begonia flower is in looking like a Begonia flower, and not like a small Hollyhock, or a deformed miniature Rose; and yet the best claim the advocates of these double flowers make is that they look like something which they are not—a Rose or a Hollyhock. Still, as long as the public continues to consent to pay three or four times as much for the double-flowered varieties as for those with single flowers, the florists can hardly be blamed for devoting their energies to their production.

Ficus elastica variegata.—Messrs. Ker, of Liverpool, so well known for their fine culture of Crotons and other plants, and so well known also to many for their unvarying kindness and willingness to help, send us a leaf of a variety of the India-rubber plant sent out by them. The leaves are taken from a plant 12 feet high, with over eighty leaves on it, each of very large size, boldly and brilliantly variegated with golden yellow blotches, which are very effective against the rich green of the rest of the leaf.

Bed-bugs and Ants.—In the last number of *Insect Life*, Professor Riley, the indefatigable State Entomolog st of Washington, states that the red ant is a deadly foe to the bed-bug, and that houses overrun with ants enjoy (as they ought to!) an immunity from bugs. As to the latter creatures, we are assured that they can fast for a year; no wonder they make the most of the opportunity when it does come. Benzine applied by means of a spray-producer, or, failing benzine, kerosene, is fatal to any bug with which it comes in contact.

The Fraser and Hall Memorial Fund.—A meeting of the Committee having in hand the organisation of this fund, was held at Messrs. Protheroe & Morris' offices, on the 29th ult., Mr. Harry Veitch presiding. The Hon. Sec., Mr. Fred Horsman, stated that the total amount received and promised up to that date was about £410, and it was unanimously resolved that the list should be closed on December 12, by which time it is desirable that all promised subscriptions should be sent in. The Committee will meet again on the 13th instant, to determine the mode of the disposal of the fund. The following additional subscriptions have been received:—A. B. Stevens, Esq., Tulse Hill, £10 10*s.*; J. H. Porteus Oakes, Esq., £1; T. Gabriel, Esq. £5 5*s.*; J. J. Gabriel, Esq., £5 5*s.*; Mr. W. Riddell, 5*s.*

List of Famous Horticulturists.—From the *Journal of Botany* for October and November we extract the following:—

"Livingstone, John (fl. 1800—1824): 'On Chinese Horticulture,' Trans. Hort. Soc. iii., iv., v.; R. S. C., iv., 61.

"Lobb, Thomas (fl. 1847): Collector for Veitch in India and Malaya. List of his plants (by Planchon), in Journ. Bot. 1847—8, Journ. Bot., 1847, 145; Cott. Gard., xiii., 274; *Lobbia*, Planch.

"Lobb, William (1809—1863): b. East Cornwall, 1809; d. San Francisco, 1863; bur. Lone Mt. Cemetery. Brother of preceding. Collector for Veitch in South America, 1840—8; and in California, 1849—1857. Veitch, 'Manual of the Coniferæ,' p. 258. *Lobbia* Planch. [Introduced the Wellingtonia (Sequoia gigantea).]

"Lobel, Matthias de (1538—1616): b. Lille, Flanders, 1538; d. Highgate, 1616. Botanographer to James I. Pupil of Rondeletius at Montpelier 'Adversaria Nova' [with Peter Pena], London, 1570—1. 'Observations,' Antwerp, 1576. 'Illustrationes,' ed. W. How, 1655. Superintendent of Lord Zouch's garden, Hackney. Introduced *Ephedra distachya*, 1570; *Salvia grandiflora*, 1616. Pult. i., 96; Rees; Pritz., 194; Jacks., 574; Fl. Midd., 369. Engr. portr. fol. vign. by Francis Dellarame, 1615. Copy at Kew. *Lobelia*, L.

"Lockhart, Daird (d. 1846): d. Trinidad, 1846. Kew gardener. Assistant to Christian Smith on Congo Expedition, 1816: sole survivor of the staff, Lasègue, 444. Plants from Bahia in Hb. Mus. Brit. Journ. Bot., 1847, 40; R. S. C., iv., 68; Gard. Chron., 1885, xxiv., p. 236. *Lockhartia*, Hook.

"Lockhead, William (d. 1815): d. St. Vincent Bot. Garden, 22nd March, 1815; bur. in the garden. Succeeded Anderson as Curator, July, 1811. Drawings in Bot. Dept., Brit. Mus., R. S. C., iv., 67; Guilding, 'Account of St. Vincent Bot. Gard.,' 1825.

"Loddiges, Conrad (d. 1820): b. Germany; d. Hackney, 1820. Nurseryman, Hackney, from 1771? Introduced plants from Michaux, Bartram: Loudon 'Arboretum,' 84. 'Botanical Cabinet,' 1817. Pritz. 194; Jacks., 574; Bot. Mag., t. 965. *Loddigesia* Sims.

"Loddiges, George (1784—1846): b. Hackney March 12, 1784; d. Hackney, June 5, 1846. F.L.S. 1821. Son of preceding. 'Botanical Cabinet,' 1817—1834, with many of the plates drawn by himself. Proc. Linn. Soc., i., 334.

"Loudon, George (d. 1713). Apprentice to Rose. Gardener to Bishop Compton, William and Mary, and Anne. In partnership with Henry Wise at Brompton Park Nursery, 1694, 1701. Mus. Pet. 45; Johnson, 123; Felton, 35.

"Loudon, Jane *née* Webb: b. Birmingham, 1800 or 1802; d. Bayswater, 13th July, 1858; m. J. C. Loudon, 1830. 'Botany for Ladies,' 1842. 'British Wild Flowers,' 1845. Pritz. 194; Jacks., 575; Cott. Gard., xx., 248, 255.

"Loudon, John Claudius (1783—1843): b. Cambuslang, Lanark, 8th April, 1783; d. Bayswater 14th Dec., 1843. F.L.S., 1806. Travelled in Northern Europe, 1813—15; in Italy, 1819. Edited 'Gardeners' Magazine' from 1826; Mag. Nat. Hist., from 1828; 'Encyclop. of Plants,' 1829; 'Hortus Lignosus Londinensis,' 1838; 'Arboretum Britannicum,' 1838; 'Hortus Britannicus,' 1850. Pritz. 196; Jacks., 575; Lasègue, 537; Proc. Linn. Soc. i., 204; Gard. Chron., 1843, 7; 1845, 754; Cott. Gard., v., 143; xx., 255; Athenæum, 1843, 1112, Oil portr. by Linnell at Linn. Soc. Portr. at Kew. *Loudonia*, Lindl.

McIntosh, Charles (1794—1864): b. Abercaimy, Perthsh., Aug., 1794; d. Murray-field, 9th Jan., 1864, A. L. S., 1854. Gardener at Claremont and Dalkeith. 'Flora and Pomona,' 1829; 'Practical Gardener.' Proc. Linn. Soc. 1863—64, xlii.

"McIvor, William Graham (d. 1876): b. Dollar d. Ootacamund, India, 8th June, 1876. Kew Gardener. Superintendent, Bot. Gard., Ootacamund, 1848. 'Hepaticæ Britannicæ' (specimens), 1847. Introduced Cinchona into India. 'Notes on the . . . Cultivation of . . . Cinchonas,' 1863. Pritz. 200; Jacks., 576; R. S. C., iv., 161; Eng. Bot. 2948; Gard. Chron., 1876, ii., 150; Journ. Bot., 1876, 224; Trans. Bot. Soc. Edinb., xiii., 11.

"Mackay, James Townsend (1775? 1862): b. Kircaldy, Fife, 1775?; d. Dublin, 25th Feb. 1862. A.L.S. 1806. LL.D., Dublin, 1850. M.R.I.A. Founder and Curator, Bot. Gard., Trin. Coll., Dublin. 'Fl. Hibernica,' 1836. Discovered *Arenaria ciliata*, &c. Contributed largely to Eng. Bot. Plants at Dublin. Pritz., 200; Jacks., 576; Mag. Bot. Hist., 1831, 167; Journ. Hort., ii., 1862, 457; Proc. Linn. Soc., 1862, cv.; Turner, Fuci, i., 116; R. S. C., iv., 161. *Mackaia*, Gray = *Fucus*, part. *Mackaya*, Arn. = *Erythropalum*. *Mackaya*, Harv, *Erica Mackaiana*.

GARDENS ABOUT NEWBURY.

THE following notes are designed to draw attention to a few places of horticultural interest in the district above referred to. We may very appropriately commence with Benham Park, or Benham Place, the name it was formerly known by. The house was built in 1775 by William, sixth Lord Craven, who, in 1767, married Elizabeth, daughter of Augustus, fourth Earl of Berkeley, who married, after his decease, Christian Frederick, Marcgraf of Brandenburgh Anspach and Bayreuth, nephew of Frederick the Great, and of Queen Caroline, the wife of George II., King of England. When he surrendered his German dominions to the King of Prussia, he came to England and purchased Benham Place, which he occupied as a country residence until his death, in 1806. He was buried at Speen church. The Markgrafin resided at Benham Place after the death of her husband till the year 1811, when it was let to Mr. Bacon. On her death it was left to her youngest son, the Hon. Keppell Richard Craven, from whom it passed into the possession of the present Sir R. Sutton's father, who built a new mansion on the site of the old one. The mansion is at present let to Mrs. Myers, of Swanmore Park, Bishop's Waltham. The house is a stately building, standing in a park of considerable extent, along the lower part of which is a large piece of water fed by the River Kennet.

The pleasure-grounds, which are of considerable extent, contain some fine young specimens of Sequoia gigantea, Piceas, &c., which are making good growth.

The flower garden is on the north side of the house, on the steep slope of a hill, and at the time of my visit was gay with the usual occupants.

The conservatory adjoins the mansion, and contains in the centre bed some fine Palms, and pillars covered with flowering creepers—Plumbago capensis, full of flower; Hoya carnosa, Trachelospermums, &c. The back wall is draped with Ficus repens, and the stage was gay with Liliums, Fuchsias, Pelargoniums, Begonias, &c., intermixed with Coleus, Ferns, &c. Some fine pieces of Cypripedium of varieties were hanging in baskets, and which each year make a good show.

The kitchen garden, in three divisions, is about five minutes' walk from the house, and is enclosed with excellent walls, which are well covered with fruit trees. In the first we find the stove and some Fern pits; also an early vinery, and a house of Muscats, the Vines in which were carrying a good crop of useful-sized bunches. The stoves contain good specimens of Alocasias, especially noticeable being A. metallica, A. Thibautiana, and macrorhiza var.; a fine piece of Kentia Fosteriana; also a large Stevensonia, with very fine foliage; large Marantas, Pandanus Veitchii, some good examples of Anthurium Scherzerianum and A. Andreanum; six large pieces of Cœlogyne cristata, with numerous small decorative plants in Crotons and Dracænas; some fine Allamandas and Stephanotis being in fine flower on the roof.

Amongst the Ferns were many that have gained honours at the local exhibitions in years notably Nephrolepis davalloides, Davallia Mooreana, D. bullata, Adiantum Williamsi, A. Farleyense, Gymnogrammas, and many others. In an adjoining pit was a quantity of Eucharis and Pancratiums, all being well flowered.

Passing to the next division, is a range of two Peach-houses, which had just finished a fine crop of fruit; a vinery containing good fruit of Foster's Seedling and Black Hamburgh Grapes. The next is a Fig-house, the trees in which have for many years yielded good crops of fruit. We now pass to a house divided in two—one division having a good crop of Cucumbers, the other division being planted with late Melons, which were just swelling a large crop of fruit. Touching Melons, it may be mentioned that the late Mr. Charles Howe, who was gardener here, made Benham famous by the many fine varieties which he raised. The next structure is in the spring, converted into a Strawberry-house, but at the time of our call was filled with a quantity of Poinsettias, and a good batch of Calanthes of sorts on one side, the other side being filled with fine specimens of Clerodendrons, Bougainvilleas, Allamandas, &c. The next to enter is a span vinery running from east to west—in three divisions—the first being planted with Alicante, the second with Gros Colmar and West's St. Peters, and the third with Lady Downes' Seedling, and both in good bearing, and the bunches finely coloured. The lower garden is then passed through, the walls of which are covered with Apricots, Peaches, and Nectarines, and protected with Parham's Patent Protector, which generally ensures good crops of fruit.

The frame ground—our next halting place—is quite worthy of mention. In the first house we noted a good crop of Tomatos, the next being prepared for winter Cucumbers; the long heated pits on either side being used, one as a Melon-pit, and the other for Pine-apples, of which about 200 are grown. In front of this is a long pit planted with double Violets for winter use, also pits and frames with quantities of double and single-flowered Primulas, Cinerarias, Cyclamens, and Freesias, of which latter useful decorative subject some hundreds are grown in pots. There were also to be found the Chrysanthemum, mostly grown as bushes to give quantities of flowers rather than for exhibition purposes.

The kitchen garden is kept in good order, the walks free of weeds. Very heavy crops of Plums, especially Pond's Seedling, Jefferson's and Coe's Golden Drop were noted. Pears were a good crop and very fine. The place reflects much credit on Mr. J. Howard, the new gardener.

SANDLEFORD PRIORY

is one of the many fine old places around Newbury. The house stands in the midst of a beautifully undulating park, and surrounded by many old trees of large dimensions, the most notable being Cedars, Oaks, Elms, Limes, and Ash. The place is of peculiar interest to horticulturists, and especially to lovers of Rhododendrons—as Lady Emily Cathcart, and other sterling varieties, that are now to be found in every collection, first saw the light here. The Rhododendron garden is worth going a long way to see when in full beauty. Greater numbers may be found in other places, but this is *the* place for good quality, and the planting arrangements show that there is a masterhand in Mr. Brown, the gardener. He has been here as gardener for more than forty years; for although he is now over eighty years of age, is hale and hearty, and full of enthusiasm. The flower-garden is planted in an old-fashioned style, and it is always done well. The kitchen garden is about 3 acres in extent, and is well stocked.

GOLDWELL PARK.

A pretty little place, the residence of Colonel Hulse, an enthusiastic Orchidist, who is continually having importations of these plants from Burmah. The gardener, Mr. McRoby, is evidently quite at home in the cultivation of the Colonel's favourite plants, for we found those both established and newly imported looking the picture of health.

The flower and kitchen gardens are also well kept. Tomatos planted against a south wall were noted as being a remarkable crop; several varieties are grown, but Sutton's Golden Queen is considered to be the best flavoured and the best cropper.

LITTLE PARK, CROOKHAM.

This is the residence of Mrs. Shooter, and is noteworthy by reason of the many fine Conifers which it contains. A perfect specimen of Cupressus Lawsoniana, some 30 feet in height, stood out prominently from the rest; Sequoia gigantea was beautifully clothed with foliage and branches, and was about 40 feet high. A grand example of Ailantus glandulosa was likewise noted. The place was laid out by Mr. J. Nash, the gardener.

CROOKHAM HOUSE,

the residence of A. R. Tull, Esq., a beautifully situated spot, is undergoing great alterations in the way of planting, under the able direction of Mr. Joseph Marsh, the gardener. There is fine tree growth about the place.

Scarlet, Spanish, and English Oaks were noted as thriving. Pines, Beeches, Acers, Plains, Limes, &c., are grown in quantity and fine condition.

BEENHAM COURT,

the property of H. Waller, Esq., is a new place that is fast coming to the front. Large additions have recently been made to the mansion and the gardens. Although not yet in a finished state, it will ere long be ranked amongst the best places of the neighbourhood. The garden is under the management of Mr. Smith.

GREENHAM LODGE,

the residence of H. L. Baxendale, Esq. The kitchen gardens have an area 3 acres in extent They have been well made by Mr. Dolby, the gardener. The lawns, flower gardens, and pleasure ground have yet to be finished. A fine conservatory has been erected, and is well filled with Ferns, Palms, &c., all doing well.

WASING PLACE (W. G. MOUNT, Esq., M.P.).

This is an estate of about 800 acres. The park is about 200 acres in extent. Oaks and Scotch Fir do remarkably well here; it is said that the finest Scotch Firs in the county of Berks are to be found here. Some fine old Cedars attracted attention.

The conservatory contains a very fine example of Datura suaveolens, bearing between 300 and 400 of its beautifully-scented flowers. The plant in question is over 100 years old, and when in flower presents a truly noble appearance. It is grown on the cool treatment principle. Two beautiful plants of Magnolia grandiflora were growing with great vigour. Mr. J. Kitt is evidently a good gardener.

MR. MILLER'S NURSERY, SPEENHAMLAND.

This has recently been enlarged, and now covers 26 well-stocked acres. Forest trees are grown in quantity, and Conifers receive much attention. Good specimens can be seen from the road on either side. We may especially mention one straight walk some 150 yards in length, with broad belts on either side, of very choice Conifers.

On a south wall, 95 yards long, Mr. Miller has recently erected a range of four lean-to houses. These are all well filled with flowers, and furnishing plants in variety. Numerous other structures—as pits, frames, &c.—are also well occupied with bedding plants, Violets, &c., to meet the requirements of the neighbourhood.

Rhododendrons are grown in quantity in loam, peat not being obtainable here.

One of the best Apples in cultivation was raised here some years ago; it is called Miller's Seedling. It produces fine large fruits, is a constant bearer, and a great favourite around Newbury. Plenty of other good subjects are to be seen in this nursery, but having only a limited time at our disposal, we were unable to give the time for further inspection of a really interesting establishment. *B.*

PROPAGATION OF COMBRETUM PURPUREUM AND IPOMŒA HORSFALLIÆ.

THESE two plants generally speaking have the reputation of being difficult subjects to propagate from cuttings, and some on account of their inability to grow them in this way have gone the length of making a statement to the effect that it is next to an impossibility to propagate them in the above manner. Speaking from my own experience, I must say that I have found them not nearly so difficult as many would have us suppose. Many gardeners, who have had considerable experience in the profession, hand down to the younger generation of gardeners the impossibilty of rooting these and other plants from cuttings, which, too often, has the effect of pre-

venting such from making an attempt in solving the problem of the why and the wherefore.

When I first came to these gardens, some four years ago, Mr. Lynch pointed out to me a plant which he had propagated from a cutting of the first-mentioned plant, and which is now a vigorous specimen. During the present summer, I put three cuttings into a sandy compost, plunging the pots in Cocoa-nut fibre in a case where a bottom-heat was maintained from 80° to 85°, and in a month's time they began to emit thickish roots about the size of common whipcord, and at the end of another month one of them produced a quantity of fibrous roots, and commenced to make a growth. Thinking these would prove of interest, I washed the soil from two rooted cuttings, and photographed them (fig. 91). To those who are desirous of propagating this plant from cuttings, I would recommend that cuttings similar to the one seen in the right hand of the illustration (fig. 91) be taken off early in the spring otherwise they are apt to lie dormant throughout the summer; but by taking them off during the spring, they are more likely to commence to grow before winter begins. A good deal of correspondence has been going on lately in the horticultural journals concerning the difficulty of rooting these plants from cuttings, and one writer says that he has "been connected with the trade for nearly forty years, and has had to increase the stock of these plants; but he had never seen a plant of either which had been obtained from a cutting, although he had himself tried times without number, but had never been able to root them." I would advise these writers and others who have not hitherto met with success, to try, try, try again.



Fig. 91.—Propagation of Ipomœa and of Combretum.

With regard to Ipomœa Horsfalliæ, shown on the left of fig. 91, this is far from being difficult to propagate from cuttings, for from a young plant in a small 48-pot we have propagated, since August, four out of six cuttings. I am certain that if the right sort of cuttings had been selected, it would have been possible to make every one grow. Our plants were raised from cuttings taken from a young growing plant placed in heat after heading it back. The young shoots so taken do not all root with certainty, and are, therefore, not the kind or right sort of cuttings to depend upon; but the plant soon commences to grow again, and if these young shoots are cut off when they have reached 4 or 5 inches or more in length, together with an older leaf attached to the cutting, these are of the right sort, and on which dependence may be placed. A guarantee may almost be given that every cutting so treated (if placed in a case with a bottom-heat of from 80° to 85°, and syringed once or twice a day, shading in bright weather) will root in the course of a month or six weeks. *W. Harrow, Botanic Garden, Cambridge.*

Cultural Memoranda.

HOTEIA JAPONICA.

Whether the plants of this valuable spring-flowering subject be imported or home-grown, no time should be lost in potting-up the plants—48, 32, and 24-sized pots—using light sandy mould. The plants should then be placed in a cool-house, after giving water to settle the soil. Afterwards introduce some of them into heat at stated intervals. The plant being moisture-loving when in full growth, copious supplies of water, and sometimes of weak liquid manure, should be afforded them.

Bulbs.

If not already done, the stock of bulbs which were potted early in September should have their covering of leaves, &c., carefully removed, and all those plants which have made 2 inches in length of growth be stood in a cool frame or pit, and shaded from light for a few days. After washing the pots, place them on a shelf near the light, with an inverted flower-pot placed over each spike for a few days. The Narcissus and Roman Hyacinths will ere this have been so treated, and these, as well as those following, will be benefited by occasional applications of tepid liquid manure being given at the roots.

Lily of the Valley.

As soon as Lily crowns and clumps come to hand, they should be potted up, the clumps into 6-inch pots, and the crowns placed close together in narrow shallow boxes; the former for standing about in rooms and conservatories, and the latter for cutting; light sandy soil should be used in potting, and the pots and boxes placed in a cool pit and covered with a layer of leaf mould a few inches thick, removing a few of each, being put into the forcing-house in the course of a fortnight after potting, and at short intervals subsequently to maintain a supply of flowers. If the pots and boxes be covered with leaf-mould in the forcing house as in the cold pit, so as to prevent the hot and dry air coming in contact with the crowns before they have sent up their flower spikes, good results will be obtained from nearly every one of the crowns. When the flower spikes show, gradually inure the plants to light, and after a few days place them near to the glass to prevent drawing. *H. W. W.*

Notices of Books.

Idylls of the Field. By F. A. Knight. (Elliot Stock.)

Readers who admire Mr. Francis Knight's book, *By Leafy Ways*, will be glad to hear that this author has recently published another volume, which he entitles *Idylls of the Field*, and which, like its predecessor, consists of a series of short articles on natural history subjects which originally appeared in the *Daily News*. In its present form the book is a pleasant one to take up for half an hour, as the author's style is elegant and picturesque, and his presentment of facts accurate. The pretty illustrations deserve a word of praise, as they add so much to the interest of the book.

Flower Land; *an Introduction to Botany.* By Robert Fisher, M.A. Bemrose & Sons.

A very simple introduction to the knowledge of elementary botany, accurate as far as it goes, and one, therefore, which we can safely recommend to the reader as not entailing, as so many so-called popular books do, a great deal of subsequent unlearning.

Home Correspondence.

Camellia buds dropping.—I notice in your last issue that "A Subscriber," enquires the reason why the Camellia drops, &c., a misfortune that often happens in town gardens. I do not think that it is always to be attributed to over watering; or, on the other hand, to dryness of the soil, but that fogs and sudden changes in the weather are the chief causes of bud dropping in these and other plants; and from observations made during last month, I have discovered that during heavy fogs our plants were covered with moisture, the buds dropping shortly afterwards no matter how carefully the plants are attended to. I will describe what we do to prevent this loss of blooms: I have noticed that some plants on the back wall of an early Peach house and against a flue, never lose their buds; some are in bloom now, and others in a forward state in the season of fogs, that is all through the autumn. These plants are fully exposed to the air until the house is started. We now give our plants as much air as possible, thus imitating the treatment of those in the Peach house, and moreover get them into growth early, and get the wood well ripened by August. I would call especial attention to the maturing of the shoots, as I noticed that plants suffer in proportion to the amount of protection, dropping fewer buds when but little protected. We do not apply any fire heat till the fogs and wet weather arrive, and then it is employed day and night, a fair amount of air being admitted by the upper ventilators, and the house is kept as dry as possible during this period. By so treating the plants, scarcely any buds drop; and I may say that the stock of Camellias is a large one. At Syon, we get a great deal of fog, the garden being only a few feet above Thames water level, and subject to the fog from London when the wind blows from town. I have noticed that fog affects many other plants in much the same manner; Calanthes are very apt to lose their flowers, and a little more warmth does them also no harm, but in their case the ventilation cannot be so well done, as hardier plants are concerned. *G. Wythes, Syon House, Brentford.*

—— From long experience in the growing and management of Camellias, I am of opinion that bud-dropping arises from various causes, but the two chief ones, and the most general, are checks through dryness at the roots, and excitement brought on by artificial heat, accompanied by an arid atmosphere, of which conditions Camellias are very impatient, and when they prevail the plants are sure to go wrong. If they happen to be in a

house where fire-heat has to be applied to suit other subjects, the Camellias should, if possible without injury to the forenamed, be lightly syringed or damped overhead, which will be found of immense benefit to them by counteracting the effects referred to; and it is necessary to be very particular in the matter of watering, as when the plants are planted out or in large tubs or pots, the appearance of the soil is deceptive, for though the surface may appear all right as regards moisture, the bulk of it below is often dust-dry, and when it is so, down comes the buds. To prevent this evil, a close examination should be made, and if found in the condition mentioned the way to remedy it in the case of those planted out, is to surround each plant, at a good distance from the stem, with a ridge of soil, and then flood or fill the space up with water, or weak liquid-manure if a stimulant is required, and after an interval of a day or so repeat the dose, so as to make sure of a good soaking. The way to deal with those in pots or tubs is similar, as water frequently gets away around the sides, and to be certain that the ball gets moistened throughout, it is a good plan to pierce it here and there with a sharp-pointed iron-rod, as it frequently happens that the soil becomes so hard in the centre as to be almost impenetrable. Bud-dropping may, and does sometimes arise from over-watering, as that causes a sour bad state at the roots, and makes them decay or become inactive, and this can only be remedied quickly by the removal of a good deal of the inert soil, and replacing it with some that is fresh, sweet, and good. The best to use is tough fibry yellow loam, with about a third of peat in the same fibry state, with a sprinkling of silver-sand to keep the whole open. This mixed, should be pressed down firmly, and then watered to settle the whole, the next thing being to afford a nice moist heat to set the plants growing. This they will do freely if syringed daily with tepid water, and the foliage is clean and free from deposit; but if not, it must be made so, as that is very important. Many who are not well acquainted with the management of Camellias, attempt to force them, and then wonder at the buds falling, which, as remarked above, they are almost sure to do, and those who would have early blooms must start their plants into growth betimes, and give them genial warmth till the young shoots are well hardened, and then the flowers will come on of themselves, and be full, fat and perfect. Modern houses, though good for other subjects, are not so well adapted for Camellias, which like less light than such affords, and more shade and atmospheric moisture, which seem essential to the welfare of these estimable plants. Most of those of us who can look back will remember how fine they used to be in old Orangeries and buildings of that kind, in which they might be seen with splendid foliage, dark, rich, and shining with rudeness of health, although perhaps not overladen with bloom, as the wood sometimes lacked ripeness and shortness of growth. I may just add that I have found Clay's Fertiliser a first rate stimulant for Camellias, and once a year we give our plants a sprinkling over the soil before watering, and the beneficial effect is soon apparent in improved colour and looks. *J. Sheppard.* [See also a communication on p. 651, Ed.].

MR. FISH ON FRUIT GROWING.—This old correspondent of the *Gardeners' Chronicle*, in the matter of fruit growing, has made a complete right-about-face on nearly all the points he once regarded as the very Alpha and Omega of the business, and his conversion is due, as he himself states, to "J. D.'s" article on Mr. Barlow's Fruit Tree Growing at the Little Orme. Now, he will hardly tickle the soil with a hoe before planting his trees, and he will select the hardest and most unpromising soil, if it have but a few crumbs of tilth on the surface, provided it be on a hillside or river bottom. Drainage is a superstition and useless, besides being an additional expense in planting fruit trees, and therefore a hindrance as to fruit growing; shelter he flings overboard with the rest, although most reasonable beings know that the blossoms of the trees or bushes, and the fruit at all stages of its growth, are frequently devastated by winds, either frosty or mild. Manure has come to stink metaphorically in our old friend's nostrils, and he will have none of it, at least not for twelve or more years after planting, when, supposing that the trees are still carrying out a miserable existence there may be some need of its application; physicing them, therefore, when they are at the last gasp. Can we call this farming fruit with an eye to profit? If it be such, what ignoramuses we have all been these many years, with our nostrums about shelter and good soil of certainly 2 feet in depth, to enable a tree to exist in dry weather, and withstand the force of the wind; drainage, manure, &c. When our prophets speak with so uncertain a voice concerning matters of an important nature, what will the crowd think of the uninterrupted advocacy of fruit growing in these islands in opposition to the importation of fruit from beyond the seas? *X. Y. Z.*

FENCING POSTS AFFECTED WITH FUNGI.—In answer to an enquiry on this subject, I recommend the following procedures: remove the sand or herbage from around the posts and scrape the fungi from them. Either creosote or boiling tar applied to the part will both kill the fungi and to some extent preserve the decaying wood. Where fencing posts are only partially creosoted, or charred and tarred, the application should, in all cases, extend upwards 1 foot from the ground, as at the ground level timber suffers more from rot and fungi that at any other point either above or below ground level. For estate purposes the importance of creosoting is being felt more and more every year, for it not only prevents the growth of any fungi, but completely hinders the absorption of moisture, and thus, at a small cost, we have a fence that will not decay. Creosoting, to be effectual, must however, be done conscientiously, and this, unfortunately, is not always the case. *A. D. W.*

PLANTING BORDERS OF PERENNIALS.—Will some readers of the *Gardeners' Chronicle* give me their experience in this matter, as I am desirous of obtaining some useful data, in view of planting. Personally, I would plant things in colonies—say, of twenty to fifty plants in a group, the number depending on the size the plants would grow to. As a rule, the smaller growing subjects—and this would include all bulbs that do not grow more than 1 foot in height—should be planted in large colonies, and every other plant which grows above that height, in smaller groups; and the more spreading and dense the habit of the plant, the fewer examples of it would be put together. The everlasting dotting system, or regular mixture of plants, is an absurd one for anyone to follow, and leads always to monotony in effect, and being destitute of any interest, it becomes in a season or two unbearable. An instance or two will suffice to show my meaning. If you possess twenty plants of Tritomas (Kniphofias), as many of Phlox decussata, or of the fruticosa species or Veronicas, or Rudbeckias, or Trilliums, or Pyrethrum roseum, it would be better to have one, or at the most, two colonies of each of these, than to mix them up by planting them singly or in threes over all the area of the border. Then as to the number of lines of groups to be contained in a border, would it be productive of the best results to plant it with only one row of groups? it would be a very wide border that would require two lines. The groups being mostly circular, oval, or diamond-shaped, and standing a distance of 3 feet from each other, would afford angular spaces between them and the edge of the border, which might be utilised for quite small-growing plants—Hepaticas, Thymes, Primulas, Auriculas, and dwarf plants generally; also in groups, the indiscriminate medley being avoided in these as well as the big groups. And the spaces at the back of the border, if it be not possessed of two fronts, might be filled with tall-growing subjects, or with Sweet Peas, ornamental Gourds on stout stakes, pillar Roses, Clematis, standards of Rhododendrons, &c. In a border, say, of 200 yards long, the same species of plant would not occur more than twice at the utmost; and in the case of the plants of lesser interest, or which have evanescent flowers, or which have a shabby look when out of bloom, once only would be better. *A. Y. E.*

WINTER-FLOWERING BEGONIAS.—What may be called a worthy trio of these beautiful decorative subjects may now be seen at Messrs. Veitch & Sons' nursery, Chelsea. They are the result of crosses from B. socotrana, and are named John Heal, Winter Gem, and Adonis, all three being distinct. The structure in which they are growing presents the appearance of a housefull of zonal Pelargoniums when in flower. If fogs do not destroy the flowers, these plants will look gay for another month or six weeks. *B.*

GROS COLMAR GRAPE.—At some local exhibitions this autumn, there have been exhibited as this Grape, bunches so deeply coloured, and of such fine finish as well as so densely covered with bloom as to lead to the belief that the variety was the Gros Maroc, although the exhibitors have stoutly held to the contrary. Very possibly the latter Grape is sometimes put into commerce for the former. It seems all the more probable, because complaints as to difficulty in colouring Gros Colmar seems to be general. That defect is so common with the variety, whilst it has little to recommend it beyond the size of the berries, that it is to be wondered at that Gros Maroc, which also carries fine berries, and is one of the best colouring and finishing Grapes we have, is not widely grown for market. Possibly, it is not yet so well known as it deserves, but where colour is difficult to lay on, and not all are successful in that direction, Gros Maroc proves to be a most helpful variety. *D.*

SPARROWS.—These sparrows of yours are making a great commotion in our country. They have defenders and defamers, just as they happen to serve or harm. In the great city of Philadelphia it was next to impossible to have city trees, caterpillars eat the leaves, and borers attacked the stems. The sparrows cleared them wholly away. But a nocturnal moth, with a caterpiller desperately hairy, got an entrance, and the sparrows got no show. The trees now again suffer badly in spite of the sparrow, and then he takes his share of fruit and seeds—much more than his share, his enemies say—and so the fight about him is going on. *Thomas Meehan, Germantown Nurseries, Philadelphia, U.S.A.*

IRIS STYLOSA VAR. GRANDIFLORA.—I have just had in blossom the most beautiful winter flower I have ever seen in the open ground. It is a large deep purple form of I. stylosa. It has been proposed by the authorities at Kew to distinguish it as var. grandiflora. Five degrees of frost have stopped it blooming for the present. *H. E., Ryde, Isle of Wight.*

EARLY-FLOWERING CHRYSANTHEMUMS: THE EARLIEST DISCOVERIES.—With the greatest interest I have read in your issue of November 9 the above titled paper by Mr. H. Piercy. I would say nothing against that paper, but I only wish to say that the title, "The Earliest Discoveries," is not quite accurate. It may be so for England, not for the Continent. A Dutch nurseryman, Mr. R. C. Affourtit, at present one of the editors of the *Sempervirens*, got a dozen distinct early-flowering Chrysanthemums in 1850 from Auguste Miellez, florist, at Esquezmes, near Lille. Some of them flowered in the beginning of August, followed by the others in September and October. The Dutch nurserymen are indebted for many new plants to the intelligence of the before-mentioned florist, Mr. R. C. Affourtit. *J. K. Budde, Edinburgh.*

GROWING LEAVES IN FERTILISING MOSS.—As some of your readers will have noticed an exhibit of plants growing in fertilising moss, and for which we were awarded the Bronze Medal at the Royal Aquarium show last month, a few notes respecting leaf-culture may be of interest. When there is sap left in a cutting, a callus will generally form, and other circumstances being favourable, the absorption of nutriment takes place even before rootlets are pushed out from the callus. As a proof of this power to absorb, it is noticeable that cuttings—Chrysanthemum cuttings especially—will often form an inch or two of growth, and make two or three leaves before any roots can be discerned. In a cutting of any plant that has this power, it is little matter whether the stem or the leaf-stalk be taken as cutting, and in the case of the leaf-stalk, whether taken with or without its dormant bud, and it becomes simply a question of surroundings. The advantage in taking the leaf-stalk with a dormant bud is, that a new plant is obtained more quickly than in any other way. It is only a question, then, of, as in the case of the Chrysanthemum exhibited by Mr. Briscoe Ironside, suckers forming upon the roots; and it will be understood that suckers will form much more quickly than in the case of Chrysanthemums that have active growing parts above the soil, when we remember that the roots on the leaf-stalk-grown plant have all their energies concentrated on the formation of suckers, and have no other diversion for their energies. We have now in our little propagating-house twenty-seven callused leaves that are emitting roots, all taken from one shoot, and we shall soon have as many plants to propagate from, instead of waiting for the usual crop of suckers as cuttings. In the routine of leaf culture we find that very small pots, gentle bottom-heat, a close, moist atmosphere, and the substance known as fertilising moss are important aids. Growers may no doubt succeed as easily if they use sand as if they use the moss, but

they will have to be constantly on the watch for excess or loss of moisture. We fill the little pots—thumbs or thimble are best—as full as we can press them with a compost of finely sifted new loam and fertilising moss, and take a sieveful at a time so filled and plunge them overhead in water at about 65°, letting them stand for a few minutes in the water, and then take out and drain for a few minutes. Then we prick in the leaves, three to each pot at the sides, or one only in the middle, and no more watering is required till the little plants are ready to pot off. A very slight moistening of the leaves may be given occasionally if the surroundings are dry, but no wetting of the moss will be necessary. At present we are carrying a batch of Fuchsia leaves, taken about a month ago, and none of which were lost. Bouvardia, Petunia, Coleus, and Chrysanthemum are easy to increase by means of leaves. *R. Beale & Co.*

CHRYSANTHEMUMS AT BIDDICK HALL.—Of the picturesque gardens, the seat of H. T. Morton, Esq., Durham, a correspondent writes us as follows: Few gardeners in the north of England can present a finer group of Chrysanthemums than that which Mr. Archibald Scott has in his conservatory this year; although somewhat pinched for room, he seems to have a happy method of showing off his blooms to the very best advantage, in a group of between three and four hundred plants containing upwards of 100 varieties. Some of the Japanese varieties are remarkably fine, and present to the looker-on, blooms of great beauty both in formation and development; this is especially so in thevarieties known as Fair Maid of Guernsey, Val d'Andorre, Comte de Germiny, M. Astorg, M. Burnet, Elaine, Madame C. Audiguier, Criterion, Jeanne Delaux, Margot, M. de Levine, and L'Adorable. Mr. Scott's display of incurved varieties is equally fine. For instance, I noticed Queen of England, Jeanne d'Arc, and Mr. Bunn to have blooms of exquisite beauty and size; while Bronze Jardin des Plantes, Lady Slade, and Empress of India were also of a decidedly superior quality. The Golden Queen of England, Mrs. Sharp, and John Salter varieties are also complete specimens of their kind, and add much to the splendour and beauty of the group.

HAMPTON COURT "WILDERNESS," IN 1735.—The recently published Calender of Treasury Papers contains one or two interesting notes about gardens, notably the Surveyor of the Gardens' report upon Messrs. Wise's and Carpenter's charge of planting in the Lower Wilderness at Hampton Court. This report (dated April 26, 1725) represents that at the very time this estimate was offered to the Lords of the Treasury, the work was actually done without his knowledge, much less without his giving any direction for it. "But as the charge of making this new plantation, the destruction of the old one being occasioned by the overflowing of the Thames, and not any neglect of the contractors," their lordships were desired to determine whether it ought to fall upon them or no. In the Treasury Minute Book, June 4, 1725, we read:—"Sir John Vanbrugh's report for a sum demanded by Wise and Carpenter for work done in the plantacons [*sic*] at Hampton Court without the previous direction or agreement of my lords is read, and Sir John is to writ to them again thereupon, inasmuch as he has not by this report given his opinion to my lords, as, by their letter, he was desired to do." As is usually the case, these Calenders of Treasury Papers give only a bare outline of petitions and the like, no attempt being made apparently to indicate the results of such applications. In the example which we have quoted, the report is emphatically a one-horse affair. A small amount of examination would probably have enabled the Record Office officials to complete a very interesting episode in the history of gardening a century and a half ago. *W. R.*

PEACH FUNGUS.—The letter from Mr. Sheppard, which appeared in the *Gardeners' Chronicle* of the 2nd inst., p. 504, respecting Peach trees attacked with fungus, is of very great interest to me, as I have two Peach-houses which were infested with a fungus for these four years past, but I am not quite sure that it is the same species of fungus. Not having seen Mr. Sheppard's inquiry, or having the back numbers of the *Gardeners' Chronicle*, I should like to ask him if the fruits are attacked by the fungus? In the case of our trees both fruit and leaves are destroyed, and the young shoots as well; and although it cannot be observed by the naked eye at the time the fruits are of a small size, I find that by the aid of a magnifier it is visible. It puts one in mind of a mark made by the puncture of a pin. It attacks my fruit as follows:—As soon as the fruit is the size of a Pea, the fungus makes its appearance in the form of little black spots, which do not spread much until the fruit have stoned, when it spreads fast, and in some instances over three parts of the fruit, penetrating to the stone, and causing them to be useless. The leaves are likewise attacked in a very young state, and are completely perforated, when in course of time the diseased part falls out, and should its spores settle on the leaf-stalk, the leaf will drop off, and I had last year the trees in one of our Peach-houses almost leafless in the month of July, owing to the ravages of this fungus. The shoots are destroyed by the fungus penetrating the bark, and causing their death in the winter from gumming. I will just mention that I have sent fruit, &c., to many of our best fruit-growers, and to the editors of the various gardening periodicals, and have had several eminent gardeners to see them, but not in one single instance did they suggest the cause of this mischief to be due to a fungus, all of them stating it to be a scald before air was admitted in the morning. But to prove this to be a fallacy, I, in the next season, grew them with plenty of air, both night and day, and my experience of that season was very far from being as satisfactory as the preceding ones. Perhaps I should mention that from the first I believed it to be a fungus, but as I have stated before, the opinions of far more experienced men than myself had been taken, and I carried out their suggestions, but with no good results. This year I was determined to treat the trees as for a fungus, and I am most happy to say the means adopted have proved successful, far beyond my expectation. I am informed by my employers that this season's crop has been the best since the houses have been erected, and scarcely a dozen fruits have been destroyed in the two houses of 100 feet in length. Should Mr. Sheppard like to try the efficacy of the remedy, I shall be delighted to send to him some of the same composition. *Alfred Bishop, Westley Hall Gardens, Bury St. Edmunds.*

PINES UNDER THE SHADE OF VINES.—At one time, the cultivation of Pines under Vines was not at all uncommon, and I well remember that I had to do with four houses where both had to be so managed, and that with very good results as regards the two. This was at Longleat, when I was foreman there under Mr. Anderson, which period dates back some thirty-four years, at which time the Pines were in brick pits, about 4 feet deep, with a pathway round, and the Vines 2 feet or so clear of the Pines. The bottom heat for these was afforded by means of leaves gathered every autumn as soon as they fell, at which date others were stored for mixing in during the spring, when the beds were stirred to keep up the warmth. The way the Vines were treated was very ingenious, as along the front of the houses, where they came through under the wall plate, was a wide shelf, and on this rested boards put closely together in long lengths so as to form shutters, that went up from the shelves and met the lid to close on the top. In the autumn, when the Vines were pruned, they were laid along the front and the lights set open after the Vines were boxed in from the house, and there they wintered cool and dry; and in spring the lights were closed and the shutters removed, but the Vines left tied in the same position till the buds broke, when they were placed in position under the rafters. The sorts of Grapes most suitable for growing in the way referred to are the Muscats and Frontignans, as they like and require the heat, and I have never seen such good bunches and berries of the last named as we had there then. The worst part about it was the getting at the Vines, which was very awkward and trying, especially the thinning of the Grapes, which had to be done, or was done, from a stout board on legs at one end and the other suspended from the roof, on which board the operator had to lie on his back and clip out the berries, and these were caught in a bag hooped round at the top. Although Vines are not much grown in that manner now, other things have taken their place; and my good friend, Mr. Wallis, at Orwell Park, manages Melons splendidly in the Pine-stoves, where he grows most of the best of his fruit, and the plants are generally confined, as regards roots, in nothing more costly than drain-pipes. These are stood on the leaves in the Pine-beds, and just filled with loam, and the Melons planted in and then run up to the roof. *J. Sheppard.*

PROTECTING TREES FROM HARES AND RABBITS.—In the case of Coniferous trees, but particularly such as are branched to near the ground, it is a matter of great difficulty to prevent their being barked and gnawed during severe weather. Except in cases where the trees requiring protection are growing within a short distance of each other, and so can be fenced in with small meshed wire netting, the following method which I have practised for years with great success may be adopted:—Instead of applying tar or any other composition to the trees themselves, as is not unfrequently done stick four stakes round each plant at the distance of—say, 12 inches from it; then suspend a tarred cord from stake to stake at 9 inches from the ground. Both stakes and cord should be thickly daubed with tar and night-soil, and this repeated every three weeks or a month during the winter. For hard wood trees, or, indeed, any kind with branchless stems for 3 or 4 feet up, nothing keeps away hares and rabbits like the night-soil and tar, or, where this may be objected to, Davidson's composition. *A. D. W.*

VIOLETS MARIE LOUISE.—Notwithstanding the comparatively small amount of sunshine we have experienced, the weather, till a few days ago, has proved exceptionally mild for the season, and Violets which were taken up in September and transferred to frames with a good ball of earth attached to the roots have thrown a rich harvest of bloom. We find no variety so readily accommodates itself to frame culture as Marie Louise; but it is not so sweetly-scented as the Neapolitan. After the plants have begun to bloom, some manure-water should be applied to the roots at each alternate watering. Watering should be done in the mornings, when the weather is likely to be bright, and the chilling effect of watering the plants with cold water should be avoided. The enclosed blooms are a few gathered from a frame we have been picking from for several weeks, and are smaller than some we gathered in the end of October. *H. Markham, Mereworth.* [Very nice samples for the season. Ed.]

THE LATE ROBERT MARNOCK.—On reading Mr. D. T. Fish's "*In Memoriam*" in your last week's issue, I had brought to my recollection a pleasing reminiscence of the noble gentleness of his character, which occurred on the only occasion I had of meeting and speaking to him. In the spring of 1841, I was sent to London for the purpose of acquiring greater proficiency in the arts of horticultural and floricultural science, and the ways and means of making them practically and commercially useful. My first engagement was with Messrs. Marnock & Manley, then associated in trade, at the top of Church Street, Hackney, an old establishment which had been Mr. Mackay's. Amongst the stock was a number of large unnamed Camellias, and in the presence of these two gentlemen I pronounced the name of one then in bloom to be conspicua. Some little hesitation being evinced at accepting my definition, I said, "That was the name it was known by in Jersey." Mr. Marnock, with a good-natured twinkle in his eye, asked me, if it were not possible that the Jersey people were wrong in the name they had given it? There was no contradiction, but a pleasantly put doubt, which could not offend, and which made me wish for more opportunities of meeting Mr. Marnock, who was at that time much occupied at Regent's Park. It was not to be so, as I shortly afterwards went to Clapton, and thence to Bristol, when he was lost to sight and memory. It is long since this incident occurred, proving the generosity and gentleness of Mr. Marnock's character, which Mr. Fish's "*In Memoriam*" recalls to memory, and which I have much pleasure in recording. *C. B. S.*

FIGS AT CHRISTMAS.—There is now in one of the many forcing-houses in the gardens of the Messrs. Rothschilds, at Gunnersbury Park, Acton, an unusual sight for December, namely, a crop of ripe and ripening Figs. I have seen good Figs at all times of the year, between March and October, but never at this time before, and the marvel is the greater, inasmuch as the variety is that shiest of all fruiters under ordinary cultivation—Negro Largo. At Gunnersbury the very opposite is the case. The little bush trees in 10 and 12-inch pots are literally bunches of fruit in every stage of growth, from the size of marbles to that of ripe fruit, so that the harvest is likely to be a bounteous and a long one. Replying to my enquiries as to how the plants had been managed, Mr. Reynolds said that his predecessor, Mr. Roberts, had for some years made it a special study to obtain ripe Figs at this season, and that to Mr. Roberts, alone belonged the credit of the

successful results attained. I made no note at the time, and writing from memory, it is just possible that I may be wrong, but my impression is that I was told that two-year-old plants fruit the best, hence a batch of cuttings is put in annually, and a stock of young plants kept always on hand. The plants during the summer are kept in the coldest possible position, and new growth, therefore, rarely pushes till about midsummer; as soon as this new growth commences, the plants are duly supplied with water; but in every other respect the retardation of growth is the chief consideration. The plants are put into warmth early in October, botttom-heat being supplied by means of stable litter and leaves, on which the plants are placed, not plunged, other than by the little that is needed to keep the pots upright. But little overhead syringing is had recourse to, the moisture arising from damping of the fermenting material being ample. A more successful bit of fruit cultivation is hardly possible; and if Mr. Roberts or Mr. Reynolds can see their way to relate the process of cultivation in its entirety, they will be conferring a favour on gardeners generally. *W. W.*



FIG. 92.—GOOD-LUCK LILY (NARCISSUS TAZETTA.)

ROSA BERBERIDIFOLIA.—To add to the vagaries of this curious Rose, I may say that about a month ago it produced a second crop of flowers. *H. E., Ryde.* [This is an additional charm for this Rose. Is it going to evolve into a H.P.? ED.]

THE WINTER MOTH.—These destructive insects have again presented themselves in prodigious numbers, thousands of them being captured nightly in the sticky bands of "Davidson's Composition," placed on paper bands on our orchard trees. It is not difficult to realise the mischief the progeny of these particular insects would bring about if allowed to go unchecked till next May. The havoc committed in the western counties last spring was fearful to contemplate, very many trees, not only fruit trees, but Oaks, Hawthorn in hedges, and other vegetation being quite defoliated. There can be no doubt of the efficacy of these grease bands, if applied early in the month of October. We had hopes that fresh gas-lime, applied on the surface of the soil, thinly but frequently, on a diameter of 3 to 4 feet around each tree, would have proved a deterrent, and so frustrated their access to the trees; but such hopes resulted in total failure, as witness the large numbers caught in the grease traps, on the stems of the trees. The grease bands were put on the trees on October 7, and the first female caught and observed was on October 15; there having been a pretty steady increase of numbers caught nightly since, and there is now a continuous flow of them. We have found glazed brown paper bands the best, cut to 8 or 9 inches in width, and preferable to the thin waterproof papers, or those absorbent kinds of paper which we have tried. Of course a sharp look-out must be kept that the frosty or wet weather does not cause the compo to lose its stickiness, or the female moths will walk over it. Davidson's composition we find very efficacious, and appears to consist of some greasy substance with Stockholm tar; and it is also recommended by Dicksons, of Chester, as a preservative for trees against attacks of rabbits. Some writers recommend the encouragement of small birds; but with all due deference to the good they otherwise do, I fail to see how they can eradicate these moths until much evil is done; and seeing that the moths only appear by night, whilst it is fairly certain the wingless females are ready for egg-laying the moment they commence their ascent, and may be observed by the aid of a lantern, in the act of propagation on the lower part of the tree stems—in fact, many of them deposit quantities of eggs upon the grease in their death struggles. Doubtless the birds find many eggs after being deposited, but towards spring the insects hatch out in such numbers that no possible number of birds could cope with them; moreover, their appetites soon become satiated. Possibly there are many other equally destructive moths to be reckoned with, and this remedy does not guarantee a crop of fruit; still, it is something gained, to preserve the foliage. I sometimes think that a spell of early fine weather in spring hatches out the insects, and a relapse of hard weather following compasses their destruction, so possibly a fairly late spring frost is a necessary and not unmixed evil. *W. Crump, Madresfield Court, November* 23.

PROTECTION OF FRUIT-BUDS.—Look out for the safety of fruit-buds, as already bullfinches and sparrows are at work, and if not destroyed or held in check will soon ruin the trees and bushes they attack, which the sparrows seem to do a good deal out of sheer mischief, or for amusement, as they do not appear to devour much of what they pick out, but let the greater part fall to the ground. Not so the bullfinch, as he goes to work in a business-like way, and makes his meal, but does this off Plums principally, and on these may often be seen to be very busy indeed plying his bill. Except for his beauty, the bullfinch might be destroyed without feeling much compunction, as he is of little use; and I am no believer in the sparrow, and am surprised to see that a voice has been raised in America for that bird, as in my opinion he is an unmitigated nuisance and only a loafer, hanging about farm buildings and the houses and haunts of men to rob other feathered tribes, and snatch up any grain or crumbs ready to hand. Would that he would stay in towns, for which his habits and mode of life so pre-eminently suit him, and leave our gardens alone, as he only comes to feast on buds and Peas; but my object in the commencement of penning this was to suggest a way in which his and the finches' depredations might quickly be stopped, and that is by liming the trees. The quickest and most effectual way of doing this is to slake fresh lime and mix it with sufficient water to have it about the consistency of thin paint, when, after straining it through a fine sieve, it may be syringed over the branches, or forced there by using the garden engine instead. This should be done during a still day, and when the trees are a little damp, as then the wash adheres all the better, if it dries soon after. Besides being so valuable for keeping off birds, this lime-wash is of much good to the trees and bushes, as it kills all moss, lichen, or parasitical growth on the bark, and is highly beneficial to Apples, as it prevents the moth breeding, in addition to clearing them of the enemies referred to. *J. S.*

NARCISSUS TAZETTA.

IN our issue for April 13 last, we gave an illustration of bulbs in flower of Narcissus tazetta, growing in a bowl of water, and which are kept in position by small stones placed around and over the roots. This plant is held in high esteem by the Chinese at their New Year's festival. The illustration (fig. 92), kindly lent by Messrs. J. Carter & Co., of High Holborn, shows a much better bloomed group of Narcissus bulbs, and to which the young Chinese lady is singing an ode, possibly made in allusion to some domestic event.

The name "Goodluck Lily" is a translation of its Chinese name. It is known also as the "Water Fairy Lily," and the legend concerning it will be found in the issue above-mentioned.

Messrs. Carter have imported a number of the bulbs in fine condition, judging from the sample sent to us.

SOCIETIES.

LIVERPOOL CHRYSANTHEMUM.

NOVEMBER 19.—A grand autumn exhibition of the Chrysanthemum was held in St. George's Hall on the above date. The cut blooms of Chrysanthemums were of fine quality, and competition was keen, rendering the task of the judges a difficult one, so close in point of merit were many of the stands, owing, doubtless, to the large number of growers of them in the neighbourhood of the town, and the fact that the Chrysanthemum has long been grown here as an exhibition plant.

Specimen Pompons were very fine, but a falling off was noticed in the numbers of others, and the groups were of little merit. Fruit, though of good quality, was less in quantity than is usual here; but miscellaneous plants were quite up to the average, and the show was in every way a good one.

Cut Blooms.—The principal competition was in the class for forty-eight, in not less than thirty-six varieties. The prizes were high, and the contest keen. Mr. R. Foster, gr. to H. S. Thompson, Esq., Kingwall Hall, Broadgreen, was 1st, the superiority of his incurves, which were large and fresh, deciding the point. Mr. J. Edwards, gr. to H. Tate, jun., Esq., Allerton Beeches, was 2nd, with very good blooms.

Eighteen incurved, distinct, were best staged by four competitors, namely Mr. G. Eaton, gr. to

W. H. Shirley, Esq., Allerton House, Allerton, 1st, with medium-sized, fresh blooms of leading varieties. Mr. Jellicoe, gr. to F. H. Gossage, Esq., Camp Hill, Woolton, was 2nd.

Five exhibitors appeared in the class for twelve incurved, distinct blooms, and Mr. W. Wilson, gr. to H. Cunningham, Esq., Gorsey Cop, Gateacre, easily secured 1st place with medium-sized and clean blooms; 2nd, Mr. J. Brantingham, gr. to W. Radcliffe, Esq., Roselands, Aigburth.

Japanese made a good show, and very close in point of merit they were. Six growers competed for eighteen, the 1st prize falling to Mr. J. Gould, gr. to R. N. Dale, Esq., Bromborough Hall, Birkenhead, for a well-matched stand, Edwin Molyneux, Boule d'Or, and Jeanne Delaux, being the most noteworthy; Mr. J. Brantingham was 2nd.

Eight competitors showed for twelve Japanese, distinct varieties, and Mr. Jellicoe put up as even a lot of blooms as it would be possible to find at the present time, and secured 1st place; Mr. J. Brantingham a close 2nd.

Another class for the same number of Japanese was provided, and here Mr. G. Beetle, gr. to T. Drysdale, Esq., Moren House, Mossley Hill, succeeded in carrying off 1st honours, with a good lot. Mr. J. Breen, gr. to J. Bosford, Esq., Tattenhall, Chester, won easily with six varieties of good quality, Boule d'Or here appeariug conspicuously.

Anemone-flowered varieties were shown by seven competitors, and the best an even lot, and carrying good centres, came from Mr. W. Wilson, Fleur de Marie and Jeanne Marty being very noticeable for size and good shape; Mr. A. R. Cox, gr. to A. H. Watts, Esq., Elm Hall, Wavertree, was 2nd. The same two prize-winners were placed in the order here named for six reflexed Pompons, but were badly grown, and equally badly staged.

EDINBURGH CHRYSANTHEMUM SHOW.

The following special awards, given at the above show, have been received since the publication of the detailed report in our last issue:—

For the best bloom in the show of Japanese Chrysanthemums, Mr. McHattie, Newbattle Abbey, the National Chrysanthemum Society's Bronze Medal for Avalanche.

Mr. Foster, Welwood House, Selkirk, for the best incurved bloom, received the National Chrysanthemum Society's Bronze Medal for Golden Empress.

Mr. Carruthers, Corstorphine Hill House, received a Silver Medal for the best plant of Chrysanthemum in the show.

The Veitch Memorial Medal was awarded to Mr. Foote, gr. to Captain C. C. Dormer, Parson's Green, Edinburgh, as the winner of the largest number of 1st prizes in the Chrysanthemum classes.

Messrs. R. P. Laird & Sons, Edinburgh, received a Silver Medal for a collection of decorative plants.

Mr. Calder, Calder Bank, Trinity, received a Bronze Medal for exhibiting a superiorly grown collection of Chrysanthemums in pots.

First-class Certificates were awarded to Messrs. Cannell & Son, Swanley, Kent, for single Chrysanthemums Florence and Etoile de Lyon; to Mr. Morton, Darlington, for Chrysanthemums Puritan, Mr. W. Coles, and L. Canning; to Mr. T. S. Ware, Tottenham, for Chrysanthemum Madame Alpheus Hardy, &c.; to Mr. Mackie, gr., Seaborne House, Broughty Ferry, for a crimson Anemone flowered Chrysanthemum named Mrs. R. A. Mudie.

The Conference.

The Conference announced to take place in connection with the above show was held on the 22nd inst. in 5, St. Andrew Square, Edinburgh. The attendance was large. Professor Bayley Balfour presided.

In introducing the proceedings, the chairman said he thought they might congratulate themselves on the success of the Chrysanthemum exhibition which they had laboured for some time past to render not only commemorative, but also a means of stimulating the popular interest in the flower. One important effect of the exhibition would be to show the people the great beauty there was in the Chrysanthemum, and which would doubtless induce them to cultivate it themselves. Great progress had been made in the improvement of the flower in the course of a century of culture in this country, but it was not, therefore, to be assumed that we were ahead of eastern cultivators. It had to be remembered that when introduced to this country the Chrysanthemum had already been the subject of the eastern gardener's skill for many centuries, and the plant was, therefore, susceptible of immediate developments which would be impossible in the case of a mere wild flower on its first introduction to skilled cultivation. Yet the types that had been developed since its introduction, he fancied were not to be found, or if found had not the same quality or character in the east as they had here.

Mr. Robertson Munro read a brief paper on the—

Early-flowering Chrysanthemum. — Treating the subject historically, he considered that it was doubtful whether the early-flowering sorts of the present time were seminal varieties of the Chusan Daisy, introduced from China by the late Mr. Fortune in 1845, or descendants of an older race. So little appears to have been known of them till quite recently, that their great usefulness as decorative plants in the open does not seem to have been known, even to Mr. David Thomson, in 1871, as he makes no mention of them in his *Handy-Book of the Flower Garden*, published that year. And notwithstanding the fact that Piercy, Taylor, Freeman, and others, had written on them since that date an appreciation of their value as summer and autumn decorative plants, does not seem to have found expression till 1876, through their advocacy by the first-named writer, who has been styled by Mr. Burbidge the "champion of the race." Attention, however, is drawn in an editorial note to the paper read by Mr. Piercy at the Conference on the Chrysanthemum held by the National Chrysanthemum Society on September 11 of the present year, published in the *Gardeners' Chronicle*, September 14, that as many as fifteen varieties of summer and autumn-flowering Pompons were published in the spring list of Mr. Salter, Versailles Nursery, Hammersmith. Further, in the *Cottage Gardener*, November 27, 1860, Mr. Donald Beaton gave what he termed a "prime" list of the best kinds then found in that nursery; they were—"Fan-fer-luche, Il Breuyère, La Main, Be-be (a sweet thing), Marquis d'Alfareti, Ninette, Pompon d'Or, Queen of Liliput, Queen Mab, Theresita, and Zoe," and he adds, as if drawing on memory rather than what he had seen at Salter's, "No plant is more suitable to help out some bedding plant that is over by the middle of September than the Scarlet Gem Pompone." With the exception of the last-named variety, it is to be assumed that Mr. Beaton saw it on that occasion at the Versailles Nursery, none of the others appear now to be in cultivation.

It seems clear from the names of most of the sorts in the foregoing, that the race must have originated in France; and it appears equally clear that the credit of introducing the first "set" of such kinds as we have at present, is due to the late Wm. Handayside, of Musselburgh, a brother of the late nurseryman of that name and place. Thirty years ago "Little Bob" now known as Scarlet Gem, and as Dr. Bois Duval, and albiflorum or nanum, were grown in Scotland. About 1868, it appears Mr. Wm. Handayside presented this set of early flowering Chrysanthemums to the Royal Botanic Garden, Edinburgh, and that thence they found their way soon after to Tooting, through Mr. Robert Parker, and were distributed by him. In addition to the two varieties already named, viz., Scarlet Gem and nanum, the following composed the "set": Adrastes, Cassy, Chromatella, Delphine Caboche, Frederick Pelé, Golden Gem, Jardin des Plantes, or Precocité Illustration, Le Luxemburg, Madame Pecoul, White Queen (Jardin des Plantes, white of Handayside, and since known as Souvenir de un Ami), and Orion. These complete the set presented to the Botanic Garden, Edinburgh, and which appears to have been distributed through Mr. Parker's agency about 1870 in England from that source; and they do not seem to have been known either there or in Scotland beyond Mr. Handayside's circle prior to that date, Scarlet Gem and nanum excepted.

Mr. A. McKenzie, Warriston Nursery, read a paper on "Chrysanthemums for Decorative Purposes;" Mr. Fulton, Broughty Ferry, a paper on "Dwarf Specimen Chrysanthemums;" Mr. McHattie, Newbattle Abbey, a paper on "The Chrysanthemum for Show Purposes in Scotland;" and Mr. Morton, Darlington, a paper on "The Taking of the Bud." Discussion freely followed each paper, and in replying to that on his paper, Mr. Morton stated that, regarding the time of securing the bud, he found the best blooms in his late district were produced by those secured from August 10 to 25, and most Scotch growers averred that on this point their experience agreed with his.

NATIONAL CHRYSANTHEMUM.

A largely attended meeting of the general committee took place at Anderton's Hotel, Fleet Street, E.C., on Monday, the 2nd inst., Mr. R. Ballantine presiding. The minutes of the last meeting having been read, Mr. Holmes, the Hon. Sec., announced that the annual dinner would take place on Thursday, December 19, at Anderton's Hotel, and that Lord Brooke, M.P., the President, would preside, and that Sir Guyer Hunter, M.P., Sir L. Pelly, M.P., Sir E. Saunders, the Rev. W. Wilks, Messrs. H. J. Veitch, S. Hibberd, &c., had promised to be present. It was agreed that the dinner should be at 6 P.M. sharp. The Hon. Sec. made reports as to the York and the National Society's Show at Hull, the latter he characterised as a very excellent one, creditable alike to Hull and to the Society. A hearty vote of thanks was passed to the Committee of the Ancient Society of Florists of York for so hospitably entertaining the deputation from the National Chrysanthemum Society on their way to Hull. The Hon. Sec. also reported as to the recent show at the Royal Aquarium, and Mr. Harman Payne, as the Foreign Corresponding Secretary of the Society, also made a report as to the recent International Centenary Exhibition at Ghent, and handed in the Gold Medal of the Société Royale d'Agriculture et de Botanique de Gand, which had been conferred upon the National Chrysanthemum Society as a testimony of gratitude for its services in connection with the Chrysanthemum. Mr. Payne was requested to convey to the Ghent Society the acknowledgments of the Society for the compliment paid it by the bestowal of the Medal. Forty-one new members were elected, including M. Anatole Cordonnier, Roubaix, and five new Fellows, bringing the number of members up to 673. The Northern Horticultural Society of Launceston, Tasmania, and the Batley Chrysanthemum Society, were admitted to affiliation, the Secretary of the former stating that all their Chrysanthemums were grown in the open ground, remaining there all the winter until cuttings are taken from them in the spring. Their annual Chrysanthemum show takes place in April. The Gold Medal of the National Chrysanthemum Society is offered as the 1st prize for twenty-four incurved and twenty-four Japanese varieties. On the recommendation of the Centenary Sub-Committee, it was unanimously resolved that the great show next year in celebration of the Centenary of the Chrysanthemum should take place at the Royal Aquarium on November 11, 12, 13, 14. The judges for this show were also appointed, with the addition of a reserve list. A cordial vote of thanks to the Chairman closed the proceedings.

THE NATIONAL ROSE SOCIETY.

That a large room at the Horticultural Club in the Windsor Hotel should be filled on a cold wintry day by gentlemen "from all parts of the country," is pretty good evidence of the never fading popularity of the Rose, and of the satisfaction that is felt at the works and ways of the National Rose Society. For it must be remembered that there were on this occasion no prizes to whet the eagerness of competitors or stir the enthusiasm of onlookers. It was a severely formal business meeting, the propriety and decorum of which were only disturbed by a passing allusion made by one of the speakers (of course in a purely Pickwickian sense), to the Chrysanthemum as "a flower of low nature." The meeting in question was held on Wednesday last, and was presided over by the Treasurer, Mr. Haywood, whose accounts showed that after paying all expenses, including some £461 9*s.* for prizes and medals, there remained a balance in hand of £84 5*s.* 3*d.*, as contrasted with one of £41 2*s.* at the corresponding period of last year.

The annual report, read by one of the secretaries, Rev. H. H. D'Ombrain, passed in review the principal events of the year, detailing how the visit of the Shah disconcerted the arrangements at the metropolitan show at the Crystal Palace, how the provincial show at Sheffield was, owing to the season, less extensive than usual; how the Rose Conference at Chiswick, in which the Society co-operated with the Royal Horticultural Society, was the most noteworthy event of the year, in a rosarian sense, of special interest and unique in character, though thinly attended. Each member of the National Rose Society is to have a copy of the report of the Conference, which we may parenthetically say will be issued almost immediately.

Various alterations in the bye-laws and rules

destined to promote smooth working were made. Among the most important of these was a rule condemning in no equivocal terms the dressing of Roses and the insertion of additional foliage. These are henceforth to be prohibited. The metropolitan show for next year was fixed to be held at the Crystal Palace on the first Saturday in July, and the provincial show at Birmingham on July 7.

A prize of £15 for early Tea Roses is to be competed for by amateurs at one of the fortnightly meetings of the Royal Horticultural Society, a proposal which was well received by the meeting, only one dissentient voice being heard, and that not in the decisive form of any resolution or amendment.

Still the hint will not be lost on the Royal Horticultural Society, who will, doubtless, do their best to endeavour to find some place for their fortnightly shows less objectionable than that which was found to be the only available situation in the emergency of the flitting from South Kensington.

The balloting list for the committee and officers was revised, but only two changes were made, the names of Mr. Barker and of Mr. Wollaston being substituted for those of Mr. Cranston and Mr. Shirley Hibberd.

Formal votes of thanks to all and sundry concluded the business of what must be deemed a very satisfactory meeting—a satisfaction felt, no doubt, in an enhanced degree by those who subsequently dined in the club-room.

BARTON-ON-HUMBER.

THE Barton and District Chrysanthemum Society's Show, which was held on the 27th ult., in the Oddfellows' Hall, brought a good display of cut blooms, especially when the late period is considered.

In the open classes, twelve Japanese, twelve incurved, distinct, the 1st prize was won by G. B. Guthrie, Esq., Waltham Hall, Grimsby (gr., Mr. John Walker). For twelve incurved, Mr. E. Smith was 1st; and for twelve Japanese, G. A. Carr, Esq., Waltham Grove (Mr. W. Welton, gr.), was 1st. For twelve blooms of any variety, Mr. E. Smith was 1st. Mr. C. J. R. Crowder was 1st for a group of Chrysanthemums. Mr. W. H. Appleby, Bowley, was 1st for six specimen Chrysanthemums.

TREES AND SHRUBS.

THE SCARLET-BERRIED ELDER.

IT has been said that this plant (Sambucus racemosa) seldom fruits in England, but this statement hardly agrees with my experience of it. Many years ago, the late Sir John Nasmyth, Bart., the celebrated landscape gardener, was said to have produced a grand effect by the free use of this plant in the woods and sloping hillsides, &c., at his beautiful seat of Dalwick, or Pesso, in Peeblesshire; and years after this, at Sir John's suggestion, the plant was to some extent used with good effect in the coverts, woods, and grounds at Culford and other places in that neighbourhood.

The plants used at Culford were procured from Mr. Gentle, a nurseryman in the town of Peebles, and were at first planted in the nursery grounds, where they grew rapidly and fruited freely, the latter being sown in seed pans, &c., and a good stock of the plant was soon secured, and these were ultimately planted in the woods, &c., and so far as I recollect, the birds did not greatly interfere with the ripe fruit, or, at least, until the weather became severe. But the plant being indigenous to Central Europe, does not appear to be sufficiently hardy to withstand our English climate, particularly in low lying or damp localites. At all events, a more than ordinary severe winter occurring some six or seven years after they were planted, and when the plants had attained to considerable dimensions, proved fatal to all, or nearly all of them; and I do not know for certain, but I fear, that scarcely any portion of them will now be found to be alive. On more elevated situations, on rocky eminences, hill sides, &c., the plants appear to be more at home and are likely to succeed better, and in such situations the plants at all seasons produce a very pretty effect, furnishing in great abundance their racemes of white, or greenish-white flowers, which are succeeded by numerous pendulous bunches of bright scarlet fruit during the months of August and September, the bunches being generally some six or more inches in length, and being by their clear bright colour rendered exceedingly conspicuous and attractive.

The plant also submits very readily to pinching or pruning, and may with little attention be formed into handsome specimens of any desired dimensions, with clear stems of any reasonable height, and will in slightly sheltered situations continue in good condition for many years. *P. G.*

Obituary.

DR. W. R. MCNAB.—The sudden death of Dr. W. R. McNab, on Tuesday last, December 3, has caused much regret in Dublin. Dr. McNab was at Glasnevin on Monday last, and had arranged with Mr. F. W. Moore, the Curator, to meet him on the ollowing day, in order to do some conjoint work in the Herbarium. This, however, was not to be.

Dr. McNab afforded an illustration of hereditary endowments, his grandfather and his father having both been curators of the Royal Botanic Garden, Edinburgh, and noteworthy contributors to the progress of botany, as well as of horticulture. William Ramsay McNab, who, for some years past, has been Professor of Botany at the Royal College of Science, Dublin, and Scientific Director at Glasnevin, made a name for himself by his labours in physiological botany, and in the study of the minute anatomy of plants, both recent and fossil. He graduated as Doctor of Medicine in Edinburgh, studied for some time in Berlin, practised his profession in a large establishment near Dumfries, but speedily became Professor of Natural History at the Royal Agricultural College at Cirencester. From thence he went in succession to Mr. W. T. Thiselton Dyer, as Professor of Botany under the Science and Art Department to Dublin, and has been for many years exceedingly active in his duties as a teacher. As a physiological botanist he had necessarily many points of contact with horticulture independently of those which came to him by inheritance, and his researches into the minute anatomy of the leaves of Conifers, afford useful means of discrimination in certain cases.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending December 2, is furnished from the Meteorological Office:—

"The *weather* has varied considerably in different parts of the country during this period. The first two or three days were characterised by squalls, and snow or hail showers alternating with bright intervals; subsequently, however, the conditions became more settled and generally dry, although some rain was experienced at some of our extreme western and north-western stations.

"The *temperature* has been below the mean in all districts. In Ireland and Scotland the deficit has been no more than 1°, but over the greater part of England a deficit of 5° or 6° is shown. The highest of the maxima (which were registered on irregular dates) ranged from 43° in 'England, N.E.,' to 54° in 'Ireland, S.' At Rothamsted the thermometer on December 2, is reported to have fallen to 12°, and at Llandovery a minimum of 13° is said to have occurred on November 27, but at other stations in those districts the minima were in no case lower than 22° and 25° respectively. In other districts the minima for the week varied from 19° in 'England, S.,' to 27° in 'England, N.E.,' and 33° in the 'Channel Islands.'

"The *rainfall* has been considerably less than the mean in all districts.

"*Bright sunshine* has been rather more prevalent than of late. The percentage of the possible amount of duration ranged from 7 to 24 in Scotland, from 18 to 20 in Ireland, and from 12 to 28 over England. In the 'Channel Islands' 29 per cent. was recorded."

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending December 2.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	1	28	+ 212	— 35	3 —	223	37.7	7	22
2	1 —	0	36	+ 18	— 29	6 —	182	24.5	14	28
3	4 —	0	48	+ 1	— 28	3 —	168	22.8	12	26
4	6 —	0	59	— 20	+ 89	2 —	172	24.6	20	31
5	5 —	0	55	— 21	+ 24	6 —	161	25.3	27	28
6	6 —	0	48	+ 37	+ 37	6 —	158	24.1	25	30
7	1 —	2	25	+ 54	— 78	9 —	189	37.6	21	30
8	4 —	0	32	+ 42	— 40	7 —	179	29.2	28	29
9	5 —	3	31	— 93	+ 83	4 —	179	32.8	20	34
10	1 —	7	21	+ 67	— 8	3 —	212	35.1	18	26
11	1 —	12	20	— 1	— 37	4 —	190	33.6	20	32
12	3 —	19	8	+ 114	— 12	6 —	190	27.7	29	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

VARIORUM.

CINNAMON.—The proprietors of Cinnamon estates in Colombo, in order to raise the market value of quill Cinnamon, have recently decided not to prepare, sell, or export, any Cinnamon chips for a period of two years, so that Cinnamon chips will virtually disappear from the market, and the demand for the more costly product, quill Cinnamon, will be increased accordingly. They have also recommended that no Cinnamon grower should allow the manufacture of Cinnamon-leaf oil, or permit the removal of leaves from the plants for that purpose. If this resolution is carried out, it would have the effect of creating a still greater demand for Cinnamon bark to be used for distillation. In support of the proposition, it was pointed out that good Cinnamon oil in 1877, fetched 4*s.* 8*d.* per oz., while the same quality of oil in 1886 sold for 1*s.* 8*d.* per oz.; in consequence, many stills had ceased manufacturing Cinnamon oil.

PRODUCTION OF CORK IN PORTUGAL.—Next to wine, Cork is said to be the most important product of Portugal. The exports of manufactured Cork from Lisbon during 1888 showed an increase over those of 1887 of over £38,600, the total value of the exports for 1888 amounting to £148,000. It is estimated that a similar increase will continue so long as the area in which Cork trees can be profitably cultivated is confined to the present limits, and so long as no substitute can be found for corks as stoppers.

TRADE NOTICE.

MR. G. H. RICHARDS, lately Head Gardener to the Earl of Normanton, Somerley, Ringwood, Hants, has commenced business as Horticultural Valuer and Sundriesman, and Wholesale Dealer in Garden Soils, with dépôts at 1, Belvedere Crescent, Lambeth, London, and County Oak, Crawley, Sussex.

MARKETS.

COVENT GARDEN, December 5.

Our market is now mainly supplied with foreign goods. Moderate consignments of Apples are reaching us from Canada and Nova Scotia, but mostly of inferior quality, and prices rule high. Hothouse Grapes are in good supply, and are only cleared at low rates. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6-	7 0	Lemons, per case	12 0-	25 0
— Nova Scotia, brl.	8 0-	21 0	Pine-apples, Eng., lb.	1 0-	1 6
Cobs, per 100 lb.	140 0-	...	— St. Michael, each	2 0-	6 0
Grapes, per lb.	1 0-	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0 9-	...	Mushrooms, punnet	1 6-	...
Beet, red, per dozen	1 0-	2 0	Onions, per bunch	0 5-	...
Carrots, per bunch	0 6-	...	Parsley, per bunch	0 4-	...
Cauliflowers, each	0 3-	...	Rhubarb, per bundle	1 6-	...
Celery, per bundle	1 6-	2 0	Seakale, punnet	2 6-	...
Cucumbers, each	1 0-	1 6	Shallots, per lb.	0 6-	...
Endive, per dozen	1 6-	...	Spinach, per bushel	2 0-	...
Herbs, per bunch	0 4-	...	Sprouts, per lb.	0 3-	...
Leeks, per bunch	0 3-	...	Tomatos, per lb.	1 0-	...
Lettuce, per dozen	1 6-	...	Turnips, per bunch, new	0 5-	...
Mustard and Cress, punnet	0 4-	...			

POTATOS: — Market firm. For best samples, 90*s.* to 100*s.*; medium, 60*s.* to 70*s.*; and ordinary to inferior, 40*s.* to 50*s.* per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0-	18 0	Euonymus, in var., per dozen	6 0-	18 0
Aspidistria, doz.	18 0-	42 0	Evergreens, in var., per dozen	6 0-	24 0
— specimen plants, each	7 6-	10 6	Ferns, in var., per dozen	4 0-	18 0
Azaleas, various, each	2 6-	3 6	Ficus elastica, each	1 6-	7 0
Begonias, dozen	4 0-	12 0	Foliage plants, various, each	2 0-	10 0
Christmas trees, doz.	4 0-	24 0	Marguerites, doz.	6 0-	12 0
— — extra size, each	5 0-	21 0	Palms in var., each	2 6-	21 0
Chrysanth., dozen	6 0-	15 0	Pelargoniums, scarlet, per dozen	6 0-	8 0
— extra large, each	2 0-	5 0	Roman Hyacinths, per dozen pots	9 0-	12 0
Cyclamen, dozen	15 0-	24 0	Solanums, per dozen	6 0-	12 0
Cyperus, per dozen	4 0-	12 0	Tulips, doz. pots	8 0-	10 0
Dracæna terminalis, per dozen	30 0-	60 0			
— viridis, per doz.	12 0-	24 0			
Epiphyllum, per doz.	12 0-	18 0			
Ericas, various, doz.	8 0-	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0-	4 0	Narciss., paper-white, French, doz. bun.	4 0-	6 0
Azaleas, doz. sprays	0 9-	1 6	— Eng., doz. sprays	1 0-	1 6
Bouvardias, per bun.	0 6-	0 9	Pelargoniums, 12 spr.	0 9-	1 6
Callæthiopica, 12 bl.	3 0-	6 0	— scarlet, 12 spr.	0 9-	1 3
Camellias, white, doz.	2 0-	4 0	Primulas, double, 12 sprays	1 0-	1 6
— various, per doz.	1 0-	2 0	Roman Hyacinths, Eng., doz. sprays	0 9-	1 6
Carnations, 12 blms.	1 0-	2 0	Roses, Tea, per doz.	1 0-	3 0
Chrysanth., 12 bun.	4 0-	12 0	— coloured, dozen.	2 0-	4 0
Chrysanth., 12 blms.	0 6-	3 0	— French, dozen	1 0-	2 0
Cyclamen, doz. blms.	0 4-	0 9	— red, per dozen	1 0-	2 0
Eucharis, per dozen	3 0-	4 0	— Safrano, dozen	1 0-	1 6
Gardenias, 12 blooms	6 0-	12 0	Spirea, doz. sprays	1 0-	1 6
Heliotropes, 12 spr.	0 6-	1 0	Stephanotis, 12 spr.	5 0-	8 0
Lilac, white, Fr., bun.	6 0-	8 0	Tuberoses, 12 blms.	1 0-	1 3
Lilium, var., 12 bl.	2 0-	6 0	Tulips, doz. blooms	1 0-	2 0
Lily of the Valley, doz. sprays	6 0-	9 0	Violets, 12 bun	1 0-	2 0
Maiden Hair Fern, 12 bun.	4 0-	9 0	— French, bunch	1 6-	2 6
Mignonette, 12 bun.	2 0-	4 0	— Parma, 12 bun.	3 0-	4 0
— French, per bun.	1 6-	2 0			
Marguerites, 12 bun.	3 0-	6 0			

ORCHID-BLOOM in variety.

Trade slack; but a little improvement upon last week.

SEEDS.

LONDON: *Dec.* 4.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, describe the seed market to-day as dull and featureless. The quietude, which is always characteristic of the close of the year, has now begun to settle down upon the seed market. Low qualities of red Clover seed are obtainable on easier terms; there is no change in the value of choice samples or of Alsike, white, or Trefoil. More money is asked for blue Peas; the cold weather brings a better inquiry. Haricot Beans are good and cheap. Rape seed keeps firm. Fine Mustard is scarce. Birdseeds unchanged. Prices are now very low.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, in the week ended November 30:—Wheat, 30*s.* 1*d.*; Barley, 29*s.* 9*d.*; Oats, 17*s.* 6*d.* For the corresponding period in 1888:—Wheat, 31*s.* 8*d.*; Barley, 27*s.* 4*d.*; Oats, 16*s.* 9*d.*

FRUITS AND VEGETABLES.

SPITALFIELDS: *Dec.* 4.—Savoys, 2*s.* to 4*s.* per tally; Cabbages, 2*s.* to 3*s.* do.; bunch Greens, 6*s.* to 7*s.* do.; Brussels Sprouts, 1*s.* to 1*s.* 6*d.* per half-sieve; Turnip-tops, 1*s.* 6*d.* to 2*s.* per sack; Cauliflowers, 4*s.* to 7*s.* 6*d.* per tally; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Parsnips, 6*d.* to 8*d.* per score; Beet-roots, 4*d.* to 6*d.* per dozen; Turnips, 1*s.* 6*d.* to 2*s.* per dozen bunches; Carrots, 1*s.* 6*d.* to 2*s.* do.; do., 30*s.* to 40*s.* per ton; Parsley, 2*s.* to 2*s.* 6*d.* per dozen bunches; frame Cucumbers, 2*s.* 6*d.* to 3*s.* 6*d.* per dozen; Leeks, 1*s.* to 1*s.* 6*d.* do.; Mustard and Cress, 1*s.* to 2*s.* per dozen baskets; Endive, 1*s.* to 1*s.* 6*d.* per dozen; Celery, 4*s.* to 8*s.* per dozen bundles; Horseradish, 12*s.* to 16*s.* do.; Spanish Onions, 6*s.* to 7*s.* 6*d.* per case; English Onions, 7*s.* 6*d.* to 9*s.* per cwt.; Dutch Onions, 5*s.* to 6*s.* per bag of 110 lb.; Belgian Onions, 5*s.* 6*d.* to 6*s.* do.; Mangels, 16*s.* to 18*s.* per ton; American Apples, 14*s.* to 22*s.* per barrel; English Apples, 3*s.* to 6*s.* 6*d.* per bushel; Pears, 2*s.* 6*d.* to 4*s.* per half-sieve.

POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 3. — Best samples are not plentiful, and command rather more money. Ordinary and middling sorts are in large supply, with much difficulty in finding buyers. Our top quotations have to be raised, and lowest have to be reduced still lower. Regents, 40*s.* to 80*s.*; Hebrons, 40*s.* to 95*s.*; Magnum Bonums, 40*s.* to 85*s.*; Imperators, 40*s.* to 75*s.* per ton.

SPITALFIELDS: *Dec.* 4.—Quotations: Imperators, 50*s.* to 60*s.*; Magnums, 50*s.* to 65*s.*; Regents, 55*s.* to 70*s.*; Hebrons, 50*s.* to 60*s.*; Early Rose, 40*s.* to 55*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Prime old Clover, nominally, 116*s.* to 126*s.*; current prime, 78*s.* to 88*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 94*s.*; inferior, 26*s.* to 50*s.* Straw, 20*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, and not to the Editor.

BAST MATS: *C. H. W.* They are made in Russia and in other parts of eastern Europe, from the inner bark of the common Lime, which is steeped in ponds till it is readily separated into shreds, and these are woven into mats of various qualities by the peasantry. In this country the inner bark of the Lime is equally good for the purpose, but we have so much money, and perhaps so few Limes, that we prefer to buy it.

CURRANT AND GOOSEBERRY CUTTINGS FOR STANDARDS: *Amateur.* If these are required to form standards, very strong, stout shoots, of at least 18 inches in length, should be selected, and all eyes cut out except three or four at the upper end of the shoot. It is better to leave several buds, although only one is wanted—that for the leader; for without some quantity of side-growth, the swelling and strengthening of the future stem will be slow. Insert the cuttings now, to 1 foot or less in depth, in good soil. If few, dibble them in; but if many, cut out a trench of the required depth, and with a perpendicular back, and lay in the cuttings at 6 inches apart, or a greater distance, if you can spare the ground. When the shoots springing from the buds have grown so that it is easy to distinguish the one which is likely to make the best leading shoot, tie that one loosely, and without undue straining of it, to a straight stick 3 feet in length. Pinch out the points of the other shoots, and those of any lateral shoots the leader may make in the course of the summer. In this kind of work it is better to employ some strong growing Gooseberry or Currant as the stocks, and graft the better, and usually weaker growing varieties, on these when tall enough for the purpose. Never use suckers of Gooseberries and Currants, if you wish to avoid the never-ending plague of root-suckers.

DAHLIA ROOT IN HAND OF A MUMMY: *W. A. Cook* Perfect nonsense. Nothing would grow after the lapse of so many centuries; besides, how did the Egyptian become possessed of a plant of the New World?

FARMYARD LIQUID MANURE: *W. W.* This is a very valuable aid to the cultivator, and worth considerably more than the solid excrements of the cows, whose richest manurial goodness has gone into butter and cheese. If you feed bullocks, their manure, solid and liquid, is of greater value than the cows'. There is no formula for its use, the quality of the manure-water depending in a great measure on the quantity of rain and other water that finds its way into the tank. If the drainage were urine only, it would bear—for plants in active growth—three or four times its bulk of water, and at that rate of dilution might be used on sandy soil once a fortnight in dry weather. Roses like the manure in either form, but it is best when applied in the mixed form, hence the good of soaking the manure-heap with the tank liquid.

FUNGUS ON ELM: *A. J.* Agaricus (Pleurotus) dryinus, Fries.

INDIA TEA GARDEN: *India.* We think your best course would be to advertise your needs in an Indian newspaper, or a newspaper circulating amongst Indian merchants here. We are not acquainted with any tea planter.

NAMES OF FRUITS: *W. L. B.* 1, not recognised; 2, Fearn's Pippin.—*S. Askey.* 1, Reinette du Canada; 2, Alfriston.—*H. R.* 4, Vicar of Winkfield; others not recognised.—*C.M.P.* Apple Gascoigne's Scarlet. —*G. Howes.* Pear Broom Park.—*C. Lazenby.* 1, Scarlet Nonpareil; 2, Court Pendu Plat.—*S. A.* 2, Hambledon Deux-ans; 4, Brabant Bellefleur; 5, Braddick's Nonpareil; 6, Warner's Kind. Others not recognised. Other are held over till next week.

NAMES OF PLANTS: *Adolescens.* F, Campanula Portenschlagiana; M, C. Scheuchzeri. — *J. H. Kelland.* 1, Eupatorium Weinmannianum; 2, E. album; 3, shoot fallen to pieces; 4 and 5, Salvia. —*T. W.* Vanda cærulea: good variety.—*C. B.* 1, Veronica Andersoni variety; 2, Eranthemum aureum reticulatum; 3, Duranta Plumieri; 4, Pellionia Daveauana.—*W. P.* should address the Editor, not the Publisher. His plant is Eupatorium Weinmannianum.

PEAR AND APPLE TREES: *C. E.* It would be better to plant new trees, as very old trees scarcely ever pay for their transplantation.

PHAIUS GRANDIFLORUS: *E. T.* The roots are rotten, and the soil in a sour, unhealthy condition. There are young wireworms present, but these are not the cause of the injury, which is due to mistakes in cultivation. Repot in sandy loam, peat, and a little leaf mould in well-drained pots, which should be small ones.

RHUBARB: *C. E.* It is very likely that the excessive heat, and the ammoniacal fumes of the fermenting materials, caused the decay of the crowns.

SHRUBS FOR SMOKEY GARDEN: *X.* Skimmia japonica (the oblata of the nurseries), Aucubas, Hollies, Osmanthus, Griselinia, Ilex microphylla, Ivies, Phyllyrea Vilmoriniana. For trees, Planes, Acer eriocarpum, Gingko biloba, Catalpa, Magnolia acuminata, and many others. We do not recommend Limes or Thorns for such a situation.

STRAWBERRY PLANTS: *T. B.* The plant is a very hardy one even in pots, and it is no wonder that they are looking in ill-health, if you have kept them covered thickly with old mats. Take away the mats—not all at once—but certainly the bulk of them, and allow them, after a few days, full exposure. If you have a frame, place the plants therein, plunged to the rims in tree leaves, and keep them fully exposed, except when it rains or snows heavily.

THE LATE MR. J. BERKELEY: *J. T.* No separate index is in existence, but his articles are scattered through our pages for many years past.

WOODLICE: *H.* If, as you say, the woodwork of your house is rotten, take it out with the woodlice it forms so convenient a refuge for, and put up new stages, &c. Get a frog or a toad or two, or trap the creatures with pieces of Carrot or Potato placed in small pots.

COMMUNICATIONS RECEIVED.—S. W.—E. J.—Professor W. Hillhouse.—N. E. B.—P. N.—A. D.—G. A.—B.—W. C. Unwin.—Enquirer (next week).—W. Horne.—T. Warner (next week).—J. H.—Secretary of Smithfield Club, with thanks.—R. P. (we do not name florists' flowers.)

SEEDLING & TRANSPLANTED FOREST TREES.

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50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15*s.* to £10 per 100, free on rail.
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J. STEVENS AND CO., 153, High Street, Battersea, S.W.

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Wm. Clibran & Son, Oldfield Nurseries, Altrincham
Also 10 and 12, Market Street, Manchester.

For Green and Black Fly, American Blight, Camellia Scale, Red Spider, Mealy Bug, Brown and White Scale, Worms, Wood Lice, &c.

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SAFE—ECONOMICAL—EFFECTUAL.

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Prepared only by
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May be had from B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, London; and from WILLIAM EDWARDS AND SON, 157, Queen Victoria Street, London.

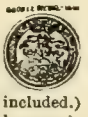
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COCOA-NUT FIBRE REFUSE (by Chubb's special process), sacks, 1*s.* 4*d.* each; 10 sacks, 12*s.* 6*d.*; 15 sacks, 17*s.* 6*d.*, 20 sacks, 20*s.*; 25 sacks, 24*s.*; 30 sacks, 27*s.*; 40 sacks, 35*s.*; 50 sacks, 40*s.*; Truck-load, loose, free on rail, 30*s.* Limited quantities of G., special quality, granulated in sacks only, 2*s.* 6*d.* each.
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And in 6*d.* and 1*s.* packets.

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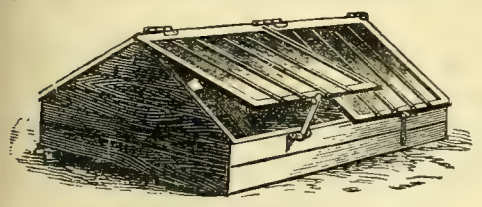
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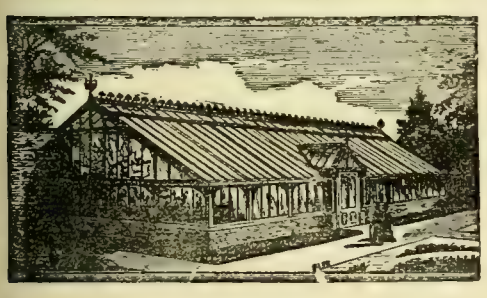
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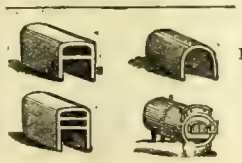
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The words "Frigi Domo" are registered as a Trade Mark, and in two recent actions of Benjamin Edgington, Limited, Plaintiffs, *v.* John Edgington & Co., Defendants, and Benjamin Edgington, Limited, Plaintiffs, *v.* Osman & Co., Defendants, judgments have been obtained against the Defendants for a Perpetual Injunction, restraining them from using the words "Frigi Domo" as a Trade Mark for any material intended to be used for Horticultural or similar purposes not manufactured by or for the Plaintiffs or selected by them, and the Defendants, John Edgington & Co., and Osman & Co., were ordered to pay Damages and Costs.

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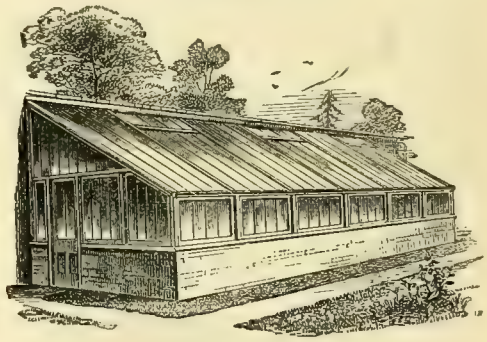
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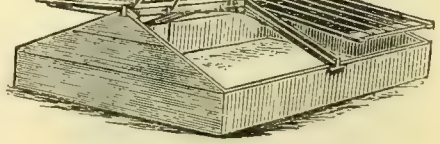
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10	„ ..	0	6	0	21	„ ..	0	11	6
11	„ ..	0	6	6	22	„ ..	0	12	0
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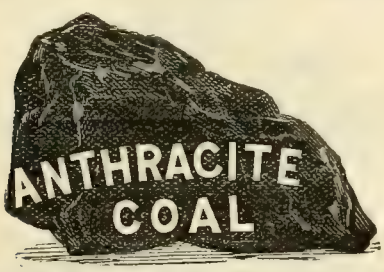
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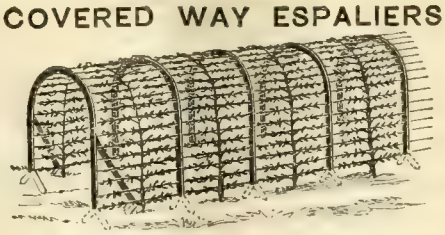
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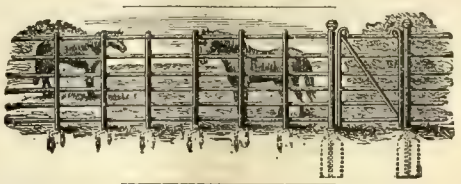
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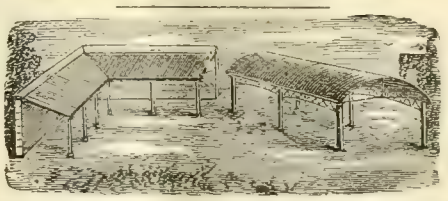
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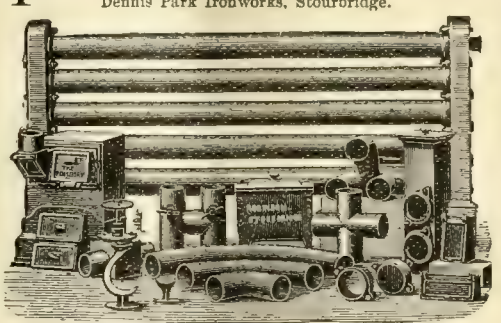


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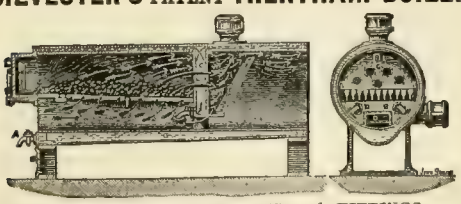
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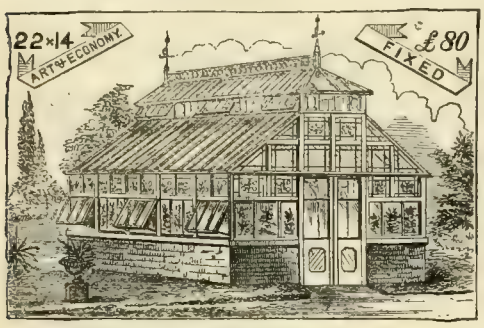


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Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 7, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2555.

No. 155.—Vol. VI. { Third Series. } SATURDAY, DECEMBER 14, 1889. { Regt. as a Newspaper. WITH SUPPLEMENT. } { PRICE 3d. Post-Free, 3½d. }

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NOTICE TO ADVERTISERS.—In consequence of the temporary absence of Mr. W. RICHARDS, *it is particularly requested that all Communications relating to Advertisements, and to the Financial Department of the "Gardeners' Chronicle," be addressed to the Publisher.*

All other Letters should be addressed as heretofore, to the Editor.

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FOR SALE, Old Numbers of GARDENERS' CHRONICLE, from 1844 (No. 1), to 1874 inclusive, half calf binding, in good condition. What cash offer?—A., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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GOOD LUCK.—CHINESE SACRED LILIES.—The Chinese Sacred Lily is the Asiatic's symbol of good luck. They can be seen in all the shops and houses of China and Japan. It is unquestionably of the Polyanth-Narciss tribe, but unlike the varieties of this group known in Europe, the Chinese Sacred Lily produces very large bulbs, which throw up 5 or 10 spikes of large and perfect waxy white blossoms, with a yellow centre, exquisitely perfumed. We offer Bulbs direct from the higher mountains of Northern China. Price, 1*s.* each, 10*s.* 6*d.* per dozen, carriage free.
DECORATED JAPANESE BOWLS for 1 Bulb, price 1*s.*; for 2 Bulbs, 2*s.*; for 3 Bulbs, 2*s.* 6*d.*; for 4 Bulbs, 3*s.* 6*d.*; for 6 Bulbs, 4*s.* 6*d.* Full directions for cultivation supplied to all purchasers.

CARTERS', ROYAL SEEDSMEN by Sealed Warrant, 237 and 238, High Holborn, London, W.C.

THE CHINESE SACRED LILY.
FLOWER OF THE GODS, or GOOD LUCK FLOWER. 3 fine Bulbs for 2*s.* 9*d.*; 12 fine Bulbs for 10*s.* 6*d.*, sent carriage paid.
Cultural Directions accompany the Bulbs.
BARR AND SON, 12, King Street, Covent Garden, London, W.C.

FOR SALE, a few hundred of good CHRISTMAS TREES, 4 to 10 feet 6 inches, extra good stuff, £5 per 100.—JAMES WOOD, Cambrian Nursery, Charlton Kings, Cheltenham.

LILIUM AURATUM.—Good, plump, sound Bulbs, 6*s.*, 9*s.*, 12*s.*, 18*s.*, and 24*s.* per dozen.
All other good LILIES at equally low prices.
Mr. WILLIAM BULL'S Establishment for New and Rare Plants, 536, King's Road, Chelsea, London, S.W.

Trade Offer of Small Palms.
WICETON has a very fine Stock of the leading kinds of PALMS for growing on. Prices very low for large quantities.
W. ICETON, Putney Park Lane, Putney, S.W.

FOR SALE, or EXCHANGE for FRUIT STOCKS or FRUIT TREES:—24 strong STEPHANOTIS ELVASTON variety, and 6 TABERNAMONTANA. Apply, TODDINGTON ORCHARD CO., Winchcomb, Gloucestershire.

J. W. BARNHAM (late of Squelch & Barnham) RECEIVES ON COMMISSION, GRAPES, TOMATOS, and other Choice FRUITS; also FLOWERS. His personal attention securing highest Market Prices. Account Sales daily, and cheques at option. Baskets and labels found.
Long Market, Covent Garden, W.C.

MESSRS. GREGORY AND EVANS, NURSERYMEN, Sidcup, and 285, 286, 287, 288, Flower Market, Covent Garden, London, W.C., are open to RECEIVE CONSIGNMENTS of Choice CUT FLOWERS in any quantity for their Commission Department. Boxes and Labels supplied.
Telegraph Address—"COMMISSION, SIDCUP."

CHOICE FLOWERS—CHOICE FRUIT.—Highest Market Prices guaranteed. Prompt cash.
HENRY RIDES, Covent Garden, W.C.

WANTED, HOLLIES, CUPRESSUS, Austrian PINE, BOX, American OAK, ARBOR VITÆ, Evergreen OAK, from 5 feet to 8 feet.—State number and price to G., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

WANTED, 6 Standard and 6 Dwarf or Pyramid MULBERRIES, in fruiting stage. State size and price, to
R. B. LAIRD AND SONS, Royal Winter Garden, Edinburgh.

WANTED, several large trained PEACHES, for Late and Early Houses. Apply, giving particulars of size, varieties, and price to
The LIVERPOOL HORTICULTURAL CO. (JOHN COWAN), Lim., The Vineyard and Nurseries, Garston, near Liverpool.

PARSNIPS WANTED.—Apply, McCORQUODALE AND CO., Carnoustie, N.B.

THE GARDEN ANNUAL, ALMANACK, and ADDRESS BOOK for 1889. The most Complete and Accurate Reference Book for the use of all Interested in Gardens yet published. The Alphabetical Lists of all Branches of the Horticultural Trade have been corrected up to the 10th of November. The Lists of Gardens and Country Seats (containing over 7900), have been very carefully and extensively revised, and are admitted to be the most complete ever published. Price 1*s.*; post-free 1*s.* 3*d.*—Of all Booksellers, Newsagents, Nurserymen and Seedsmen, or from the Publishing Office, 37, Southampton Street, Covent Garden, London, W.C.

SUTTON'S CYCLAMEN.—Sow now, Sutton's Prize, mixed, 5*s.* and 2*s.* 6*d.* per packet; Sutton's Vulcan, rich crimson, 5*s.* and 2*s.* 6*d.* per packet; Sutton's Giant White, 5*s.* and 2*s.* 6*d.* per packet. "A grander lot of plants it would be difficult to find. . . . Colours bright and well diversified, and beautiful foliage, which has been very much improved of late."—W. J., *Journal of Horticulture.*
SUTTON'S SEEDS GENUINE ONLY DIRECT FROM SUTTON AND SONS, The Queen's Seedsmen, READING.
(All Flower Seeds sent Post-free).

THORNS.—12 to 18 inches, 9*s.* per 1000; £40 per 100,000; 1½ to 2 feet, 11*s.* per 1000; £50 per 100,000; 2 to 2½ feet, 13*s.* per 1000; £60 per 100,000; 2 to 3 feet, 15*s.* per 1000; 3 to 4 feet, 18*s.* 6*d.* per 1000.
GARLIES MITCHELL, Nurseryman, Stranraer.

5,000 SPRUCE (Christmas Trees), 2 feet, 8*s.* per 100, 70*s.* per 1000.
HENRY JOYCE, South End Nurseries, Boston.

LARCH, 1 to 1½ feet, 12*s.*; 1½ to 2 feet, 15*s.*; 1½ to 2½ feet, 17*s.*; 2-yr. 2-yr., 1½ to 2½ feet, 20*s.* per 1000. QUICKWOOD, 1 to 1½ feet, 10*s.*; 1½ to 2 feet, 12*s.*; 2 to 3 feet, 15*s.*; extra strong, 20*s.* per 1000. The above plants are all well rooted and good leads.—F. BELL, Nurseries, Easingwold.

SOLANUMS.—About 240 very fine well berried Plants, 4*s.* to 7*s.* 6*d.* per dozen.
R. B. WOOD, Horeham Manor, Horeham Road, Sussex.

RUMSEY'S ROSES are strong, healthy, and well-rooted plants.
Priced Descriptive CATALOGUE free by Post.
WM. RUMSEY, Joyning's Nurseries, Waltham Cross, N.

TO SELL, for CASH, 500 SPRUCE FIR, for beautiful Christmas Trees, 4 to 8 feet, well furnished.
SLEIGHTHOLM, Burntwood Gardens, Barnsley.

50,000 GREEN EUONYMUS, all good shape, 8 inches to 3 feet high, 15*s.* to £10 per 100, free on rail.
J. J. CLARK, Goldstone Farm, Brighton.

QUICKS—QUICKS—QUICKS. Strong transplanted Quicks, large quantity. 10*s.*, 12*s.*, and 15*s.* per 1000. Samples on application.
JOHN PERKINS AND SON, 52, Market Square, Northampton.

S. SPOONER AND SONS have a large quantity of HAZEL PEARS, 3-yr. old, to offer, fine stuff. Price per 100 or 1000 on application.
Hounslow Nurseries, Middlesex.

Seakale.
CHARLES TURNER can supply good strong crowns for forcing. Sample and price on application.
The Royal Nurseries, Slough.

SHARPE'S VICTOR.—Best first early Potato known, very true stock, 2*s.* 9*d.* per 14 lb., bag included, for cash with order.
R. CRUST AND SON, Seed Potato Farms, Spalding.

The Best Present for a Gardener.
VINES and VINE CULTURE. The most complete and exhaustive Treatise on Grapes and their Culture ever published.
New Edition.
Price 5*s.*, post-free 5*s.* 6*d.*
A. F. BARRON, Royal Horticultural Society, Chiswick.

THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Monday Next, and four following days.

ABSOLUTE SALE.

In Bankruptcy.—*Re* Maurice Young.

THE MILFORD NURSERIES, GODALMING

HIGHLY IMPORTANT SALE

of the First Portion of the exceptionally choice and remarkably well-grown

NURSERY STOCK,

extending over several acres of ground, and comprising the healthiest Stock that has ever come under the hammer, affording to Gentlemen, the Trade, and Large Buyers, an unprecedented opportunity for securing unlimited quantities of SHRUBS and TREES in the best possible condition for transplanting.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL the above by AUCTION, on the Premises, the Milford Nurseries, Godalming, Surrey, on MONDAY NEXT December 16, and four following days, at 12 o'Clock precisely each day.

The stock comprises about 32,000 CONIFERS and EVERGREENS, 6,000 Young's GOLDEN JUNIPERS, 5,000 ORNAMENTAL BORDER SHRUBS beautifully furnished specimens, 5,000 LAURELS, 20,000 STANDARD ORNAMENTAL TREES, fine specimens, Young's WEEPING BIRCH and WEEPING ELMS, 103,000 FOREST TREES, &c.

The Stock may be viewed any day prior to the Sale. Catalogues may be had on the Premises, of W. LEE, Esq., Trustee, 143½ High Street, Guildford; and of the Auctioneers, 67 and 68, Cheapside, E.C.

N.B.—In the event of severe frost, a reasonable time will be allowed purchasers for the removal of the Stock.

Wednesday Next.

Highly important SALE of LILIES and other Bulbs.

20,000 LILIUM AURATUM from Japan, 21,000 African TUBEROSES, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 18, at half-past 12 o'Clock, 20,000 exceptionally fine BULBS of LILIUM AURATUM, just received from Japan, including a great number of unusually large roots.

21,000 African Tuberoses (in cases as received)
5,000 White and Blue Roman, Double Pink, and Italian Hyacinths
1,000 Lilium Harrisii
1,000 Lilium longiflorum
1,000 Lilium album Krætzeri, Melpomene, and rubrum cruentum
1,000 Begonias from Belgium; also Tigridias.

A choice assortment of Greenhouse and Stove Ferns, &c.

On view morning of Sale, and Catalogues had.

Wednesday Next.

IMPORTANT to the TRADE.

20,000 LILIUM AURATUM, in exceptionally fine condition, and including a great number of unusually large Roots, just received from Japan. They will be Sold in Lots of 6, 10, 50, 100, and 500 Bulbs each.

21,000 AFRICAN TUBEROSES, to be offered in cases as received.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, December 18, at half-past 12 o'Clock.

On view morning of Sale, and Catalogues had.

Friday Next.

IMPORTANT SALE of ESTABLISHED ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Room, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, December 20, at 12.30 o'Clock, a large quantity of well-grown ESTABLISHED ORCHIDS, consisting of Odontoglossums, Cattleyas, Dendrobiums, Lælias, Cypripediums, and many other species. Also about 100 lots of established CATTLEYA MOSSIÆ and other ORCHIDS, all unflowered, from Mr. G. T. White, for Sale without reserve.

On view morning of Sale, and Catalogues had.

Friday Next.

ORCHIDS IN FLOWER for CHRISTMAS DECORATION.

MESSRS. PROTHEROE AND MORRIS desire to announce that they will reserve a number of Lots in their Catalogue for NEXT FRIDAY'S SALE for ORCHIDS in FLOWER and BUD. Lots intended to be printed in the Catalogue should reach the Office not later than Monday next, but entries can be made also on the day of Sale.

On view morning of Sale, and Catalogues had.

Wednesday and Saturday Next, December 18 and 21.

Hardy Ornamental SHRUBS and CONIFERS, consisting of Laurels, Conifers, Privet, Berberis, Junipers, Sweet Brier, &c., in fine condition; a large number of Standard and Dwarf ROSES, including many of the best known sorts; CARNATIONS, PICOTEES, PINKS, STRAWBERRY PLANTS, LYCHNIS, and other BORDER PLANTS; Pyramid and Dwarf-trained FRUIT TREES, comprising some fine sorts of Plums, Peaches, Apples, Pears, Nectarines, &c.; SPIRÆA JAPONICA, LILY of the VALLEY Crowns for Forcing, DIELYTRA SPECTABILE, also thousands of choice named LILIUMS, GLADIOLI, ANEMONES, HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and a large variety of other DUTCH BULBS, lotted to suit all Buyers.

MR. J. C. STEVENS will SELL the above by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, on WEDNESDAY and SATURDAY NEXT, December 18 and 21, at half-past 12 o'Clock precisely each day.

On view mornings of Sale, and Catalogues had.

Thursday Next, December 19.

EXTENSIVE IMPORTATIONS from JAPAN.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Rooms, 38, King Street, Covent Garden, W.C., on THURSDAY NEXT, December 19, at half-past 12 o'Clock precisely, EXTENSIVE IMPORTATIONS from JAPAN, comprising 10,000 grand Bulbs of Lilium auratum, L. auratum varieties, L. longiflorum, L. Krameri, L. speciosum rubrum, L. coridion, L. cordifolium, &c. Also AMARYLLIS and TUBEROSES, from the Cape; a fine collection of Home-grown LILIES, Hardy Japanese IRIS, 10,000 Berlin LILY of the VALLEY Crowns, SPIRÆA JAPONICA, Hardy DAFFODILS, HYACINTHS, TULIPS, CROCUSES, NARCISSUS, and other DUTCH BULBS, &c.

On view morning of Sale, and Catalogues had.

The Nurseries, West Wickham, Kent.

UNDER BILL OF SALE.

GREAT CLEARANCE SALE OF ENTIRE STOCK, WITHOUT RESERVE.

MR. W. LEVENS will SELL by AUCTION, on MONDAY, December 16, 1889, and three following days, at 11 for 12 o'Clock each day, the whole of the STOCK on the above NURSERIES, comprising 40,000 Conifers, 3000 Border and Specimen Shrubs, consisting of Wellingtonias, Thuiopsis borealis, Cupressus Lawsoniana, Golden Yews, Golden Hollies, Cupressus Lawsoniana erecta viridis, Thuia aurea, Aucubas, Piceas, Thuia Lobbi, Retinospora, Araucaria erecta, &c.; 1000 Gold and Silver Hollies, 5000 Thuia Lobbi, 200 Aucubas, 3000 Portugal Laurels, 5000 Cupressus Lawsoniana, 2000 Green Hollies, 6000 Laurels rotundifolia, 300 English Yews, 1000 Berberis Darwinii, 5000 Pinus cembra, Pinus excelsior, austriaca, &c.; 20,000 Fruit Trees, comprising Apples, Pears, Plums, Cherries, Nectarines, Peaches, &c.; 10,000 Limes, Laburnums, Mountain Ash, Plane, Poplar, Beech, and other Forest Trees; 20,000 Manetti and Brier Stocks, fit for immediate working; 10,000 small Conifers, 3000 Deciduous Shrubs, Standard and Dwarf Roses; Orchids, Stove and Greenhouse Plants; Greenhouses, Pigstyes, Frames, Garden Lights, Water Tanks, Implements, Vans, Carts, Harness, a Boar Pig, 2 Breeding Sows, a Sow with 10 Pigs, a quantity of Fowls, 3 valuable Horses, and numerous effects.

N.B.—West Wickham Station is on the South-Eastern Railway, to which there are frequent trains from Charing Cross, Waterloo, Cannon Street, and London Bridge.

May be viewed any day prior to Sale. Catalogues obtained of the Auctioneer, Railway Bridge, Beckenham.

Mount View, Sheffield.

The VALUABLE COLLECTION of upwards of 1500 ESTABLISHED ORCHIDS formed by the late David Ward, Esq., J.P. The plants are in the best possible condition, and the collection is one of the finest in the district, and includes Specimens from several well-known Collections.

MESSRS. WILLIAM BUSH AND SON, respectfully give notice that they are favoured with instructions from the executors to SELL by AUCTION on the Premises as above, about the MIDDLE of JANUARY NEXT.

Further particulars will be given in future advertisements. Catalogues are in preparation. May be viewed by order from the Auctioneers. Auctioneers' Offices and Sale Rooms, 2 and 3, East Parade, Sheffield.

North of England.

FOR SALE, GENERAL NURSERY BUSINESS, established twenty-five years, doing with a large connection; 10 acres of Land well stocked, 7 Greenhouses, Foreman's House, &c.

MESSRS. PROTHEROE AND MORRIS are instructed to Dispose of the above Business on very advantageous terms, and will be pleased to send particulars on application.

67 and 68, Cheapside, London.

Florida.

SMALL ESTATE for SALE.

Apply, CURATOR, Botanic Garden, Glasgow.

FOR SALE, FREEHOLD LAND, for Nurserymen, 13 miles out.

Write, SEARLE AND HALTON, Tottenham.

East Retford, Notts.

TO BE SOLD, by Private Treaty (at once), a first-class FREEHOLD NURSERY (Glass), consisting of 6632 square feet of Glass, comprising 6 Span Houses, and 3 Lean-to, all thoroughly heated with expansion jointed Pipes and 3 Boilers, in good going order. Retford is situated within easy distance of Sheffield, Doncaster, Leeds, Bradford, Huddersfield, Lincoln, Gainsboro', Manchester, and other large towns, all on the main lines of the G. N. R. and M. S. and L. Railways.

The STOCK can be PURCHASED by VALUATION. Part purchase money can remain on.

Good reason for Selling, and the fullest inquiry invited.

Apply to F. W. HODSON, Groveleigh Nurseries, Retford.

SEEDSMAN, FLORIST, JOBBING BUSINESS for SALE. Three Glass Houses, Heated Pits, Stock, &c., £80.—WILLIAMS, Parkstone, Dorset.

TO BE SOLD, a FARM, leased for a term, with large Asparagus bed, yielding well, besides good Rabbit Warren, with other Farm Land; also two newly built semi-detached VILLAS, 5 miles from Southport. Good investment for Gentlemen with capital.

For particulars, address FARM, care of Lee & Nightingale, Liverpool.

FLORIST and NURSERY BUSINESS to be SOLD as a Going Concern. Price £100, or valuation. Greenhouses well heated, and about half an acre of Ground. Nominal rent, and situated within 2 miles of Covent Garden.

Apply, W. CALLINGHAM, Prince's Square Nursery, Kennington, S.E.

TO LET, a FRUIT FARM, from 3 to 30 acres, in Sussex. Landlord will prepare and plant quarter of the ground or more—also build suitable residence. Close to important main line junction, L. B. & S. C. Railway. Grand soil and situation. Lease with purchasing clause.

Apply, MARSHALL BROS. AND CO., Barnham Nursery, Post Town, Bognor.

TO LET, a SMALL NURSERY, seven Greenhouses well heated, good Dwelling house. Rent £45. Low price for stock.

Apply to A. B., 161, High Road, Lee, London, S.E.

TO BE LET, on Lease, about 2 acres of productive NURSERY LAND, with Stabling, Out-buildings, and about 13,500 super. feet of Glass; about five minutes' from Waltham Cross Station, Great Eastern Railway.

Apply to E. A. H., Queen Anne's Lodge, Waltham Cross, N.

To Gardeners, &c.

TO LET, a nice compact FRUIT FARM and MARKET GARDEN, consisting of 5 acres, at Sherburn in Elmet, half an hour's ride by Rail to Leeds. Good Dwelling-house, consisting of Dining, Drawing, Breakfast Room, and Kitchen, Bath-room, Pantry, Coal-house, &c., on ground floor; 4 Bed-rooms and Servants-room, Wash-house, Coach-house, 2-stall Stable, Pigstyes, Poultry-houses, Greenhouse, Pits, Frames, large Orchard, scores of Apple, Plum, and Pear Trees; about 1600 Gooseberry and Currant Trees; an acre of Strawberries; nearly an acre of Raspberries in good bearing condition. To a steady respectable person with good references, the proprietor would let at a very reasonable rent. Apply to WILLIAM TAYLOR, Saville House, Princes Square, Harrogate

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense stock, to which they are constantly adding, and all are offered at the lowest possible prices. LISTS with Prices and particulars post-free on application to the Company,

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

Notice to the Trade.

HURST AND SON regret to have to announce that they are compelled to WITHDRAW RANUNCULUS LYALLI from their List of Novelties, having found that the Seed, although new, cannot be got to germinate.

Seed Warehouse, 152, Houndsditch, London, E.

FLETCHER BROS., have a large Stock of Standard FRUIT TREES to offer. Price per 100 or 1000 on application.

The Nurseries, Ottershaw, Chertsey.

Plant Now for Spring-flowering.

CLEARANCE SALE OF BULBS at Reduced Prices.

HYACINTHS, TULIPS, DAFFODILS, NARCISSI, CROCUS SNOWDROPS, CHIONODOXA, &c., &c.

Priced LIST free on application.

BARR AND SON, 12, King Street, Covent Garden, W.C.

PALMS.—Leading decorative sorts in many sizes, great quantities, and in finest health.

FRANCIS R. KINGHORN, Nurseryman, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

STRAWBERRIES.—Leading kinds, in 3½-inch pots, for immediate Planting or Potting on for Forcing. Send for LIST.

FRANCIS R. KINGHORN, Sheen Nurseries, Richmond, Surrey; and Flower Market, Covent Garden, W.C.

FERNS—FERNS.—Trade offer.—Great Annual Sale of Surplus Stock, cheap; 100,000 to select from, in 20 most saleable sorts; 10s. and 12s. per 100. Adiantums, Pteris, &c. Adiantum cuneatum and Pteris Mayii, 12s. per 100.

SMITH, The London Fern Nurseries, Loughboro' Road, Brixton.

CHRYSANTHEMUMS.—Strong Cuttings of selected varieties of 1887 and 1888, and best Standard Exhibition sorts, 2s. 6d. per dozen, 15s. per 100, post-free. New varieties of 1889, prices on application.—JAMES HODGES, Springfield Nursery, King's Heath, Birmingham.

SEAKALE for FORCING, superior selected Crowns, 80s. per 1000; under 500, 9s. per 100. Orders to be accompanied by Cheque or Post-office Order.—ALFRED ATWOOD, Grower, 14, Lavender Terrace, Battersea, S.W.

CHRYSANTHEMUMS, best sorts true to name, strong Cuttings now ready from 1s. 6d. per dozen, 10s. per 100. Many of the best prizes in the country are taken by my customers. For Price of New Japanese Incurved, &c., see CATALOGUE, 2 stamps, of W. ETHERINGTON, Chrysanthemum Grower, Swanscombe, Kent.

TRADE OFFER.

RHODODENDRON PONTICUM, bushy, 1½ to 2 feet.
,, ,, ,, 12 to 18 inches.
,, stock, strong.
HOLLY, stock, strong.
Portugal LAUREL, bushy, 1½ to 2½ feet.
Common LAUREL, bushy, 5 to 6 feet; do., 3 to 4 feet.
ABIES DOUGLASSII, 12 to 18 inches.

Apply to GRAY AND SONS, Brox Nursery, Chertsey, Surrey.

"Now is the Time to Plant Trees."

ROBERT NEAL begs to call the attention of Gentlemen, Local Boards, Builders, and others who intend planting this season, to his large and varied stock of Shrubs, Standard, Ornamental, and FOREST TREES, FRUIT TREES, ROSES, CLIMBING PLANTS, &c., which, being well transplanted, are in fine condition for removal, and having been grown in the vicinity of London, are especially adapted for town and street plantings. Special quotations for large quantities, delivery free within a radius of six miles of the nursery. Inspection of the Stock solicited. CATALOGUES free on application. Also to offer extra fine forcing SEAKALE and RHUBARB.

The Nurseries, Trinity Road, Wandsworth Common.

NEW CHRYSANTHEMUMS.
Awarded Silver Medal and twenty Certificates.
The finest collection in Europe.
MRS. S. COLEMAN, awarded six First-class Certificates; golden-bronze sport, shaded rose; from Princess of Wales. 5s. each, 3 for 12s. 6d.
ADA SPAULDING, the largest incurved variety ever raised; colour deep rose, with lighter centre. Won Harrison and four other Cups and Prizes in America as the best seedling. 5s. each.
JOHN LAMBERT, sport from Lord Alcester; colour, creamy-yellow, shaded rose; distinct, and superior to Emily Dale or Golden Queen in build and colour; considered the best of the Queen family. 3s. 6d. each.
Orders executed in rotation early in March. I hold the stock of these three grand novelties; no exhibitor can win in future without them.
CATALOGUE of over 100 splendid novelties and general stock in Press, price 6d., gratis to customers. Culture, by E. Molyneux, W. Tunnington, and C. Orchard.
ROBERT OWEN, Floral Nursery, Maidenhead.

FOREST TREES.—Ash, 1 to 2 feet, 13s. per 1000; do., 2 to 3 feet, 17s. per 1000; Beech, 1½ foot, 14s. per 1000; 2 feet, 16s.; 2½ feet, 18s.; 2½ to 3 feet, 20s.; 3 to 4 feet, 24s. per 1000; Horse Chestnuts, 2 feet, 20s. per 1000; Sweet Chestnuts, 1½ to 2½ feet, 18s. per 1000; 3 to 4 feet, 24s. per 1000; Larch, 15 to 24 inches, 18s. per 1000; 1½ to 2 feet, 20s. per 1000; 2 to 2½ feet, 26s. per 1000; Spruce Fir, 1 to 1½ feet, 12s. per 1000; 1½ to 2 feet, 14s.; 2½ to 3 feet, 16s. per 1000; Scotch Fir, 2-yr. transplanted, 12s. per 1000; 2 to 2½ feet, 15s.; 2½ to 3 feet, 20s. per 1000; Hazels, 1½ feet, 20s. per 1000; Pinus austriaca, 2-yr., 3-yr. transplanted, 15s. per 1000; Black Thorns, 2 feet, 22s. per 1000; Sycamore, 1 to 2 feet, 13s. per 1000; 2 to 2½ feet, 16s. per 1000; 7 to 8 feet, fine, 12s. per 100; Elm, Wych, 5 to 6 feet, 8s. per 100.
GARLIES MITCHELL, Nurseryman, Stranraer.

CARNATION, GLOIRE DE NANCY.—We are sending out our own strain, the grandest white, clove-scented flower in cultivation; flowers from 6 to 9 inches round; for cutting, border, or conservatory decorations, it has no equal; good strong rooted layers, ready to pot up or plant out, 30s. for 100, 15s. for 50, 8s. for 25. We have also a grand lot of the true OLD RED CLOVE layers (we never had better) at 20s. for 100, 10s. for 50, 6s. for 25; also a fine lot of the COUNTESS, bright terra cotta, and ROSY MORN, striped pink, at 20s. for 100. And a grand lot of double white PRIMULA, in 5-inch pots, in flower and bud, at 10s. per doz.—COLLINS AND SONS, Cumberland Park Nurseries, Willesden Junction, W.

Special Offer of Large Well-grown Evergreens and CONIFERS, frequently transplanted, standing singly, and every plant a specimen, offered by
WILLIAM WOOD AND SON,
The Nurseries, Maresfield, Uckfield, Sussex.
Single plants supplied if required at the dozen price.

Coniferæ.
ABIES DOUGLASII, 5 to 6 ft., 18s.; 6 to 7 ft., 24s. per dozen.
,, ,, GLAUCA, very fine, 5 to 6 feet, 24s. per dozen.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15s.; 5 to 6 feet, 18s.; 6 to 7 feet, 24s. per dozen.
CUPRESSUS LAWSONIANA, 6 feet, 18s.; 6 to 7 feet, 24s.; 7 to 8 feet, 30s.; 8 to 10 feet, 40s. per dozen.
,, LAWSONIANA ERECTA VIRIDIS, extra fine, 4 feet, 42s.; 5 feet, 60s. per dozen.
PICEA PINSAPO, 2½ to 3 feet, 30s.; 3 to 4 feet, 42s. per dozen.
,, PECTINATA (Silver Fir), 3 to 4 feet, 18s.; 4 to 5 feet, 22s. per dozen.
PINUS AUSTRIACA, 3 to 4 feet, 20s.; 4 to 5 feet, 28s. per doz.
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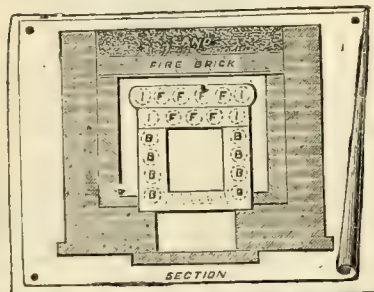
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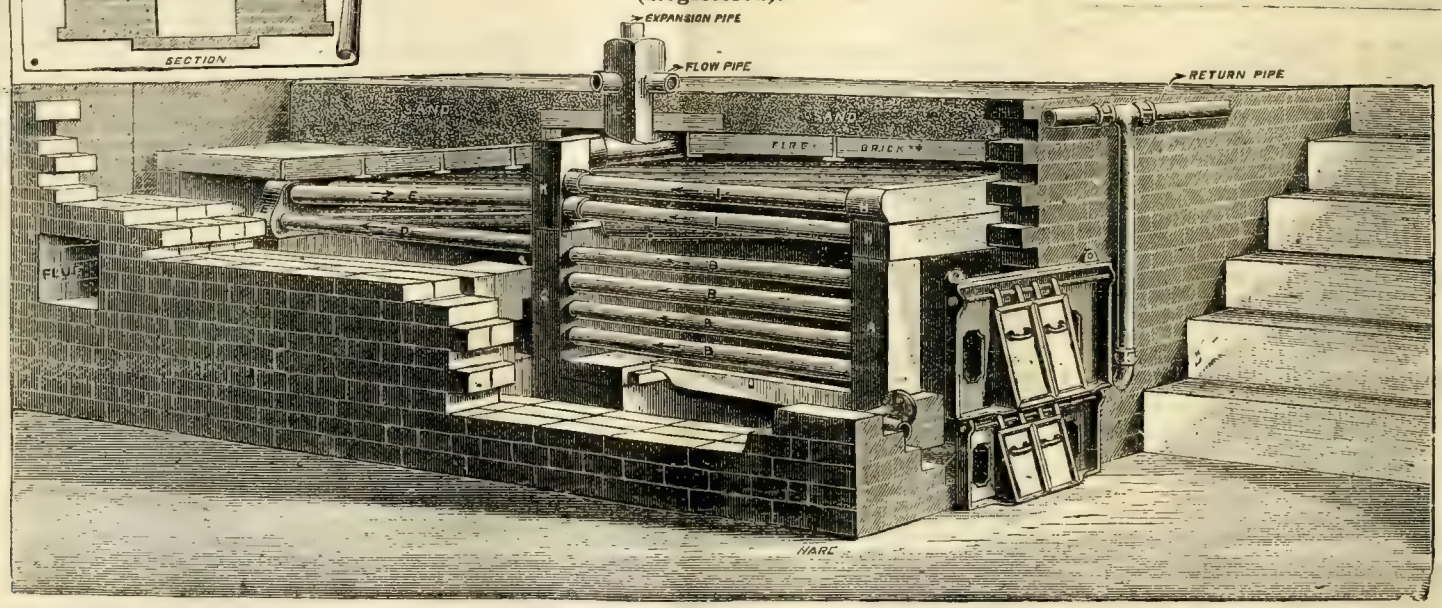


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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 14, 1889.

THE JARDIN DES PLANTES.

THE streets surrounding the Jardin des Plantes of Paris are appropriately named since the widest end of the grounds, parallel with the Seine, is divided from the river by the Quai St. Bernard, while the three other streets surrounding the enclosure are the Rues, Cuvier Geoffroy St. Hilaire, and de Buffon. Entering by the walk which leads through the zoological department, the once noted collection of Pear trees, which Mr. Rivers could now put in the shade, is on the right hand, and much cramped for space. On the left, is a menagerie, now very slenderly stocked, the collection having been much thinned, it is said, during the siege of Paris.

Strolling on towards the maze, which tops a mound near Bernard de Jussieu's Cedar of Lebanon, we noted the names and dimensions of some trees which are dotted about by the sides of the walks, including Paulownia imperialis, a tree which has reached 6 feet in circumference since its introduction from Japan in 1834. Paulownia imperialis and Catalpa are both largely used now in the decoration of the boulevards and open spaces of Paris, their large leaves making a very handsome appearance.

Further on we passed several offices, and then a large building, part museum and part house, where Cuvier resided, with the museums of the Jardin des Plantes, those of anatomy, botany, mineralogy and zoology, close at elbow or within a stone's throw. So we stand here on classic ground, and if the Jardin des Plantes is by no means so well kept and planted as our own public gardens, if it is poverty-stricken compared with Kew, it should nevertheless be stated that the authorities have made good use of the funds at their disposal. The lecturers in the several departments have always been men of recognised ability and eminence, worthy of the great naturalists who preceded them.

Visiting the "Violet City," as Lord Beaconsfield named it, after its beautiful predecessor, Athens, during the great exhibition, when for several months Paris was *en fête*, and exquisitely upholstered and adorned, it seemed to us unfortunate that a fractional percentage of the money spent on public buildings since the Commune—the Hôtel de Ville alone costing one and a half million sterling—had not been devoted to the purposes of the Jardin des Plantes. Something will be done perhaps presently for the better endowment of the educational department of this famous institution, and for the better support of the botanic garden and the other grounds.

The Cedar of Lebanon was planted by Jussieu, in 1735. It is a fine spreading tree, 80 feet or 90 feet high, with a tall trunk measuring about 11 feet in circumference at 5 feet from the ground, so it has made good use of its time since our English botanist Collinson gave it to Jussieu a hundred and fifty-four years' ago. A Cedar of Lebanon attains its best in good earth in fewer years than the above, and several of our greatest living men, or those of recent times, are, or were, old enough to have planted a seedling Cedar in their boyhood and to have seen it reach its highest beauty. Jussieu's tree, however, never reached perfection, having been injured by the near neighbourhood of other trees. It is sad to observe how often trees are injured by similar neglect, and a Cedar of Lebanon is so easily spoiled. A little too much shade in the years of its earlier growth, or a little too heavy a load of snow on its spreading boughs in the period of maturity, and the mischief is done. You have before you only a wreck, and a reminder of those beautiful proportions which the tree might have attained with fair treatment.

This interesting relic—for a tree which never wore its full complement of branches may be considered, perhaps, as a relic of what it might have been—stands on higher ground than the general level. Beneath it were seated a pair of those ever-present lovers who affect gardens all the world over, and have done so since the fall of our mother Eve. Above the tree rises an apparently artificial round knoll, planted many years ago as a maze, and amazing now for ugliness. The Yew, the fences of the walks, have become so hollow below that they offer no defence or puzzle, and the statue of Mercury at the top can be reached without the visitor experiencing any of the anticipated difficulties of a maze. When the income here improves, this abomination will, no doubt, be replaced by shrubs, or some other adornment worthy of the site.

Other trees in the grounds are a beautiful western Plane, Ailanthus glandulosa, from Japan, 1751, and an Acacia-like tree with pods 15 inches long. Other specimens are Tilia argentea, an ornamental and well-grown tree with rough bark; Negundo fraxinifolium, and a handsome Horse Chestnut, which may be called the Plane of Paris; the latter tree being the destined ornament of London, while the most popular tree of the Boulevards and open spaces of Paris is the Horse Chestnut. A notable tree in the Jardin des Plantes is Magnolia macrophylla, having pale, large leaves, 15 inches long; and near it is a good specimen of the Maidenhair tree, named here Ginkgo, but often called by the name of the English botanist, Mr. Salisbury.

The botanic garden consists of an oblong space, reaching from one end of the enclosure to the opposite extremity on the banks of the Seine. The larger portion of the space is devoted to the use of the School of Botany, and contains a large collection always noted for being correctly named. We were attracted to the beds nearest to the river containing useful plants of all kinds, agricultural, horticultural, and medicinal. The cereals are prominent here, from Wheat and Barley to Sorghums, Millets, and the lesser tribes cultivated, for their seeds, including Setaria germanica, a Millet common in London seed shops. An interesting plant here is the Dolichos, called in Arabic Lablab, the Arabic name for Convolvulus, a plant to which, however, it is not allied, and which it only resembles in its twining habit. It is described here as a bean of tropical Africa. It resembles the Scarlet Runner, except in its white blossoms and stouter habit. Is it through cross-breeding that one often meets with the so-called Scarlet Runner Phaseolus, having white blossoms, larger and longer pods and stouter habit than the Scarlet Runners of years since?

Possibly one of the varieties of Phaseolus may have been used for the purpose just suggested, as, for instance, one of the common Haricots, of which there are here Phaseolus vulgaris, a plant of 10 feet high, with pods 7 inches long; a dwarf variety with small pods, and P. multiflorus, a Spanish variety 10 feet high, with both white and pink flowers, and pods 4 or 5 inches long.

The Chicory is here, and all sorts of Cabbages, Turnips, and Gourds. The plant we call a "Swede" is labelled here Turnip. The Ecbalium elaterium, or squirting Cucumber, is represented, and is no doubt looked upon with interest by those practitioners who have been so unfortunate as to kill their patients by its use, being, as it is, a purgative of kill or cure character. Among the ornaments of this department, and of the broad end of the open space fronting the museums, are some handsome rows and avenues of Horse Chestnuts and Planes, some old Acacias, a number of Orange trees in tubs, and a very fine pair of dwarf Fan Palms, older than the time of Louis XIV., and alone worth the trouble of that short trip on the Seine, which will transport a visitor from the Eiffel Tower to the gates of the Jardin des Plantes. *H. E.*

New or Noteworthy Plants.

LIPARIS BOWKERI, *Harvey.*

This South African Orchid is certainly not a florists flower, but a pretty botanical curiosity, and as it has, so far as I know, not flowered under cultivation, until it flowered with me recently, it is worth recording, especially as its colour is nowhere definitely stated. The plant has fleshy pseudobulbs, 2 or 3 inches in height, clad with several broadly ovate, acute leaves, the upper ones being the larger, and from these proceed the 4—5 inch high scapes with distant bracts on the lower part, without flowers, and similar bracts at the base of the four or five flowers with which the upper half of the scape is furnished. The flowers are nearly 1 inch across, the upper sepal narrow, and with the edges folded back, the two lower sepals broadly falcate and deflexed, the petals thread-like, the labellum roundish in the front and furnished with a concave claw which curves up towards the sides of the column. The flower is pale, yellowish-green, except the lip, which is emerald-green, and the whole of it has a frosted, or finely tesselated appearance. It is a very free grower in cold frame or coolhouse. *James O'Brien.*

Stapelia Desmetiana,* *n. sp.*

This fine species has been in cultivation for several years under different names, but has never been described. I do not know who first introduced the plant, but it was in cultivatlon in 1874, and in 1878 Sir H. Barkly also sent it to Kew. It has been collected by Professor MacOwan on the banks of the Little Fish River, near Somerset East (No. 2249); and by Mr. Baur, at Shiloh, Oxkraal Mountains (No. 783). *N. E. Brown, Herbarium, Kew.*

* *Stapelia Desmetiana*, n. sp, N. E. Br.—Stems 6—9 inches high, an inch or more thick, softly pubescent, green, becoming pale ash coloured with age, four-angled, angles much compressed, somewhat sinuate dentate, leaf rudiments 1 line long, erect when green, incurved when withered. Cymes subsessile near the base of the younger stems, usually producing 3—10 or more flowers. Pedicels about 1 inch long, 2 inches thick, softly pubescent. Calyx lobes 4—7 lines long, 1½ lines broad, lanceolate acute, clothed with a soft spreading pubescence externally, and with a short closely appressed pubescence internally. Buds ovate acuminate. Corolla 4½—5½ inches in diameter, pubescent and pale green or purplish on the back; the inside or face of the corolla is rugose, purple-red, marked from the centre to rather more than half way up the lobes with numerous transverse pale yellowish lines, those on the lobes rather the broadest, the entire surface even to the tips (except in var. apicalis) is clothed with rather long (3—3½ lines), straight, pale purple hairs, which all point towards the tips of the lobes; margins distichously fringed with longer whitish hairs. Outer coronal segments oblong, 3 lines long, 1½ line broad, concave down the face, apex slightly recurved, very obtuse or sub-retuse, with a minute middle tooth; pale yellow, with a broad dull purple central stripe, with or without some dots along the margins; sometimes (though rarely) the margins and basal two-thirds are dull purple, with only the apical area yellow. Inner coronal segments dark purple-brown, paler at the tips, broadly winged behind, 3½—4 lines long; the tips are triquetrous-subulate, erect and straight, or slightly recurving, sometimes hooked at the apex; the broad wings are adnate throughout their length, or free, with the apex truncate or oblique, minutely erose-dentate, or with one or two well marked teeth. Odour fœtid. The flower remains open from four to six days.
Var. apicalis, N. E. Br.—Lobes of the corolla without hairs on the face at the apical portions.

Schools of Horticulture.

We have sometimes heard the opinion expressed that such institutions are valueless, as fostering theoretical, rather than practical gardening, and further, that there is no opening for highly trained gardeners, as employers prefer to secure the services of less highly educated men at lower rates than could be offered to a graduate. We desire to give all due consideration to these statements, but at the same time to put on record from the experience of the National School of Horticulture at Versailles, some facts which are of another order.

The *Revue Horticole* has devoted this year a series of articles to the history and description of this school, which is under the direction of M. Hardy, and the work of which, according to our contemporary, is on a level with what was expected of it at its institution. One great object was to educate and send out men capable of enhancing the cultural resources and territorial riches of the nation, by combating ignorance and routine in the country districts, which are so obstructive to progress and so difficult to uproot.

Since its opening, 408 pupils have been received, and the real test of efficiency may be sought in the positions these young men have obtained for themselves. We find, according to our contemporary, that among the old pupils are to be counted at the present time:—Three directors of colonial botanic gardens, two of French botanic gardens, four heads of departments, or foremen, in the Jardin des Plantes at Paris; twelve head gardeners of municipalities, two professors of horticulture, two superintendents of national agricultural establishments, ten head gardeners in practical schools of agriculture, and five landscape gardeners. In Italy there are five of the old students occupying responsible positions; in Austria, two; in Russia, one; in Syria, four; in Kashmir, one; in Japan, two; in Panama, two; in the Argentine Republic, one; in Chile, two; in Uruguay, one; in Portugal, one. The remainder are in private situations. We think these figures show that an institution of this character not only brings good men to the front, but that it is the means of providing them with situations commensurate with their acquirements.

ODONTOGLOSSUM PESCATOREI.

(Ornate-lipped Variety.)

Several handsome varieties of Odontoglossum Pescatorei, with spotted sepals and petals, which have appeared among importations, render us familiar with forms of that kind, and reference to our illustration of O. P. leucoxanthum from Baron Schrœder's collection, at p. 606, May 7th, 1887, demonstrates that there is at least one plant of O. Pescatorei which has flowers wholly white, except for the tinge of yellow in the centre.

For another extraordinary variation in which the purple spotting, more commonly to be seen on the petals, is also displayed on the labellum, we are indebted to Sir Trevor Lawrence, Bart., M.P., the President of the Royal Horticultural Society. It is noteworthy, too, that with the spotted forms, as with the pure white variety alluded to, the flowers display a marked advance on those of the type in size and substance, thus making them doubly welcome in gardens.

PLANTING PERENNIALS.

At p. 666 your correspondent, "A. Y. E.," seeks for information under the above head. What I have to say in the matter would be more correctly called "Effective Grouping of Perennials," for I think it time that there should be a change in this matter, and that the "borders" should be discarded. Generally, hardy plant borders are too narrow to produce the best results, and it is equally bad when a border is too wide to admit of its being properly attended to. In a border 7 or 8 feet wide, the tallest plants get naturally put to the back part, and in consequence are in a bad position, not as regards the dwarfer subjects in front of them, and around which the ground will become very hard by the treading necessary to reach the tall plants for staking and tying, weeding, and so forth. [There should always be a narrow earthen alley behind the back row of plants. Ed.] Were I requested to plant a piece of ground entirely with hardy perennials for effect—and I assume it is effect which is needed by your correspondent—I should probably not adopt the border at all, and certainly not one of those long, monotonous dotted ones which we are wont to see in old-fashioned places, for they afford but little diversity, the only result being a series of straight lines, and a bank of vegetation, much too formally arranged. That such an one is likely to give lasting satisfaction will hardly be anticipated. Equally bad is the suggestion of "A. Y. E." to plant in formal "circular, oval, or diamond-shape masses," for nothing could possibly be more out of place than such shapes would be on a long border. The best thing to do is to dismiss the idea of a border altogether, and in its stead to take a piece of ground 40 feet square, not of necessity a square, but an isolated piece of ground. On this ground I would arrange the plants in groups, yet at the same time endeavouring to avoid anything approaching formality throughout.

For convenience sake, I will assume the plot is square, having paths on all sides. To form points of ingress and egress will be the first thing to decide, and these may occupy a central position at either side; now roughly peg out an irregular line on the outskirts, allowing various-sized projections along the margin for the reception of smaller things, with bolder positions behind, and not exceeding 6 or 8 feet wide at any spot. Seeing that this is viewed from both inner and outer sides, the width given will not prevent any one from observing the plants to advantage. This completed, the inner portions should have attention, and here the same rule should prevail of not allowing anything of a formal character to be made. A picturesque ground plan should be the aim of the planter, and it should be so arranged that only a small portion of the whole, when planted and established, would be seen at one time; this style has many advantages, some of which are its general aspect and diversity, which alone prevents anyone embracing the whole of the grouping at a glance, and there is always a pleasure in the discovery of this or that plant just bursting into bloom.

Another point is gained by judicious arrangement, in planting the taller subjects in such a manner as to form a protection from high winds or a screen in case of hot sun, both things of good service in protecting dwarfer subjects. An important item which should be borne in mind is to have all the groups well under control, that is, so disposed that they may be readily seen and within easy reach of the hand. Thus, for instance, a group of Phloxes of the decussata section may be 6 feet across in the widest part, and in that way accessible from all sides; while for such things as Kniphofias (Tritomas), and other plants which need but little attention, a group 10 feet across would not be out of place, it might show to better advantage if raised 2 feet above the ordinary level, supporting the soil with clinkered burrs or root stumps, with dwarf trailing subjects to ramble over the latter. A fine clump of Hyacinthus (Galtonia) candicans should not be omitted; important positions should also be given to Clematises and Yuccas.

But having once formed as many groups as the space at disposal will permit, and of as many and irregular sizes and shapes as possible, one need never be at a standstill for ideas of bold irregular outlines, as these exist in the clouds, and the selection of suitable subjects will be comparatively an easy matter.

Among the bolder subjects that thrive well in ordinary soil are Funkias, Sunflowers, Asphodelus luteus, Leucanthemums, Iris of the germanica section, Polemonium Richardsoni, Iberises, perennial Cornflowers, Rudbeckias, Œnotheras, Stenactis, Galegas, Spiræas, particularly aruncus, filipendula, venusta, palmata, and palmata alba; Orobus, Iris pumila vars., Campanulas, such as carpatica vars., turbinata vars., pumila vars., persicifolia vars., pulla, Van Houttei, glomerata vars., latifolia, and, lastly, pyramidalis and alba.

Michaelmas Daises, again, are very showy—particularly Aster Bessarabicus, longifolius formosus, lævis, dumosus, ericoides niveus, Shortii, and others; Senecio pulcher, the hardiest of the Megaseas, the several forms of Anemone japonica, Lychnis in variety, Heleniums, Trollius, Centaurea macrocephala, herbaceous Lobelias, Anemone hortensis, coronaria, fulgens, and sylvestris; Phloxes of the setacea and allied groups, with such species as frondosa and amœna; Saxifraga Camposii, Thalictrum adiantiforme, Aubrietias, Dictamnus, herbaceous and Tree Pæonies, Gaillardias, Potentillas, Hellebores, especially the best forms of niger, in bold masses; while the Lenten Roses here and there are always pleasing in foliage alone.

There is also a rich and delightful assortment of bulbous or tuberous rooted plants, particularly of Daffodils and Narcissi, Iris reticulata, Snowdrops, Winter Aconites, Trilliums, Alstrœmerias, Erythroniums, Scillas, Chionodoxas, Anemone blanda, nemorosa plena, and N. cœrulea; Leucojum vernum, hardy Cyclamen, Fritillarias of all sections, Liliums in great variety, English and Spanish Iris, besides hosts of other bulbous plants too numerous to be named.

Some few others must not be overlooked, as Cypripedium spectabile, and the many varieties of Primula Sieboldi, together with such species as P. rosea, cashmiriana, japonica, denticulata, and the like. It is with such subjects as these that a plot such as I have described, having bold groups of as many as could be accommodated, could be planted, always preferring variety to duplicates of anything, and which would be a source of pleasure to the possessor, and from which flowers could be gathered plentifully for nine months in the year. *J.*



Fig. 93.—Odontoglossum pescatorei var. (see p. 684.)

TRADE NOTICE.

Mr. Maurice Young. — Great sympathy is felt for Mr. Young, whose recent misfortunes are quite unconnected, as to their origin, with his business as a nurseryman and landscape gardener. His ill-luck in no way reflects upon his credit as a man of high integrity, while his skill and knowledge of his business in all its branches are above average; so that Mr. Young will retain the hearty good-will of those acquainted with him.

*

A HISTORY OF ENGLISH GARDENING.

(Continued from p. 495.)

THE history of gardening in England has now been traced up to the commencement of the sixteenth century, and we have seen that side by side with the gradual development of the civilisation wealth, and power of England, grew up the domestic habitations and the gardens of the country. Each age, indeed, reflected not only the manners and customs of the people, but the position and prosperity of England as a nation, so that each progressive step in the style and plan of the garden is but an illustration to a page of history. Thus it was seen that the Anglo-Saxon gardens were, like their habitations, designed in a very rough-and-ready sort of way. They were, indeed, simply plots of ground containing a few simple beds, enclosed by wooden fences. The Anglo-Norman gardens showed a marked advance on those of the Anglo-Saxons, and bore traces of French influence, which the connection then formed between the courts of England and France would have materially contributed to bring about. The gardens of the earlier Plantagenets show a further development in design, and in their turn gave way to the more refined type, such as we see in vogue in the latter half of the fourteenth century—gardens with arbours, gravelled walks, "mounts," ponds, and fountains. This old English style of gardening, again, was considerably modified by the introduction, in the latter part of the fifteenth century, of the Flemish modes of decoration—railed beds, and topiary work—and produced that style in vogue at the commencement of the sixteenth century.

GARDENING IN THE SIXTEENTH CENTURY.

Until this period, nearly all our large gardens partook somewhat of a military aspect; they were almost invariably enclosed within the castle or mansion moat, and securely surrounded by embattled walls, consequently the gardens were comparatively limited in extent, and there was not much play for fancy on the part of the designer. But, after the Wars of the Roses, as the country became more peaceful, and there was no longer any necessity for the old modes of fortification, we find that the castles and domestic habitations of our ancestors were gradually divested of their military character, and it was not long before the palace-like character of the buildings of the time of Henry VIII. were developed. When the sixteenth century opened, therefore, the type of the castle was gently dying out, and the type of the domestic house gradually breaking forth into existence. This change in the architecture of our country was reflected in the gardens of the period, and before the close of Henry VIII.'s reign we find a great change in the style of gardening. Instead of the gardens being securely enclosed within the embattled castle walls, as had formerly been the case,* it appears that they were now sometimes laid out outside the walls; sometimes, indeed—as at Windsor† and a few other places—even outside the moat. With this increase of extent, the garden-designers had, of course, more room for play of fancy, and it was not long before several new features were introduced into our early sixteenth century gardens. Of these new features, the principal was undoubtedly the "knotted bed."

The old gardening books of the sixteenth century are full of designs for these knots, and from them a good idea can be obtained of what they were like. They appear to have been beds arranged in quaint patterns by rule and compass with almost mathematical precision. Sometimes they were ranged above the surface of the paths of the garden, the earth then being kept in its place by borders of bricks or tiles, but more generally the beds and paths were on the same level, and then there were the same divisions that we now use, as Thrift, Box, &c. Generally these beds were planted inside their thick margins with ornamental flowers or small shrubs, somewhat as we now lay out our carpet beds; sometimes no flowers or shrubs were planted, but the beds merely covered with various coloured earths. Against this latter practice, Lord Bacon writes, in his well-known *Essay on Gardens*:—"As for the making of knottes and figures of divers coloured earths, that they may lie under the windows of the house on that side on which the garden stands, they be but toys; you may see as good sights many times in tarts." These knotted-beds were the principal features of the English garden of Elizabeth's reign,* but the system of knot-bedding was introduced into this country at a much earlier period. As early as the second year of the sixteenth century, indeed, we find this system already in practice. In the Household Accounts of the Duke of Buckingham for 1502, we read of a sum of 3*s.* 4*d.* being paid to a certain "John Wynde, gardener, for diligence in making knottes in the Duke's garden." Again, in the Household Accounts of the Fifth Earl of Northumland (also for 1502), we find that a gardener was employed by the Earl "to attend hourly in the garden for setting of erbis, and clypping of knottes, and sweeping the said garden cleaner hourly."† By the year 1520 the system was in common use, and most of our English gardens could boast of some novel kind of knotted-bed. The knotted-beds of Hampton Court were, we read in the description of that place given in Cavendish's *Metrical Life of Wolsey*—

"So enknotted it cannot be expressed."

Other features of the early sixteenth century gardens were "galleries," "arbours," and "benches," the two latter being surviving features of the fourteeth century gardens. The former feature—the gallery—was formed by arching over the garden-paths with trellis-work, and then training Vines, Roses, Honeysuckles, and other plants, over the whole. Such galleries are frequently represented in the Illuminated MSS. and prints of the period. They are also not unfrequently mentioned in sixteenth century literature. A "fayre gallerie" ran along one side of the Duke of Buckingham's garden at Thornbury Castle, and another one was constructed by Wolsey at Hampton Court.‡ The former garden appears, from a survey that was made in 1502 of Thornbury Castle, to have been of considerable size, for it contained "many alleys to walk in openly," whilst "round about" were "other alleys on a good height," with "roosting-places"§ covered with "Whitethorn and Hazel." It must have been just such an old garden as Spenser has described in his *Fairy Queen*:—

"And all without were walks and alleys dight,
With divers trees arranged in even ranks,
And here and there were pleasant arbours pight,
And shady seats and sundry flowering banks
To sit and rest the walker's weary shanks."
Canto iv., 10, 25.

The arbours, as may be seen from the above description, were still favourite features in an English garden; but they were probably of much larger dimensions than those which we have seen, were common in the fourteenth century. They were used for more varied purposes, and from the following entry in the *Wardrobe Accounts* of Elizabeth of York, we gather that even banquets were held in them:—

"10 July, 1502. Item, payed to Henry Smith, Clerc of the Castle of Wyndsor, for money by him payed to a certain labourer to make an herbour in the little park of Wyndsor for a banket for the Queen. iiijs. viij*d*."*

The most interesting and historically important information relating to the gardens of Henry VIII.'s reign, is to be derived from the original accounts of the expenses incurred by King Henry in laying out the Royal Gardens at Hampton Court, which are preserved in the Record Office. It will not be necessary, however, to deal with the contents of these old accounts here, for all the information embodied in them has already been extracted and given by the present writer in a series of articles on the "History of Hampton Court Gardens," published in this journal some time since.† But there are other sources from which much interesting information on the subject before us can be gleaned, and of these the most interesting are, perhaps, the two manuscripts which contain the privy purse expenses of Henry VIII., for 1530—1532, and those of Princess Mary for 1536—1537.

Both these manuscripts contain many references to the Royal Gardens, and the fruit and vegetables cultivated in them in the earlier half of the sixteenth century. The names of the gardeners employed, and their respective salaries are also given. In all seven Royal Gardens are noticed, these were situated at:—

(1). Richmond. This garden is mentioned as having provided the "kinge's table" with Damsons, Grapes, Filberts, Peaches and Apples, besides "other fruits," flowers, rose and other sweet waters. The gardener, named Lovell,‡ received £3, the quarter salary.

(2 and 3). Hampton Court. Henry VIII. possessed here two gardeners, the "old" (p. 63), and the "new" (p. 255). The head gardener, named Chapman,§ provided the king's household with herbs (p. 39), Pears (p. 249, &c.), Damsons (p. 65), Medlars (p. 176), Cherries (p. 225), Strawberries (p. 221), Cucumbers (p. 264), Melons (p. 264), and Roses. He was paid £12 per annum salary.

(4 and 5). Beaulieu, or Newhall. Two gardens appear to have been laid out here, for there is a distinction made between the "smalle gardin" and "the grete." The "Keeper of the Grete Gardin," whose name is not given, was paid in wages about £3 10*s.* the quarter, and it was his duty to provide the "king's table" with Lettuces (p. 220), Artichokes (p. 224), and Cucumbers (p. 241). The "smalle," or kitchen garden, as it seems to have been, was more productive, for we find that it furnished all the "herbes" (p. 4, &c.), and "rootes" (among which are enumerated Radishes), used by the royal household in winter, and the Strawberries (p. 45), Artichokes (p. 72), Lettuces (p. 169), Cucumbers (p. 72), and "sallet herbes" (p. 176), consumed in summer. These latter were eaten with oil, as two entries for salad oil in the accounts testify.

(6). York Place. The garden adjoining this mansion is noted as having supplied Cherries (p. 56), and "other fruites" (p. 68), herbs (p. 60, &c.), and Lettuces (p. 58).

(7). Greenwich. The Royal Garden at Greenwich‖ is often mentioned both in King Henry VIII.'s and in Princess Mary's accounts, and it seems to have been one of the favourite summer resorts of Henry and his daughter. The payments entered in the accounts, however, are principally to the head gardener (named Walsh), for "weding and delving," labourers' wages, and "ordering in the garden"

* This remark, of course, only applies to the gardens of the nobility. At Thornbury Castle, in 13 Henry VIII., was "a goodly garden to walk in, enclosed with high walles embattled." See *State Papers of Henry VIII.*, No. 1286. See also many illuminated MSS. of this period.

† See *Wardrobe Accounts of Elizabeth of York*, 1502, p. 7.

* Shakespeare mentions, in *Love's Labour Lost*, act i. sc. 1, "a curious-knotted garden." Of the system of knot-bedding, we shall have more to say when we come to speak of the Elizabethan gardens.

† *Percy Reliques*, ii., 441, 2nd ed.

‡ See *A History of Hampton Court Gardens*, by "P. E. N.," in *Gardeners' Chronicle*, December 15, 1888, &c.

§ Probably arbours.

* In the *Wardrobe Accounts* of 18 Henry VII., five shillings is stated to have been paid for making an arbour at Bayarde's Castle in London.

† See *Gardeners' Chronicle*, vols. iv. and v., 1888.

‡ Lovell was originally head gardener at Greenwich, and he is mentioned in *Henry III.'s Book of Payments*, for 1519, as receiving a yearly salary of 60*s.* 8*d.*

§ Chapman was first employed by Cardinal Wolsey in 1514, as gardener of his palace at Kingston.

‖ The palace at Greenwich was built in the early part of Henry VI.'s reign by the Regent, Humphrey, Duke of Gloucester, and it was probably about the same time that the gardens were first laid out. The place was called by its founder *Placentia*, or Plaisance. In Henry VIII.'s *Book of Payments*, 1509, are several entries referring to this garden. One, under date July 1, runs: "Item for making certain things in the gardin at Greenwich, 100*li.*"

(p. 39, &c.). A few fruits and vegetables were cultivated in it, and among those mentioned are Cherries (p. 143), Filberts (p. 250), Cucumbers (p. 163), Artichokes (p. 218), Lettuces (p. 218), and "herbes, rootes and floweres" (*Princess Mary's Expenses*, p. 145).*

Four other gardens are mentioned in these accounts. They were situated (1) at Windsor (*Princess Mary's Expenses*, p. 145), (2) at Wanstede, (3) at Waltham (*ibid.*, p. 169), and at Westminster (*ibid.*, p. 18).

Notwithstanding the produce of the seven royal gardens mentioned above, it appears from the two old manuscript accounts that the royal fresh fruit supply often fell low, and then the stewards had to buy "dessert" of the "costardmonger" (p. 47 of *Henry VIII.'s Privy Purse Expenses*). Foreign fruits, such as Oranges, Lemons, Pomegranates, Figs, Raisins, Dates, and "other pleasures," as they are called, were provided by a certain Hubert, head pastry-cook to the King.† Presents of fruits and vegetables also added considerably to the royal supplies, and among these are mentioned Cherries, Apples, Pears, Wardens, Quinces, Medlars, Damsons, Filberts, and such choice kinds of fruits as Melons and Peaches. Fruits of the latter are mentioned as having been given by "Mr. Long's gardener." Among presents of vegetables, Artichokes, Cucumbers, Radishes, Lettuces, and Skirrets are noted. Quince pies, baked quinces, and Orange pies are entered in the accounts as having been given by Lady Sidney, and from various other people, chiefly "poore women," presents of flowers, Roses, sweet waters, Rosewater, and "syrup of Roses."‡ In the *Book of Payments* of Henry VIII., dated 1520, are also several curious entries relating to flowers, fruits and vegetables. Among these perhaps, the most interesting is one which records the immense sum of £10 as having been paid to "a gentleman usher who brought the king a goodly flower." *P. E. N.*

(To be continued.)

* In the *Household Accounts of Elizabeth of York* for 1503, the royal garden of Baynardes Castle in London is mentioned (p. 102). The "keeper" of this garden, named Waltier Reynold, received lxs. xd. per annum salary. In the *Book of Payments* of Henry VIII., 1510, a royal orchard is mentioned: "Item, to John Regine, gardener, for making of an orchard at Hamworth, 20 *li.*"

† In Edward VI.'s reign, it was already customary to buy flowers and sweet herbs for personal and table decoration. See *Household accounts of Princess Elizabeth*, p. 41, 42, &c.

‡ Presents of fruit and flowers were also often given by the poor to the nobility. In the *Household accounts of the Duke of Buckingham*, we read among others of the following: "1st May. Four maydens of Kanisham for bringing presents of hawthorn to my Lord's Grace, being in his orchard." Also on "July 2, to a servant of the Bishop of Norwich for bringing a dish of cherries."

MADEIRA.

NOTES IN PASSING.

It was at 6 A.M. on Thursday, September 19, that the R.M.S. *Roquelle*, after a favourable run from Liverpool, dropped anchor in Funchal Bay. Funchal, the capital of Madeira, with its white walls and red tiles, lay in the sides of the hills. The view was enchanting, and at first sight one fell in love with Madeira's capital. From the shore the land slopes right away up to the summit of the hills, which were enveloped in mist, and intersected with deep gorges, the whole contributing to form a picture, once seen, not easily forgotten. Presently the port sanitary official came alongside in his awning-covered gig; then followed the customs' officers, and then a flotilla of small craft, bringing fresh fruit, vegetables, fish, fancy articles, and many things for trade. The copper-coloured youngsters began with wonderful dexterity to dive after any small coins that might be thrown to them, gesticulating and shouting all the time in their queer jargon of English and Portuguese.

Finding that the vessel would remain some few hours, I embraced the opportunity of taking a run on shore to endeavour, if possible, to catch a glimpse of the vegetation. Picking out a guide from among the crowd who offered their services, I started quickly off, passing through the pebble-paved streets. The shops, somewhat humble and retiring, contrast strangely with the prodigious display seen at home. Miles' Carmel Hotel I first visited, having an acquaintance there. The garden and grounds being of more especial interest to me, I at once made my way thither, and here I met my reward, for here, growing in the open air, were plants that at home could be grown only under artificial conditions. Here the Bougainvillea glabra seemed quite at home, flowering in neglectful profusion. The Cannas reared stems of surprising vigour high into the air; and hard by, Plumbago capensis showed its light-blue flowers; while the Custard Apple and the Mango, familiar enough to me at Kew, seemed natives here, and to the place born. A turn in the walk disclosed a large fragrant bush, covered with a wealth of pink and creamy-white flowers, emitting a delicious perfume. This, I learnt, was the Frangipanni, from the flowers of which the perfume bearing that name is distilled. Euphorbia (or, as it is more commonly termed, Poinsettia) pulcherrima and Jacquiniæflora, though not in flower, had reached a height of 15 feet; the treatment which they received in the manner of pruning seemed similar to that bestowed upon standard Roses at home. The Papaw (Carica papaya) occupied a favourable position; it was a splendid specimen, and with its yellow fruits, not unattractive. In close proximity to an English Oak, the night-flowering Cereus flourished—a somewhat novel sight to a young traveller. A part of the garden is devoted to Bananas; the silver and Brazilian varieties only are grown, enormous clusters of the fruit being visible. Time pressed, and I sauntered back underneath the Vine-covered trellises, from which the bunches had been gathered, to the balcony where Rider Haggard, as he writes in *Dawn*, sat, and, by a stretch of poetical licence, viewed the lovely sea in the distance.

Retracing our steps through the streets, my guide led me to the Promenade. Here Monstera deliciosa was growing freely and flowering, but I saw no signs of fruit, nor could I learn whether it fruited freely or not. A clump of the Traveller's Tree attracted my attention, and a closer inspection revealed some fine healthy clusters of—mealy bug. Next I visited the public garden—very pretty place, full of objects of interest to the English gardener. The Pomegranate, a tree-like shrub, with its scarlet clusters of aromatic flowers, gratified alike the senses of sight and of scent. A bed of Camellias, small, but in splendid condition, and full of bud, occupied one corner of the neatly-kept garden. In the centre of a piece of ornamental water luxuriated a shrub with drooping pendulous shoots and lanceolate leaves, probably the Pepper tree [?]; my guide, in his imperfect English, calling it the "Crying tree," evidently in allusion to its properties. Dracæna Draco, the Dragon tree, about 15 feet or more in height, set me wondering whether or not it was an offshoot of the venerable giant that up to a recent time flourished in Oratava, Teneriff. Magnificent specimens of Cycads and Date Palms occupied different places, and some of which have been recently figured in these columns; and I found, somewhat to my surprise, that the gardener included both Cycad and Palm under the latter category. A species of Mesembryanthemum, evidently the Hottentot's Fig, is extensively used as a border plant, and had spread very far from its original bounds. In striking contrast to the almost universal luxuriance was a small sickly piece of the Aucuba, so common and robust in English soil. The Roses of Madeira also seemed from this passing glance to be very poor in point of excellence of bloom, compared with the lovely Roses of my native land.

The English cemetery, somewhat higher up, was my next object to visit, passing on the way a party of peasants bringing down new wine from the hills in skins on their shoulders. Over a high wall the white trumpet-shaped flowers of Datura (Brugmansia) suaveolens were distinctly visible. The cemetery, small but beautifully kept, is sweet with aromatic shrubs, inducing a somewhat sentimental feeling akin to the poet who "had been half in love with easeful death."

The climate of Madeira is so warm and equable as to encourage even the most tender growth. When it is remembered that during last winter the minimum temperature was 62°, and that even at an elevation of 1500 feet the thermometer did not fall lower than 47°, it is small cause for wonder that plants and shrubs and trees, which at home need the most careful artificial conditions, here flourish with rank luxuriance. In truth, every prospect, indeed, pleases. The skies are clear, and the waters of the bay of a beautiful deep blue. Balmy breezes waft gently in from the sea, rendering the air fresh and invigorating. A gun is fired from the ship. It is the signal for departure, and I hurry on board after a short stay of three hours, vainly wishing that the time could be extended over as many months. *H. E. B.*

THE CHESTNUTS, DENMARK HILL.

This is a pretty garden, which belongs to A. Stedall, Esq., and extends over 10 acres, and that too, within easy hail of the metropolis. The view from the verandah, which runs along the garden side of the house, discloses, over an undulating surface of smooth grass, magnificent clumps of Hollies, Bays, Rhododendrons, and other shrubs, bordered by winding walks leading to commodious and useful Pine-wood structures for both summer and winter resort.

In the borders, plentifully arranged with hardy flowers, the still lingering Marguerite, and the large clumps of the early Helleborus niger maximus, bear witness to the presence of winter, yet by the purity of their flowers hint not at the London fogs which must have reached them, although happily tempered by the purer atmosphere for which the district has a reputation. But here, as in most of the suburban gardens of any pretensions, the greater part of the flower-producing is carried on under glass, and Mr. Weale, who is a skilful florist as well as a good plantsman, here, as in all the other departments of the garden, gets good results.

The Chrysanthemum was in its glory when I visited the garden, and commands first notice. The plants were in the large conservatory adjoining the house arranged in three groups, backed by Tree Ferns and Palms. In the embellishment of this structure, the Chrysanthemums have played an important part since September, and on November 30 they had the whole of the display depending on them. All the blooms were good, and many of them would have graced a show stand at a first-class exhibition. Some thousands of fine flowers were tastefully arranged.

The rock-house is a beautiful example of planted-out garden under glass; the basement and back are clad with Ferns, massive foliage Begonias, creeping Ficus, &c. The pillars and girders are padded with moss, and the former are covered with Maidenhair Ferns, while the girders have Ficus repens running over them, and hanging gracefully down, even to the plants beneath. The centre has a noble specimen of Cibotium princeps, and on the sides are specimens of each of the Araucarias, which assume very graceful forms when grown in a house of a rather moist atmosphere.

Orchids are not a specialty here, yet quantities of those useful for decoration or for cut flowers are grown. One little house is nearly full of specimens of Cypripedium insigne in flower, with some Odontoglossum Rossii majus, O. Pescatorei, O. crispum, and Masdevallia. On the shelves in several others are dozens of good plants of Cœlogyne cristata; many specimens of Dendrobium nobile and other Dendrobes, and in the propagating house a splendid lot of Calanthes showing well for bloom; while the back of the lofty stove which contains fine specimens of Palms, Crotons, Dracœnas, &c., is occupied by many noble plants of Vanda tricolor and V. suavis, some of them having six or eight growths. In this house, Musa Cavendishii

is in fruit, some Lælia anceps and Cœlogyne cristata, all sending out spikes; and on the roof, but past its best, a large specimen of Gloriosa superba, which has this year borne over two hundred fine crimson and yellow flowers. In another stove in which the tall specimens of Hedychium coronarium and H. Gardnerianum have been very finely bloomed, are some good Lycastes, Cœlogynes, and Oncidiums; and next comes a quantity of Calanthe vestita in bloom among the fragrant white Pancratiums, Eucharis, and Gardenia. Here we noted the rare Cymbidium longifolium, Don; and a stout plant of C. Lowianum, sending out a strong spike. A houseful of neat table-plants is also a noteworthy feature. The cooler houses have fine batches of Primulas, single and double; greenhouse Rhododendrons, Camellias, Azaleas, Epiphyllums, Bouvardias, &c., in the culture and management of which the skill of the gardener is again displayed.

LEAF STRUCTURE.

As the number of real or reputed new species increases in our gardens, to say nothing of hybrids and crosses, so will the difficulty of determining them become increasingly greater. Anything, therefore, that is calculated to aid matters should be welcomed from whatever source it come. Again, it is clear that there is often a definite relation between the structure of an organ and the office it has to fulfil. This relation is more marked in the higher organisms than in the lower, in most animals than in most plants. This being so, we shall gain knowledge as to function by investigating structure, and, indeed, in many cases the investigation of the machinery forms the only means we have of knowing what work is done, and how. The internal conformation of plants, till recently but little relied on by botanists for purposes of classification, is destined in the future to be utilised much more generally. It is partially useful in the determination of the species of Conifers and some other plants, but no one should make the mistake—as many are prone to do—of relying upon it exclusively. Like all other characters, it is not absolute in its indications. Exceptions and variations occur, while in a very large number of cases the structure throughout large groups is so uniform that no use can be made of it for classificatory purposes. One objection that is raised is that it is not practicable. We need a quicker and more rough-and-ready means of determining species—true! but what if our rough-and-ready means fail, as they do so often, are we not then bound to go deeper, and try other means? It is true also that the comparative examinations by means of the microscope take up much more time than the more superficial examinations hitherto practised. There is no help for that. The result will be in the future that students will attack one small group, and study that exclusively—they will become specialists; it is the tendency of the time. We can, for instance, hardly imagine the possibility of another *Genera Plantarum* being undertaken, or, if undertaken, completed, by any one or by any small number of naturalists. Specialism, then, is inevitable. Its acknowledged defects must be balanced by a preliminary training, as broad and comprehensive as it is possible to make it. This done, the student may be allowed to become a specialist. But this is going beyond our limit—all we intended to do was to show the necessity of the naturalists of the future studying the minute anatomy of all parts of all plants in the same comparative manner as that in which they have hitherto studied the superficial aspects of leaves and flowers.

There is another point of view from which the study of structure becomes very important to the horticulturist. As already mentioned, the construction say of the leaf, varies according to the circumstances of exposure to light, degree of moisture, &c., to which it is subjected. A glance at the construction of a leaf as revealed by the microscope, will often show whether the plant is adapted for exposure to the sun, or fitted for shade; whether it will bear a dry atmosphere, or whether moist surroundings be essential. Such examinations also show how well adapted some plants are to grow under apparently adverse circumstances, and serve to explain why plants do well under cultivation under conditions very different from those to which they are subjected in Nature. We have, on a former occasion given illustrations showing, in a very striking manner, the variations in the leaf-structure of Orchids, and pointed out how good a guide the



Fig. 94.—section of leaf of araucaria imbricata, magn.

structure is in many instances to the treatment suited to the plant under cultivation (see vol. xxiii., 1885, pp. 608, 609).

The section of the Araucaria leaf at fig. 94 gives indications of the thick skin of the leaf, especially on the lower surface, the abundant feeding and breathing-surfaces, the water-containing tissues, and the numerous strands or bundles of vessels and wood-cells running through the leaf, and imparting to it its rigidity. These being cut across in our sketch are shown as circles. In addition, there are what are not shown in our illustration, very large branching cells studded with crystals, such as constitute so curious a feature in the Welwitschia. The other figure (fig. 95) shows a section through the leaf of Keteleeria (Abies) Fortunei slightly magnified. The leaf is peculiar in having a raised ridge in the centre of either surface, the feeding-tissues are similar to those in the Araucaria, but there is only a single vascular bundle in the centre of elliptical outline, as seen in section, and surrounded by a single row of oblong cells, constituting an inner skin or "endoderm," so that the space between the outer and inner skins, epi and endoderm respectively, corresponds roughly to the bark, while the woody cylinder is represented by the central vascular bundle, composed of wood-cells and vessels of different kinds. Two small resin canals are seen in section immediately above the skin of the under-surface, not far from the edge of the leaf. The structure is similar, but not identical with that of the Silver Firs (Abies), but quite different from that of the Spruces (Picea).

RASPBERRIES.

Of all bush-fruits, none, excepting Gooseberries are more useful, or in such general request, as Raspberries, the demand for which in most gardens and establishments is great, for not only is the fruit in much request for tarts, but housekeepers are always ready to take any quantity for preserve, to lay in a stock of jam for the winter. This being so, it is of the first importance to have a good plantation of fine stout canes to run to during the season of bearing, as it is only such that can yield a satisfactory crop, the weak ones and starvelings having as much as they can do to break, and just hold on during dry weather.

Those who happen to have them in this latter condition will find the present a good time to overhaul the stock and afford the canes assistance; the first preliminary to this being to go carefully over the plantation, and take up any that are too far away from the stools, or main crowns, as suckers run about far and near; and these, if lifted with plenty of root, are just what are wanted for forming fresh rows, and they should be laid in and kept for that purpose. The next thing is to go over those standing, and make a selection of the strongest, and once these are decided on all others should be cut out, as low down as possible, leaving only from three to four on each plant. After this is done, then comes the staking and tying, to afford the necessary support, and where stout-wooded stakes can be had, they are generally used, but in the end iron rods are considerably cheaper, as their durability is so great as to be almost incalculable, for they are practically indestructible, and their first cost is not great if bought at a fair rate per ton. Ours are ⅝-size, cut into lengths of about 5 feet 6 inches, and each is pointed at one end, to admit of being easily driven or pushed into the ground; but before being used all were tarred with hot tar, which prevents rust, and keeping them in good condition for years.

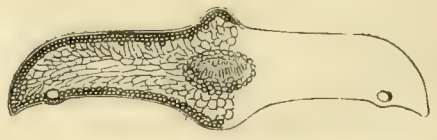


Fig. 95.—leaf of keteleeria fortunei, seen in section.

With the rods placed in position, the way to manage with the canes is to plait them by running them past each other in reverse directions, which greatly stiffens the whole lot, and renders them rigid and proof against any wind, as there is resistance one way and help from the other, and no movement can take place when the canes are tied at the top, and there cut. This tying should be done with strong tar-yarn or string, which will last the year through. Another way of supporting Raspberry canes, other than by stakes, is to strain galvanised wire along the rows, to which the canes may be trained or made fast; but to have the wire tight and secure, stout posts, or iron supports, must be used at the ends, and if the rows are long, it is necessary to have a post or stay in the middle.

With the canes tied and secured, the next thing is to clear the ground of weeds, but on no account should it be dug or broken up, as Raspberries, being such fleet-rooted plants, their fibres, or chief feeders, are destroyed by the digging. This, in the majority of cases, is the cause of weak canes. To have Raspberries really fine, the only way is to manure the surface with short dung and charred or burnt vegetable refuse, and to leave it on as a mulching, as then the fibrous roots are encouraged and fed, and the fruit does not suffer during dry weather.

In starting fresh plantations, moderately light land should be chosen, and if in a position half or a little shaded, all the better, as Raspberries do not like being quite in the eye of the sun, but they must be away from tree-roots, which soon rob and im-

poverish the soil. To give the plants a good chance, the ground should be trenched, and have a heavy dressing of manure worked in—or, better still, some rubbish-heap stuff, in which Raspberry roots delight and run about freely.

The proper distance at which to plant is in rows 4 feet apart, and the same distance from plant to plant, putting the canes in singly; and after this is done they should be cut down, either then or in the spring, before they start, which causes the plants to break from below and send up several rods. As these will not shade, or need all the space the first season, the ground between may be cropped with some low-growing crop, such as Onions, for which the trenching and preparation carried out for the Raspberries is very suitable, and fine bulbs are sure to be grown. Some do not head the Raspberries back when first planted, but try and fruit them right off, but I have never seen them do well when so treated, as the strength goes to the cane, and the shoots near the top, and numbers never break up from the base at all, but die quite away in the autumn.

If fruit is desired late, the so-called double bearers must be grown; but these require different treatment so far as the canes are concerned, and should be cut down every winter, as they crop on the ends of the young shoots they make.

With regard to the summer kinds, the best of the old ones is Fastolf, which though not a strong grower, is very free, and produces large fruit of excellent flavour. The red and the yellow Antwerp are both good, but all the red sorts are likely to be superseded by others of more recent date, the finest I have seen being one called Superlative, which is of robust habit, and bears very fine fruit. This it shows in great abundance on the shoots, which branch out, and are quite borne down under the weight of their load. The berries are large and conical, rich in colour and flavour. Baumforth's Seedling is also spoken well of, but at present I have not grown or seen it, neither have I another named Hornet, which has been very favourably noticed in the gardening papers. *J. S.*

GOURDS.

Ornamental Gourds are so remarkable, both in form and colour, that it is to be wondered at that they are not more often grown. Some of us with long memories can recall a magnificent show of these objects in the rooms of the Royal Horticultural Society, somewhere in the '50's; but since that time, so far as we know, they have only been seen at our shows in relatively small numbers. This is not because they are difficult to grow—quite the contrary. The seeds are raised in late March and April in the heat of a dung-frame in a temperature of 70° at night, and 85°—90° by day. Plunging the pots in bottom-heat is not essential, and the young plants require careful airing day and night, and protection from bright sun so long as the plants stay in the hotbed. After the plants have got three or four leaves they should be put into a somewhat cooler place, and be inured by degrees to be able to stand out-of-doors in the middle of May. Grown against an evergreen hedge, facing south or south-west, they produce an extraordinary effect in the autumn. Trained to rough palisades, Gourds form an interesting and complete hedge around unsightly spots in a garden. Of course, in India, the conditions of growth are even more favourable. The white-flowered species are, as a rule, uneatable; in fact, deleterious if eaten.

For our illustration, representing a group of Gourds grown at Poona, we are indebted to Mr. Marshall Woodrow, whose work entitled, *Hints on Gardening in India*, has, we are pleased to see, reached a fourth edition, and which furnishes us with a ready answer to a question often asked us, "What is the best book for gardeners in India?"



Fig. 96.—A group of ornamental gourds.

Early Narcissus.—Mr. W. H. George, of Holyvale, St. Mary's, Islands of Scilly, sent about 1000 spikes of white Narcissus (Scilly-white variety) to market last week, and about the same number during the week previous.

LANDSCAPE-GARDENING IN PERSIA.

Persia has long been famed for the artistic genius of her people. It is less generally known, however, that the art of landscape gardening has been for thousands of years one of the most characteristic of the æsthetic expressions of Ivan. This ignorance is doubtless caused by the fact that examples of the other arts of Persia can be exported or reproduced in colour, whereas a garden cannot very well be exported, and few travellers have visited Persia or had the artistic training that would lead them to write intelligently about her arts.

I speak of the landscape gardening of that country as reaching the rank of an art, because, in the first place, it is an original expression of a national taste for the beautiful; and in the second place, because, like all true art, it is an outgrowth from natural conditions, and adapts itself to those conditions.

The climate of Persia makes out-of-door life essential. For nine months no rain falls, and even the wet season, which lasts less than three months, is attended with only moderate rain or snow on the elevated plateaus, which constitute the larger part of the country. The remainder of the year the skies are cloudless, the dews are imperceptible, and the dry air quivers with mirage. The heat is steady, but the nights are cool, owing to the elevation of the country. Exception may be made to these observations in regard to the climate of the narrow strip between the Caspian and the Elbruz Range, forming the northern watershed of those mountains. The vapours of the Caspian striking these slopes deposit a vast amount of moisture, which descends in numerous streams. The northern slope is covered with dense, jungle-like forests, the alluvial lands at the base are devoted to rice fields, and the steaming atmosphere reeks with malaria.

But, on passing the ridge, one enters a dry atmosphere, and beholds before him plains extending six hundred miles, often mere waterless, verdureless sand, and always destitute of trees, except where

irrigation has been employed. This is the region where the landscape-gardening of Persia has been developed and brought to exquisite perfection.

It is evident that an arid soil and a cloudless sky at once suggest the need of water and shade, and that those must be the prominent objects to be brought together in agreeable combinations, while the scarcity of the population and the engineering difficulties to be encountered must regulate to a large degree the characteristic features of a place. Add to these a third element—the last one would imagine as giving a direction to landscape gardening—polygamy. This institution shapes almost every phase of Persian life. In the present case the seclusion of the women imperatively controls the arrangement of the grounds as well as of the dwelling apartments, and hence is one of the causes for the constant surprises and variety we find in the country seats of Persian gentlemen.

In spite of these limitations, artists in landscape do not slavishly follow a fashion or some dominant conventional system of decoration, but allow the *genius loci* to stand at their elbow and direct them how to evoke beauty in accordance with the particular spot that, from an arid rocky slope or a barren plain, is to be transformed into a dream of voluptuous delight.

Having purchased his land, the proprietor does not say to the designer: "What is the latest style in landscape-gardening or in the construction of villas?" But, "What can you make out of this piece of land?" The land is not to be twisted into conventional designs, but the design is to be brought into harmony with the land. The variety possible on this principle in Persia is evident when we consider that the first object of a country-seat is, wherever possible, to locate it on some elevated point, in order to lower the temperature, and approach the sources fed by the mountain snows, the latter in order to have abundant water for irrigation, without which it is useless to attempt culture in that country, either of woodland or tilth.

I cannot better illustrate these statements than by a brief description of a characteristic place in the neighbourhood of Teheran. These country-seats, by the way, all have specific names, by which they are known, rather than by the name of the proprietor. Jeferabad includes some 60 acres on the steep slope of one of the spurs of the Shimran Range. The vegetation is divided between fruit trees, shade trees and flowers, arranged to make an agreeable summer residence and a profitable farm, the latter feature being so distributed as not to be too prominent in a pleasure seat.

The grounds are so steep and broken that a proper site for the residence could be obtained only by terracing. This added to the expense, but also to the impressive beauty and majesty of the design, which has everywhere been carried out with an admirable combination of breadth and detail, and a general harmony of effect, which produces an impression on the memory more vivid and lasting than that of many far more elaborate and costly places I have seen in Europe. Herein is exhibited the consummate art of the Persian designer.

The shape of the estate is exceedingly irregular, roughly representing a Pear pinched at the smaller end, which is, at the same time, the nearest the base of the hill. It is near this end that the gardens and residence are placed. These might have been more easily reached by having the main entrance to the grounds just at a bend in the road before it descends to follow the roaring brook, that comes from the mountains and dashes through a romantic ravine. But to have done this would have been to sacrifice one of the finest effects of the place. This feature of Jeferabad is one of the most effective I have seen produced by the art of landscape-gardening.

Descending into a little hollow, the steep winding road inclosed on either hand with high walls, one comes unexpectedly to a lofty gateway on a widening of the street, the latter intended to afford space for the groups of horses attending the cavalcade of a Persian gentleman. Entering the gate, we look up an avenue of lofty, trimmed Sycamores and Poplars, forming on either hand a stately wall of green, through which glimpses of fruit trees are seen. This avenue turns a sudden angle, and continues up a gentle slope for 100 yards, leading, apparently, to nothing; so dense is the vegetation, one can form no idea of the character of the place.

Still wondering what he is coming to, the visitor reaches another sharp angle in the avenue, and, without warning, faces a flight of broad stone steps, flanked by a carved balustrade at the end of the third stage of this impressive walk. At the head of the steps is a vast terrace, and framed, as it were, between the walls of greenery beyond this terrace, appears a most graceful pillared pavilion surmounting a second terrace, the effect being not less beautiful than some of the restored temples of classic times, lifted toward the blue ether by gradual elevations.

It is not until one actually places foot on the pavement of the first terrace that he has any conception of the delightful surprise that awaits him. He beholds a platform 120 yards in length, and 40 yards in width, from whence he gazes over the capital of Persia in the distance, an oasis of green on the plains, quivering with mirage fading away to the south. This view is seen through a break, permitted for this purpose, in the wall of foliage that surrounds the terrace.

The terrace is entirely paved, but yet we say this with reserve, as through the centre is a channel for a stream, and parterres abounding with flowers fill a large portion. The northern end is raised a foot, and contains a circular tent some 50 feet in diameter. The east side of the terrace is protected by the wall of the second terrace, rising 15 feet. This terrace is of less width, and is, in turn, protected on the east side by a dense grove of Poplars swaying over it, like plumes in the regular trade wind.

The buildings are constructed on these two terraces in a manner to combine effect with the peculiar domestic arrangements of the country, and at the same time in a way that could not be admitted in a less mild and even climate. Extending entirely across the northern end of the first terrace are the apartments of the ladies, and these have a separate court invisible until one enters it. This is paved, and beautified with Roses grown in the form and almost the size of Lemon trees. In the centre of this court is a tank, where the water plays at will; and from this court one reaches a stately apartment, serving as a common room where all can meet and sleep, gossip, embroider, or touch the guitar, as they choose, listening to the plashing of water from every quarter. For the water, led from the hill above, where it has fed the orchards, passes into the tank of the small court; thence it passes under the women's apartments, to toss its spray again in a tank on the southern front of those apartments; thence it bursts forth again with a lofty jet in the large basin, then dashes along the terrace to break down a mimic cascade, and then passes under the dining apartment at the southern extremity of this terrace, dashing forth down to the brook with the chatter of a mill-stream.

In the meantime another branch of this stream is diverted to the second terrace, where it feeds two other basins between the three pavilions, for the master's quarters, which, at regular intervals, crown the centre and each end of that terrace. Thus, at will, five jets can play at once in this part of the grounds, in addition to two mimic cascades, and the roar of a brook which courses through the orchards. In warm weather the charm of this cooling music can be easily appreciated.

The large grounds which rise in the rear of these artificial works are densely covered with fruit and forest trees, judiciously broken by delightful winding walks, and intervals provided with seats. Here and there a terrace of rough masonry is bolstered against the hillside, and a deep, rude tank, overgrown with moss and turfed, offers, at the highest part, a delicious spot for a *fête champêtre*, for which purpose it is often employed. Altogether, this portion of the estate forms a romantic wild wood, slightly aided by art and taste. *S. G. W. Benjamin, in "Garden and Forest," New York.*

PLANT PORTRAITS.

Chrysanthemum Stanstead Surprise, *Revue de l'Horticulture Belge*, December.—In the way of Edwin Molyneux, but with rays carmine, silvery on the reverse side.

Fuchsia triphylla, *Revue de l'Horticulture Belge*, December.

Grewia parviflora, *Gartenflora*, 1889, t. 601.—A hardy Grewia is a novelty. The shrub comes from Northern China, and has more interest than beauty.

Hypericum Moserianum. *Revue Horticole*, October 16.

Iris Bakeriana, Foster.—A native of Armenia, a beautiful species, with fragrant flowers like those of I. reticulata, but the leaves are cylindrical, not tetragonal. *Bot. Mag.*, t. 7084.

Lælia glauca, *Orchidophile*, October, 1889.

Oncidium anthocrene, *Orchid Album*, t. 392.

Pear Le Brun, *Bulletin d'Arboriculture*, November.—Fruit large, elongate, club-shaped, with a short stalk and shallow eye; sulphur-yellow. Flesh delicate, melting, juicy, sugary. September.

Pear, The Seckle, *Bulletin d'Arboriculture* of October.—A well-known variety, of North American origin.

Plum, The Kelsey, *Bulletin d'Arboriculture* of October.—A Japanese yellow Plum, of large size, which has not as yet fruited in Europe. It is supposed that it will make an excellent fruit for preserving.

Primula Palinuri, *Gartenflora*, t. 1310.—One of the Auricula section, with broad-stalked, spoon-shaped, glabrous toothed leaves, and heads of small, yellow, funnel-shaped flowers.

PLANTS AND THEIR CULTURE.

The Greenhouse.—Erica gracilis, E. hyemalis, E. colorans, and others of the soft-wooded class are coming into bloom, and must have a due quantity of moisture at the roots, for should they but once suffer from drought, many of the flower-buds will not open. The general collection should be closely examined, mildew attacks being now common, and means taken to prevent the spread of the mould. The present is favourable for tying and staking the larger specimens. Opportunity should be taken of every mild day to ventilate abundantly the heath houses, so as to dispel damp. Epacrises require the same kind of treatment as early flowering Heaths. The early-potted up Pelargoniums will mostly have made growths sufficiently long to be tied into shape a little, keeping the plants near the glass, and watering carefully for a time; repot any of the later plants into the pots they will flower in, also the late successions of Cinerarias and Mignonette. The early Cinerarias will be benefited by having frequent doses of liquid manure in a weak solution, and when in bloom put them into a cool house. Hebecliniums need somewhat similar treatment to Cinerarias. Salvias in bloom should be afforded a dry atmosphere, so that the blooming period may be long. Give Solanums that are in berry plenty of water, and keep them free from aphis—a troublesome pest if not eradicated on its first appearance.

Camellias whose flower-buds have begun to swell, should get careful attention, or the buds will drop; and any of the kinds which are liable to loss of the buds will be improved if they are got into growth early after the turn of the year, so that the wood may be well ripened. I find this helps the plants, and prevents loss of buds in many cases. I do not write of plants that have been placed in the open air during the late summer months, but of those which are planted out and are of large size. An early opportunity should be taken if any of the plants are dirty to cleanse them by sponging—their bright glossy leaves adding much to their beauty when clean.

The stock of Cyclamen sown early in the autumn will now be ready to transfer from the seed pans or pots into small thumb pots; and these need careful handling to preserve the tender roots, and placing near the light, in a close pit or intermediate house. We usually make two sowings, and the later ones will be ready to pot off in three or four weeks' time. A compost of three parts rich, yellow, pasture loam and one part leaf-mould, with a small quantity of decayed manure should be used in the first shift;

and care should be taken not to give the plants too much water in their early stages, or the compost will get soured. I find the chief secret of success with Cyclamens is to keep the plant on the move always, and with plenty of feeding when the flowering pots are full of roots—sowing early, not later than the end of September, and keeping them clear of insects.

Conservatory and Forcing-house.—Continue to introduce flowering plants according to the demand. An early opportunity should be taken to house the stock of Tea Roses in late fruit houses, or other cool structures. All other plants in the open should be plunged in ashes, cocoa-fibre refuse, or leaf-mould. A few of the forwardest of the Hyacinths, Tulips, and Narcissus should be brought into the forcing pit. The pots of bulbs potted later should be uncovered and removed to a cold frame, if found full of roots, and be shaded a little before allowing them full light. Pot up clumps of Helleborus niger and bring them on in a frame, but affording them plenty of moisture and ventilation, no heat being given. Lily of the Valley should be brought on in batches, at intervals of three weeks, placing the crowns where a bottom-heat of 85° can be maintained, and covering them over with several inches of cocoa-fibre which should be kept moist.

Azalea mollis and A. indica may be put into the forcing pit at the warmest part, and be kept well syringed. Choose the plants with the most prominent flower-buds. Deutzia gracilis may now be forced with safety, if given a gentle bottom heat. We have just made up a spare pit for this purpose, using sweet, fresh leaves for the hotbed. Lilac Charles X., Staphylea colchica, Tea Roses, Hoteia japonica, Persian Lilac, Prunus sinensis fl.-pl., and Viburnums will have much finer flowers if this kind of treatment can be adopted. In many gardens the difficulty lies in the great number of things required and the small means at command, and there will be a great saving of time if plants which are going to be forced are placed in forcing-houses just about to be started. The Viburnums, Lilacs, Rhododendrons, and Staphyleas will do well with the treatment required for the fruit trees, Vines, &c., for some weeks, the slow forcing suiting them. Dielytra spectabilis and Convallaria polygonatum are useful also if brought into the forcing-house at this season, and produce flowers which will have a great length of stem, rendering them good for vase flowers. Solomon's Seal is sweet-scented when forced; Callas will require much water and frequent supplies of liquid manure to assist them in building up strong spathes. Callas that were plunged in their pots all the summer and not forced, are showing spathes in a house of 50°; the plants that were planted out form a succession to these.

The early summer Lilies should be potted up as soon as the bulbs come in. These are valuable plants for cutting and decorative purposes when forced flowers are gone over. We use small pots for potting newly imported bulbs, and give them a shift the following autumn, and they give us fine spikes of bloom. Gladiolus Colvillii alba (The Bride) should be potted without delay, for blooming in April and May. We pot them in lots, at intervals of a few weeks, and these last till the bulbs in the open ground come in. A few other early varieties should be potted up for the later spring blooms. Tuberoses may now be potted into small pots in good yellow loam, plunging the pots in a moist bottom-heat of 75° to 80°, and no water given till growths appear; and if fine spikes are desired, repot some of them when they are well rooted, plunging them in the hotbed till the new roots fill the pots, giving abundance of water as the foliage increases, also liquid manure. *Geo. Wythes, Syon House, Brentford.*

THE FLOWER GARDEN.

Edging Plants for Walks and Flower Beds.—Neat, well-kept edgings are indispensable to high-class gardening; for flower beds ever so well planted, if bare of, or with irregular-formed edgings, are an eyesore to most persons having any regard for neatness and finish. The same holds good with regard to walks. Turf, of course, is the most suitable edging for walks in pleasure-grounds; and if the edgings are allowed to get rough for want of trimming, the surroundings will present a look of neglect; therefore, time should be found to trim them, and no time is better than the present. I need hardly say, that previous to cutting the turf it should be made level, and be well rolled previously, thus ensuring a clean cut.

Ivy, St. John's Wort, and Box make very suitable edgings for walks under trees, and wherever turf will not grow well, and these should be clipped once a year at least, and the present is a good time in which to get the work done. As to the height and width at which these edgings should be kept, this will, to some extent, be decided by the width and length of the walk. If the walk be wide, 9 to 12 inches will be none too high for the edgings, and their width may be still wider; in fact, if the ground beyond be bare, there is no reason why the edging plants should not extend over the bare soil, but a true line is at all times desirable to have next to the walk. Though I have a dislike for Box scroll-work in the flower garden, it is, as an edging to walks and flower beds on gravel, by far the best plant for the purpose, and, I may add, the best abused; but that does not alter the fact of its effectiveness, and the abuse would seldom or never be heard if due pains were taken to keep this kind of edging in good order. We have a quantity of Box edging here that is kept in perfect condition by the simple treatment of due mending of weak places in winter, and clipping in June; and our Box is always the admiration of visitors. Excellent edging plants, for walks in ferneries and rockeries, that necessarily are of varying width and forms, are the grey Sedum glaucum and Festuca glauca, Saxifraga hirta, hypnoides, the green Sedum lydium, and common Stone-crop. I gave preference to the first named—Sedum glaucum—because it bears treading on, brushing over, and rough treatment generally, and yet continues to thrive, so long as it does not lack moisture. It was the lack of moisture which led me to discontinue its use as an edging plant to the upright edgings of flower-beds. The best of all plants yet tried for edgings of this description is the British weed, Herniaria glabra, which never fails to do well if replanted each spring. *W. Wildsmith, Heckfield Place, Hants.*

THE HARDY FRUIT GARDEN.

Top-dressing and Mulching.—During frosty weather get soil and manure wheeled to parts of the garden where these are required for top-dressings and mulchings. Pyramids, cordons, and bush fruit on dwarfing stocks should be attended to yearly in the matter of manure and fresh soil, the roots growing mostly close to the surface. For top-dressing purposes the fresh soil may be left in heaps for the present, and as soon as a change in the weather takes place it should be carefully spread over the roots and slightly pricked in with a fork. If the pruning is not finished it should be completed as quickly as possible, but do not prune when the branches are frozen.

Figs.—In cold districts figs require some amount of protection, or the fruiting ends of the shoots get injured by frost, and for this purpose Spruce boughs, Fern fronds, or mats may be employed. But on no account should the trees be coddled with overmuch material, or harm will be done. Figs will stand 20° of frost without injury, provided the wood is matured. Remove all the Figs that are larger than a marrowfat pea, these being sure to perish before the spring comes.

Fruit Trees.—If any young trees arrive from the nursery during frosty weather it will be better not to unpack them, but place them in a dark shed till a break in the weather takes place, and the roots, if dry, should be well soaked in water, before planting. Any trees which may have been heeled-in should be protected at the roots with stable litter, &c. *H. Markham, Mereworth Castle, Maidstone.*

FRUITS UNDER GLASS.

Vines.—The buds of the Vines in the early house will be now on the move, and the rods may, therefore, be tied up into position, the temperature being raised a few degrees, say, 55° to 60° at night, and 65° to 70° by day. Syringing may be done in bright weather, but the Vines must be thoroughly dry at least once a day. A great thing to strive to get, at this time of year is foliage of a medium size, firm, dark green in colour, and this can only be obtained when there is well-ripened wood to start with, with ventilation afforded the Vines on every favourable opportunity, and sufficient hot-water piping to keep up the necessary heat without driving the fires, and a not too free use of the syringe and watering-can; but here again circumstances alter cases, for when forcing is carried on in houses heated by means of flues, there is necessarily a great deal more moisture required than is the case in structures heated by water, and besides, a light and airy house wants a different treatment to a low, poorly ventilated one. As soon as the bunches show themselves, the shoots should be stopped a leaf or two beyond the bunch, and remember, in disbudding, to leave the shoot that is nearest the rod, and in tying-down to be careful not to tie too tightly, but only just sufficient to bring the shoot away from the glass, or it may snap.

Pot Vines.—These will require constant attention, and to be watered with tepid water, stopping the shoots as they grow, and reducing the number of the bunches in proportion to the strength of the Vine, as soon as the best can be seen. To secure perfect fertilisation, a camel-hair pencil should be used to distribute the pollen. Afford the Vines air in favourable weather, and keep a somewhat dry atmosphere while they are in bloom.

Grapes still hanging should be examined daily, and all decayed berries and foliage removed, as well as any substances likely to induce damp, and consequently decay. The paths or borders should not be raked or swept more than is absolutely necessary, for fear of causing a lodgment of dust in the bunches. Where there is convenience for keeping them, these Grapes might be cut with 7 inches or more of shoot, and put into bottles of water in the fruit-room, where a temperature of about 45° should be kept. All Vines that have shed their leaves should be pruned and cleaned, the old top soil of the border removed, and a top-dressing of loam and manure and bone-meal put on it, the outside border being at the same time protected with a covering of tree leaves and litter, to keep out frost. *W. Bennett, Rangemore, Burton-on-Trent.*

THE KITCHEN GARDEN.

Lettuce and Endive.—Every particle of decaying matter should be picked off as soon as it is seen, and a lining of some dry material should be placed around the frames to exclude frost. Tie up Cos Lettuce and Endive, the former about twelve, and the latter about twenty-one days before they are to be used. Fill up any vacant space in frames from which the plants have been cut, and keep the surface stirred to prevent mould obtaining a footing.

Hot-beds.—As large a quantity as possible of Oak, Beech, and Spanish Chestnut leaves should be collected now for the making of hot-beds through the winter and spring. It is of the utmost importance that they should be got in whilst they are dry, and stacked, and thatched. A good supply of stable litter should also be in readiness for mixing—one load of litter to three loads of leaves will secure a good lasting heat. The heap should be turned over at intervals of four or five days, always taking care to turn the outside portion inwards. The materials will not be ready for three weeks, after which they may be built up into a hot-bed and in readiness for Radishes, Carrots, and Potatos. The sets of the latter, which were placed in boxes to sprout, should not be allowed to exceed 2 inches in length, when they should be transferred to the prepared frame.

Cauliflowers.—Seedlings in cold frames, must receive attention, and be ventilated on all favourable occasions. The frames should be secured as far as possible against the ingress of frost by having some dry litter placed around and over the glass, but the coverings must be removed on all favourable opportunities, in order to keep the plants in a stocky condition. If frost have found an entrance, be cautious in admitting air and light until the plants are naturally thawed. A number of the plants may be potted into 3-inch pots now and kept in a cold pit, where frost cannot reach them. When the plants have well filled the pots with roots they should be transferred to 6-inch pots, and planted out when spring returns.

Cabbages.—The latest sown plants in seed beds will require some slight protection in damp cold situations. A few spruce or other evergreen boughs stuck about amongst them will be found good safeguards, but pricking out into winter quarters is probably the best method, as it checks luxuriant growth, and thus prevents injury during severe weather. *W. M. B. Baillie, Luton Hoo Gardens, Luton.*

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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

WEDNESDAY,	DEC. 18	Roses, Fruit Trees, Shrubs, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms. 2000 Lilium auratum, and Other Bulbs, at Protheroe & Morris' Rooms.
THURSDAY,	DEC. 19	10,000 Lilium auratum, and Other Bulbs, from Japan, &c., at Stevens' Rooms.
FRIDAY,	DEC. 20	Established Orchids, many in Flower, at Protheroe & Morris' Rooms.
SATURDAY,	DEC. 21	Roses, Fruit Trees, Shrubs, Border Plants, Dutch Bulbs, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—40°.

*** **OUR ALMANAC.**—Secretaries of societies would greatly oblige by forwarding, as soon as possible, to the Editor, for insertion in the Almanac, any information respecting the dates fixed for horticultural and botanical meetings and shows in 1890. The Almanac will be issued with the first Number of the New Year.

The Chrysanthemum Shows.

Now that the exhibition hurly-burly is done for the season, and the battles have been lost and won, it may be not unprofitable to take stock of the general results of the contests. Probably, the first deduction drawn from the review will be that Chrysanthemum shows differ so little from each other in any one season, or from year to year, that it is questionable whether for several years any appreciable advance has been made in what growers for exhibition term quality, whilst in not a few cases there has been undoubted falling off in quantity. As such an enormous number of shows is held in the course of about three weeks, it is hardly to be regretted if some deficiencies in bulk have displayed themselves. But the most serious features in the shows is found not so much in the comparative decadence in quality, but in the absence of novelty, and in the objectionable methods of growing and of showing, especially cut flowers. One great advantage which the Chrysanthemum has over florists' flowers in general, is that it admits of much more variety and less of red-tape-like formality. Hence, whilst the admirers of the symmetrical, the artificial and the meaningless can indulge their proclivities to the full, the lovers of the natural, the graceful and the significant, can revel in the charms offered by a flower allowed to grow as nature intended it to grow, and with its beauties revealed and accentuated by the taste and skill of the grower.

There is something, indeed, to suit all tastes in the Chrysanthemum, and that is one of its greatest advantages. But what popularity the Chrysanthemum now enjoys as a show flower is more due to the introduction of the beautiful Japanese varieties than to any other cause. How the incurved kinds would have stood in popular favour now had they still been the chief elements of exhibitions, it is not at all difficult to assume. Their general monotony, their absence of elegance, or distinctiveness of form, their artificial symmetry, revealing chiefly the art of the gardener, and but little of the history, the natural conformation, or the innate beauty of the flower, would have soon satiated even the most enthusiastic of growers. The Japanese varieties now occupy the chief position in collections, a far larger number of these being grown than of the older kinds. The essential feature of any of the incurved forms is found in perfect roundness of blooms, and the more nearly spherical and formal the better. On the other hand, the Japanese varieties are popular because of their varied forms and irregular outlines; and yet we have got what seems to be the best form and quality even in the Japanese.

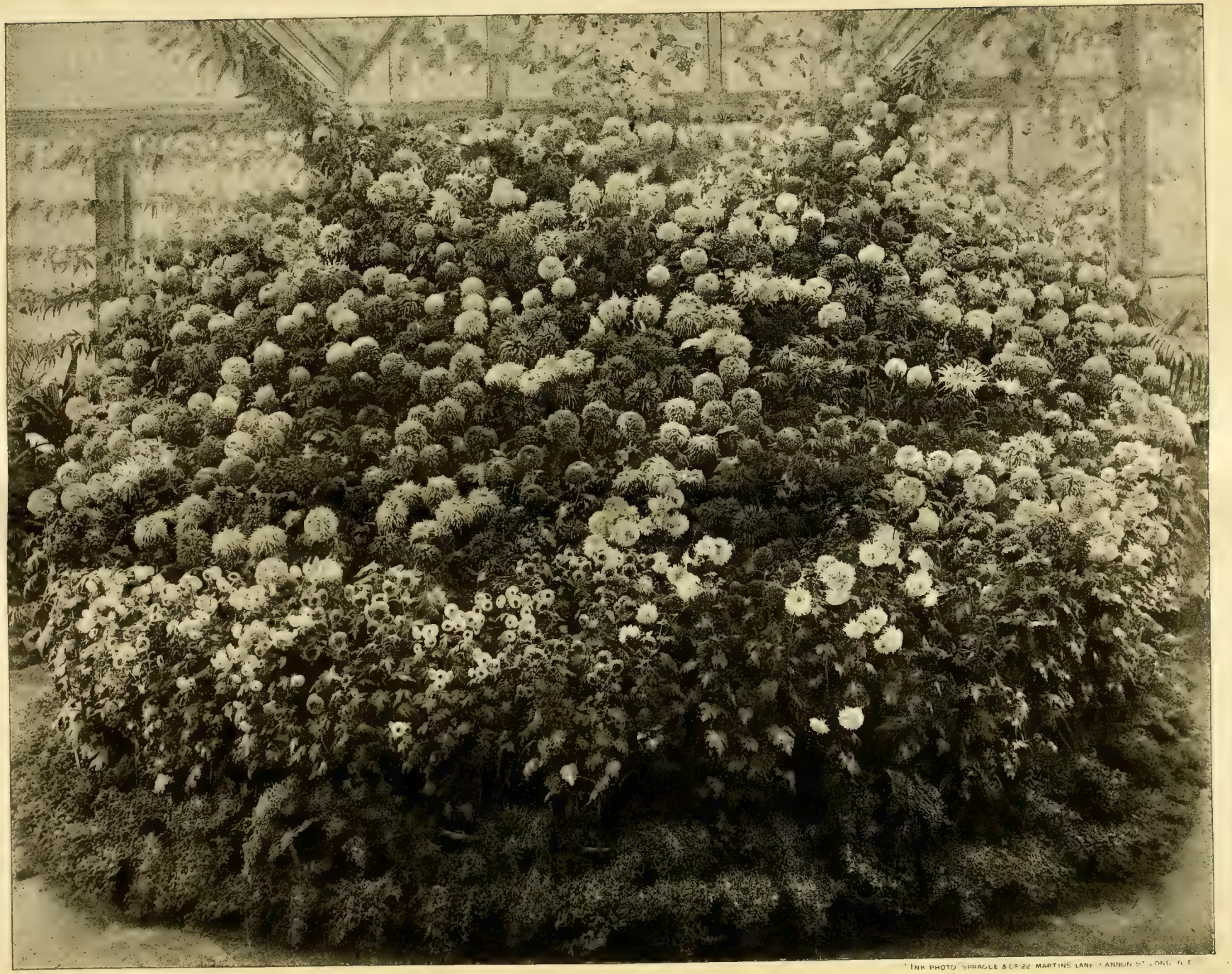
In all the flowers of recent introduction, whilst there has been undoubted variety and considerable development in size, there has been little advance in beauty or quality, whilst the new large blooms have been specially marked by coarseness. It is difficult to understand so-called florists who profess to prize any flower solely for beauty and quality, favouring these gross Japanese Chrysanthemums, because of their size. Under no circumstances can these big blooms be shown to be a gain to horticulture; and, further, under no circumstances can it be shown that exceedingly large flowers of anything, whether Chrysanthemums or otherwise, exhibited at exhibitions, are desirable, useful, or beautiful. If the Chrysanthemum lovers who promote shows and prizes, and all the paraphernalia of exhibitions in honour of their favourite flower, wish to show some *raison d'être* for the existence of these things, they must set about defining—first, what particular features in the flowers constitute ideals of perfection; and, second, what particular benefit is likely to result to horticulture from the realisation of these ideals.

We venture to dissent from any "standard of properties" which regards mere size as one feature of value, or lumpy rotundity as another, or which tends to the production in plants of a few blooms of inordinate dimensions in preference to many in succession, though of smaller size. It is even now apparent that some revulsion of sentiment against big flowers, and the methods of culture which produce them, is being evolved. The past season has, for instance, been so provocative of damping, that thousands of huge blooms, perfected at no small cost for labour and general culture, fell away before the eyes of the growers like rotten sheep in an epidemic; and when these monsters have succumbed, there is nothing left to show for all the trouble which had been bestowed during the whole of the preceding year. Even if the blooms had been saved, after all, it seems difficult to understand how that form of gardening proper which we know as home horticulture—and which is the most attractive of all forms of gardening—is in any way benefited by the stripping of the Chrysanthemum plants in a wholesale fashion of their blooms, and sending them off to show here, there, and everywhere; whilst for the home decoration nothing presently remains. If it be pleaded that these flowers are grown not for beauty or interest, but solely in the hope of winning prizes for the growers, there is little further to be said beyond this, that it may be prize-winning, and so far pecuniarily profitable to a few, but it is not an object to which societies founded for the promotion of horticulture should be expected to devote their energies.

Perhaps it will be said that the same objection applies to other popular show flowers—Roses, Dahlias, Carnations, &c., but the analogy does not hold good in these cases, as a score or two of blooms cut from plants which produce these flowers are seldom missed, and their places are soon taken by numerous others. But the Chrysanthemum which is to produce its show flowers is so carefully treated to that end, that beyond being one of the tallest and gauntest of plants, and one of the most unpicturesque, it is so hard disbudded, that once the two or three flowers, the full product of a year's elaboration, are removed, all is gone—nothing remains whatever for future use or beauty. This season the flowers on thousands of plants collapsed utterly long before they could be utilised, like fat bullocks, as prize winners, and with dismay the growers saw anticipated wealth slipping through their fingers because of the ravages of the damp and mildew. There is something almost ludicrous, if not pitiful, in the case of the grower of hundreds of show-bloom plants, who has at the close of the show season hardly a flower left worth cutting for any purpose, his plants an array of bare poles. Compare this with the brilliant shows yet being made by those who, despising the meretricious attractions of the show tables, grow plants only that they may naturally produce bloom for the decoration of gardens and houses, and be the delight of their employers. Whilst, in the one case, there is hardly a flower left, in the other, bloom of the most beautiful description may be had in quantities right up to the end of the year.

It may be pleaded that Chrysanthemum exhibitions have done much to popularise the flower. That goes without saying, but all the popularity resulting in no way justifies the production of huge ungainly flowers, which can only be produced by a method of culture which is most unnatural, and which, when produced, are absolutely useless for all other purposes except to win prizes. Many of our most beautiful varieties are shut out of cultivation simply because, under no form of culture, can they produce the big blooms which find favour in the eyes of some judges. That fact of itself reflects severely upon Chrysanthemum exhibitions, and so it will continue to do, until the requirements of home or ordinary decoration are considered, and classes are provided for bloom in clusters, which shall be encouraged for beauty and effect in the cluster rather than for size. The cry is constantly being raised that Chrysanthemum cut flower classes at shows are so stiff, formal, and unpicturesque. That criticism is just, but it applies to most flowers shown in boxes; clusters of non-disbudded or naturally grown flowers would, however, do much to add variety in character of exhibit, as well as in beauty. At Chrysanthemum shows anything which may introduce elements of variety as well as of natural culture is sadly needed.

MR. WILLIAM RICHARDS.—There are, as we have good reason to know, a very large number of our readers, both at home and on the Continent, who will learn with great concern that Mr. W. RICHARDS, the Publisher of this Journal, has been obliged, from considerations of health, to quit his post temporarily and to proceed to New Zealand. That he may have a pleasant voyage, and that his respite from the



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GROUP OF CHRYSANTHEMUMS AT COOMBE LEIGH.

anxieties and worries of his position as business manager of this Journal for the last twenty years may result in his complete restoration to health, is a feeling that will be entertained by all who have the pleasure of his acquaintance, and most decidedly by those with whom he has been associated so pleasantly and with so much profit in the conduct of the *Gardeners' Chronicle*.

Group of Chrysanthemums in Conservatory (See Supplementary Sheet).—Our Supplement, taken from a photograph kindly lent to us by Mr. C. Orchard, shows a group of Chrysanthemums in Mr. J. Galsworthy's conservatory at Coombe Leigh, Coombe Warren, Kingston-on-Thames. The groups exhibited by Mr. Galsworthy's former gardener, Mr. C. Orchard, at Kingston-on-Thames and at the Crystal Palace, attracted a deal of attention on account of the dwarf style in which the plants were grown, the high quality of the flower, and good foliage. The plants were grown in what is known as the cutting-down method, advocated for some years by Mr. Orchard, and explained in the paper read by him before the Centenary Conference at Chiswick, on Nov. 6th. The group figured was brought from the Kingston Exhibition, and arranged in the Conservatory at Coombe Leigh, with a few pompons placed in the front, and small plants of Selaginella denticulata and Adiantum cuneatum in small pots were arranged in front of the others to mask the pots. The group contained about 300 plants of a height in the front of 18 inches, and at the back of 9 feet, the back plants being raised on pots; the depth of the group was about 11 feet, and width ten feet. The principal incurved and Japanese, and also the large Anemone-flowered varieties of that period, were conspicuous features, and the plants were supported by wire, no sticks being employed, a method of showing that is gradually gaining ground for exhibition and decorative purposes.

The Linnean Society. — On December 5, Mr. J. G. Baker, Vice-President, in the chair, the following were elected Fellows of the Society:—Rev. J. H. Crawford, Major A. R. Dorward, Messrs. S. A. Moor, W. Rome, J. Shirley, H. L. Stonham, C. W. Turner, J. T. Tristram Valentine, J. H. Veitch, J. J. Walker, and John Watson. Mr. George Murray exhibited and made some remarks upon specimens of Struvea macrophylla and S. plumosa. Mr. A. W. Bennett communicated some observations on a new and a little known British freshwater Algæ Schizothrix anglica and Sphœrophea annulina. It was pointed out that Schizothrix of the "Phycologia Britannica" is really an Inactis. Mr. E. M. Holmes exhibited as a new British Marine Alga a specimen of Gracilaria divergens, a rare native of the warmer portions of the Atlantic and the Mediterranean, which had been recently found at Brighton by Mr. J. Myles. The specimen exhibited possessed tetrasporic and cystocarpic fruits not described by Agardh. Mr. Pascoe exhibited (with a view of eliciting information as to the *modus operandi*) a number of Crustaceæ and certain shells of the genus Phorus, having various foreign substances attached to them. Commenting upon these specimens, Prof. Stewart gave an interesting account from personal observation of the way in which certain Crustaceæ collect and adorn themselves with fragments of shell, seaweed, &c., apparently as a protective covering. Mr. T. Christy exhibited and made remarks on some "liquid amber" or resin, of Altingia excelsa, from Cochin-China. A paper was then read by Mr. George Massee on the life history of a stipitate freshwater Algæ, illustrated by some excellent diagrams. A discussion followed, in which the Chairman, Mr. Murray, and Mr. Bennett took part.

—— At the evening meeting, to be held on Thursday, December 19, 1889, at 8 p.m., the following papers will be read:—1. "Intensive Segregation and Divergent Evolution in Land Mollusca of Oahu," by Rev. John T. Gulick; 2. "Dictyopteris; with Remarks on the Systematic Position of the Dictyotaceæ," by T. Johnson.

Railway Rates.—The Board of Enquiry, so far, has not been barren of results to the horticultural trade. The following articles have been removed from the classes in which they were originally placed:—

Manure (street, stable, or farmyard in bulk)	from Class	B	to Class	A
Handles (broom, rake, spade, fork, shovel, pick)	,,	2	,,	1
Cocoa-nut fibre	,,	3	,,	2
Flax (for sowing)	,,	3	,,	2
Forks (digging)	,,	3	,,	2
Grapes	,,	5	,,	3

We understand that negotiations are still pending with reference to other articles mentioned in the Supplement to our issue of April 20 last.

Royal Horticultural Society. — The Council of the Royal Horticultural Society have lately had before them the very difficult work which always has to be done at a year's end—viz., to determine on the names of three members of Council whom they will recommend (according to the provisions of the charter and bye-laws) for retirement in the ensuing year. The retiring members are not eligible for re-election, and when all have laboured so hard for the Society it is very difficult to say whose absence will be least detrimental. The same unenviable work occurs in the appointment of the several Committees, who have done such good and excellent work in the past year; for though in this case the retiring members are eligible for reappointment, the Council is of opinion that, as in their own body, so also in the Committees, a small infusion of new blood every year when it can be obtained is desirable, and there is probably no member of any Committee who would not be thankful for a year's rest from labour. A vote has been taken on the question of changing the hour of meeting of the Fruit, Floral, and Orchid Committees from 11 a.m. to 12 noon, and in compliance with the wish of an overwhelming majority of the present members, the Council have determined to adopt the later hour for next year. The following plan of arrangements, meetings, lectures, &c., has been drawn up and adopted. Other gentlemen besides those named have been invited to contribute papers, but it would hardly be courteous to mention their names until they shall have signified their consent. The meetings, &c., will be held at 3 p.m. in the Drill Hall unless otherwise stated:—

Jan. 14.—"A Method of Winter Gardening," Rev. W. Wilks.
Feb. 11.—Annual General Meeting at 117, Victoria Street.
March 11.—"Hippeastrums" (Amaryllis), Mr. Harry Veitch, F.L.S., and Mr. James Douglas.
March 25.—"Saladings," M. Henry de Vilmorin.
April 8.—"Spring Flower Gardening," Mr. W. Ingram.
April 15, 16, 17, 18.—Daffodil Exhibition and Conference at Chiswick. Readers of Papers: Mr. James Walker, Rev. G. H. Engleheart, Mr. J. T. Bennett-Poë, Mr. F. W. Burbidge, F.L.S., Rev. C. Wolley Dod, &c.
April 22.—Primula and Auricula Society's Show. "On Indian Primulas."
May 13.—"Hardy Spring Flowering Shrubs and Trees."
May 28, 29.—Great Show in the Inner Temple Gardens.
June 10.—"Herbaceous Pæonies," Mr. Geo. Paul and Mr. R. Irwin Lynch.
June 24.—Exhibition of Tea Roses by the National Rose Society. "Hardy Herbaceous and Alpine Plants," Rev. C. Wolley Dod.
July 8.—"Cultivated Lilies."
July 22 and 23.—Carnation, Fern, and Selaginella Exhibition at Chiswick. Carnation Society's Show.
July 22.—Conference on Carnations. Readers of Papers: Mr. M. Rowan, Mr. H. Turner, Mr. R. Dean.
July 23.—Conference on Ferns and Selaginellas. Readers of Papers: Mr. J. G. Baker, F.R.S.; Mr. C. T. Druery, Mr. J. Birkenhead, Mr. E. J. Lowe, F.R.S.; Professor Bower, F.L.S.; and Mr. W. H. Gower.
August 12.—"On Fruit Drying by Evaporation as Practised in America," Mr. E. W. Badger.
August 26.—"Hollyhocks," Mr. James Douglas.
September 9.—"Gladiolus," M. V. Lemoine and Mr. J. Kelway.
September 23, 24.—Exhibition of Dahlias and Grapes at Chiswick.
September 23.—Conference on Dahlias. Readers of Papers: Mr. T. W. Girdlestone, Mr. Shirley Hibberd, Mr. Walter H. Williams, &c.
September 24.—Conference on Grapes. Readers of Papers: Mr. T. F. Rivers, Mr. R. D. Blackmore, &c.
October 14.—"On Crinums," Sir Charles Strickland, Bart.
October 28.—"Trees and Shrubs for Large Towns," Dr. Masters, F.R.S.
November 11.—"Chinese Primulas," Mr. A. W. Sutton.
December 9.—Ordinary meeting.

Incidentally we may mention that the *Journal* of the Royal Horticultural Society contains the statistical returns by the Rev. W. Wilks, and the proceedings of the Rose Conference. A fuller account will be found in our next number.

The Glasgow Botanic Gardens.—On December 9, the seventy-second annual meeting of the proprietors of the Royal Botanic Institution of Glasgow was held in the Secretary's office, Hope Street—Mr. W. Connal presiding. Mr. Alex. Sloan submitted the report, from which it appeared that the Corporation of Glasgow had expended during the year £1651 3*s.* 5*d.* in maintaining the gardens, which sum, less £827 18*s.* 8*d.*, the revenue derived from admission tickets and feu-duties, had been added to the debt. At the close of last year the debt amounted to £52,735*s.* 12*s.* 5*d.* The interest on that was £2356 0*s.* 9*d.*, and with £823 4*s.* 9*d.*, the amount of the deficit on the maintenance of the gardens for the year, increased the debt to the Glasgow Corporation to £55,914 17*s.* 11*d.* In addition there was a sum of £868 5*s.* 1*d.* due to the Union Bank by some of the directors, and the arrears of feu-duty payable by the Company amounted to £1250 0*s.* 9*d.* A shareholder inquired if there was no possibility of the proprietors persuading the Corporation to open the gardens on Sunday? The Secretary replied that there was no doubt when the gardens were taken over by the Corporation they would be open on Sunday, as the parks were; but the Corporation had intimated their refusal to open the gardens on Sunday in the meantime.

Chiswick Gardeners' Association. — A well-attended meeting of this body was held in the Council-room at the Royal Horticultural Society's Gardens on Friday evening, December 6, when Mr. J. Barry read an interesting paper on "School Gardens, advocating, where possible, the formation of small plots as gardens to our schools as a means of instruction and recreation to the children. Additional interest was imported to the proceedings by the fact that Mr. George Mitchell ("One from the Plough") attended, and gave his warm support to the various suggestions thrown out, in a characteristic spirited address.

"The Garden Annual" for 1890, which has just been issued, will be found as useful as in former years. It contains, besides the lists of gardens throughout the Kingdom, an alphabetical list of gardeners; also of nurserymen, sundriesmen, builders, &c., in the United Kingdom, and the principal of the foreign traders. The corrections and alterations since the publication of the present year's volume, are brought well up to date.

Ivies on Trial at the Royal Horticultural Society's Gardens in 1889.—The following Ivies received an Award of Merit at Chiswick on July 18, with an award:—Hedera

gracilis, H. conglomerata, H. succinata, H. palmata nova aurea, H. marmorata elegantissima, H. palmata, H. minima, H. pimalacca, H. gigantea, and H. argentea major; and the following received on the same occasion a First-class Certificate:—H. canariensis azorica, H. Rœgneriana, H. lobata major, H. Glynnii, H. dentata, H. poetica, H. arborea flava (yellow fruit), H. rhombea variegata, H. Hibernica variegata, H. helix-minima, H. pedata, H. rhombea obovata variegata, H. marginata purpurea, H. Lee's new Silver, H. arborescens marginata, H. maculata latifolia, and H. madeirensis variegata.

HORTICULTURAL BUILDINGS AND APPLIANCES. M. JOLY, the indefatigable, has published a report on the greenhouses, &c., exhibited at the recent Paris Exhibition. M. JOLY's conclusion is that on the whole horticultural buildings and the objects exhibited in class 78 did not show much progressive improvement when compared with those shown in 1878.

JOHN BALL.—A sympathetic account of the career of this gentleman, from the pen of Mr. W. T. THISELTON DYER, occurs in the number of the *Journal of Botany* for the present month.

THE ORCHIDÉENNE.—The meeting on Sunday last was held at the "Horticulture Internationale," when, in spite of the hard frost, the exhibits were numerous and of good quality. The principal exhibitors were MM. WAROCQUÉ, VERVAET ET CIE, MITEAU, WALLAERT, LINDEN, VASSEUR, DU TRIEU DE TERDONCK, PEETERS, and Madame BLOCK. Diplomas of honor of the first class were awarded to Odontoglossum Duvivierianum, shown by M. WAROCQUÉ, to Vanda Amesiana, by M. PEETERS. A diploma of honour of the second class was assigned to Brassia caudata var. Orinocensis from M. LINDEN. First class certificates of merit were allotted to Cypripedium Leeanum var. "Burford Lodge," shown by M. DU TRIEU DE TERDONCK, to Cattleya labiata var. autumnalis, by M. PEETERS, to Cypripedium Spicerianum var., by M. WALLAERT. Second class certificates of merit were awarded to Odontoglossum Boddaerti from M. LINDEN, to Cattleya Bungerothii from Madame BLOCK. Cultural certificates of the first class were given to Odontoglossum odoratum var. from M. WAROCQUÉ, and to Cymbidium Mastersii album from M. WALLAERT. A second class cultural certificate was awarded to Cypripedium Chantini from M. PEETERS.

ROYAL PRESENTATION.—On the occasion of the visit of H.R H. Princess BEATRICE of Battenburg to Reading, on Tuesday, the 3rd inst., at the opening of a Bazaar in the Town Hall in Aid of the Restoration of Holy Trinity Church, Miss DODDS, on behalf of Messrs. SUTTON & SONS, had the honour of presenting Her Royal Highness with a bouquet of Orchids.

SINGAPORE.—Mr. RIDLEY has published a report on the damage inflicted on the Coco-nut Palms in Singapore by two beetles. The illustration which he gives shows more forcibly than words can do, the terrible extent of the mischief. One beetle is the Oryctes rhinoceros, recently figured in the *Gardeners' Chronicle;* the other is the red weevil, Rhyncophorus ferrugineus. In the case of the Oryctes, it is not the grub which is destructive, but the perfect insect which flies by night to a Palm and burrows into the heart of the terminal bud or cabbage, not unfrequently destroying the growing point and causing the death of the tree. The pest can be kept in check by diligent destruction by fire of the decaying foliage in which the grubs live, and of the dead trees. The beetles may be extracted with a dart fixed on the end of a wire probe. Unless, however, these operations are made compulsory on all the growers, there is no hope for the careful planter surrounded by others who are careless. The red weevil deposits its eggs into the base of the living leaves of the Palms, the eggs are hatched, and the grubs find plenty of food in the succulent foliage. Their extirpation is a more difficult matter than in the case of the preceding, but the same methods may be tried.

STOCK-TAKING: NOVEMBER.—The time of Christmas is nigh, and the song of the grocer is heard in the land—personally or by deputy! And no wonder: for to him have been coming, for many weeks past, from far distant ports, white-winged carriers, laden with what will in a few days hence grace the Christmas dinner-table all over the land. Great is the grocer, but very much more so the consumer of his dainties. As a rule, the "Trade and Navigation Returns" are a wonderful compilation of figures, and so of facts; the returns for November show that "plus has it" very much indeed, with but one very trifling exception, as will be noticed in the subjoined extracts from the "summary of the imports from foreign countries and British possessions":—

	1888.	1889.	Difference.
	£.	£.	£.
Total value of imports	35,223,935	41,303,409	+6,079,474
§II.—(A.) Articles of food and drink — duty free	11,253,383	12,566,244	+1,312,856
(B.) — do., dutiable	2,537,472	3,108,853	+571,381
§VI.—Raw materials for textile manufactures (including Flax, Hemp, and Jute)...	8,468,482	10,869,409	+2,400,927
§VII.—Raw materials for sundry industries and manufactures (including wood and timber, hewn, sawn, split, dressed; vegetable materials, for paper-making, &c.)	3,428,423	3,853,895	+425,472
§IX. — Miscellaneous articles (including Clover, Grass, Flax, Rape, Linseed) ...	1,508,562	1,386,766	—121,796

Still, looking at these figures from the Christmas or grocer aspect, one thinks of possible pale faces and of doctors' bills following upon lack of sufficient powers of digestion; but surely, in these School-Board days no good boy—or girl—will ever dream of overtaxing his or her powers of digestion, and, as a rule, these are very great. The following excerpts from the general returns will be found of interest:—

		1888.	1889.	Difference
§ II. Fruit:—				
Apples, raw	bush.	942,466	688,068	—254,398
Unenumerated, raw ...	,,	182,010	134,448	—47,562
Onions	,,	339,216	365,170	+25,954
Potatos	cwt.	63,800	21,350	—42,450
Vegetables, raw, unenumerated	Value	£12,365	£18,079	+£5,714

To wind up "seasonably," it may be noted here that the import of Oranges and Lemons for the month amounted to 447,143 bushels, as against 376,450 bushels for November last year.

THE DISAPPEARANCE OF BRITISH PLANTS.—A committee of the British Association presented to the recent meeting a report on this subject dealing especially with Scotland. A long list is given of interesting and beautiful plants which are either exterminated or within measurable distance of becoming so. The botanists themselves are not considered to be free from suspicion—a circumstance to be the more regretted as it will afford an additional reason for landlords to refuse access to their woods and mountain paths. One paragraph in the report concerns the gardening press. It runs thus:—"Many correspondents draw attention to the insertion by gardening periodicals of the advertisements of collecting dealers, and express the hope that the amount of revenue derived from these advertisements is not so great as to negative the possibility that the gardening journals may be induced, by discontinuing their insertion, to strike a heavy blow at a process which is depriving many districts of our land of one of their chief natural beauties." As to this matter, the committee may be well assured of the full sympathy of the "editors" of the gardening papers. It may, however, be pointed out that advertisements of this character are few and far between in the gardening papers, and that advertisement managers are far more pleased to receive orders from legitimate members of the trade who make it a regular business to cultivate these plants, than from casual vendors, of whose respectability they know nothing. The advertising department of all papers is managed on purely commercial principles, and is not influenced by sentimental considerations. Most, if not in all cases, it is managed quite independently of the editorial department—a fact that the committee have overlooked, and one which correspondents, in spite of constant reminders, are apt to forget. The casual vendors who rob our woods of Ferns and Primroses should certainly be discouraged. The most effectual way of doing this would be to purchase from those who make a specialty of growing and propagating these plants. In some of our nurseries there are probably many more individual plants of certain varieties—of British Ferns, for instance—than could be found in all England in a wild state; and these have, except in the first instance, not been uprooted from their native haunts, but carefully and diligently increased by the art and skill of the gardener. Our botanic gardens also might do much to stop the nefarious traffic alluded to by propagating and distributing among the connoisseurs specimens of the rarer British plants.

YEMEN.—M. DEFLERS has just published a catalogue of the plants collected by him in 1887, in the mountains of Arabia, Felix. The catalogue is preceded by an historical introduction summarising the work done by previous explorers, among which, however, we find no mention of EDGEWORTH's Florula of Aden, published in the *Journal of the Linnean Society*. The second part of this volume is occupied with the narrative of the journey, with various meteorological data which will be useful, and numerous interesting particulars concerning certain plants of interest. The *Voyage au Yemen* may be had from Messrs. WILLIAMS & NORGATE.

ENGLISH FRUIT AND FARMING.—A contemporary, *Land and Labour*, has the following on profitable fruit-growing:—During the sojourn in England of the deputation of French working men from Paris they were taken over the central stores of the Co-operators, and were informed, amongst other things, of the vast quantities of foreign cheese which we annually consume. Their comment was, "Why, what is the matter with your English cheeses?" It were well if cheese were the only article of food imported which we ought to produce for ourselves. £12,000,000 worth of butter, and £3,000,000 worth of eggs, figure amongst our food imports, and in addition to these we buy of the foreigner £8,000,000 worth of fruit, of which a large part ought to be home-grown. We have received a letter from Mr. SAMUEL SAUNDERS, a fruit grower, of Market Lavington, in which he supplies us with some very interesting facts. In the same parish was a man who farmed 2,000 acres. He employed labour to the extent of 13*s.* per acre per annum, and failed for £36,000. The landlord then took the farm into his own hands, and reduced the labour expenses to 11*s.* per acre per annum. But Mr. SAUNDERS pays £22 10*s.* per acre per annum in wages, and yet makes a profit from inferior land.

CHRYSANTHEMUMS IN BOSTON.—*Garden and Forest* says:—The Chrysanthemum has fairly captured the town of Boston. The public flocked to the Horticultural Society's exhibition of the favourite flower, which fills every florist's window to overflowing. It is sold at the street corner in profusion and excellence, and a woman is rarely seen in the streets without a bunch, big or little, in her hands or on her dress. This remarkable popularity has grown in

recent years, for it appears, from an authoritative article published in the *Boston Evening Transcript*, that the first record of the exhibition of Chrysanthemums in the States was in 1830, when fifteen varieties were shown at an exhibition of the Massachusetts Society. The first prizes for Chrysanthemums, amounting to a total of 17 dols., were offered in 1861. Seven years later the fall exhibition of the Society was first called the "Chrysanthemum Show," and the prizes were increased to 55 dols. They were increased to 150 dols. in 1879, and an entire day was devoted to the exhibition. The exhibition in 1882, although planned for only a single day, excited so much interest that it was kept open two days, and this plan was continued until 1886, when three days were required, as they have been in succeeding years, to satisfy the popular curiosity. The prizes, too, have been gradually increased until they now amount, in the aggregate, to the handsome sum of 741 dols.

Hybridisation in Roses.—It is occasionally difficult to determine whether a particular form (wild or cultivated) is a pure species, or of hybrid origin. M. Crépin proposes, as a means of arriving at a conclusion, that the proportionate number of imperfect pollen-grains be ascertained by microscopic investigation. Doubtless a large number of observations, extending over many seasons, would afford valuable criteria. M. Crépin himself says that the proportion of imperfect to perfect pollen differs in flowers taken from the same bush in different years, probably from differences of season.

Chrysanthemums in Japan.—We sometimes find business establishments recommending themselves to notice on the ground that they were established so many decades ago. What is this in point of time with the circumstance narrated by Mr. Yoshida, a nurseryman of Tokio, in the *Bulletin d'Arboriculture*, that Chrysanthemum shows (*concours*) in Japan date from A.D. 900, having been organised by the Emperor Ouda.

Notices of Books.

The Forest Flora of New Zealand. By T. Kirk, F.L.S., Wellington, New Zealand. Folio. (Published by the New Zealand Government.)

This is a worthy outcome of the Floras of New Zealand, published now many years since by Sir Joseph Hooker. When the series of Colonial Floras was first projected, the principle was laid down that before any substantial progress could be attained in the knowledge of the uses of plants, it was necessary to know the plants themselves. Knowledge of a sort can no doubt be gained without any preliminary scientific investigation, but it is that sort of knowledge which ultimately necessitates much more trouble in the unlearning than was expended in the acquisition.

Scientific knowledge is incomplete and imperfect, but, at any rate, it implies method, comparison, and discrimination, attributes which are wanting in merely popular books, and the deficiency of which is even more marked in popular language. The following extract from the preface to Mr. Kirk's volume furnishes an apt illustration of our meaning:—

"The primary objects of the work are to diffuse a knowledge of the forest researches of the colony—to describe the chief methods of working and conversion employed, and to establish a uniform series of common names. The last object, especially, is one of considerable importance, as, owing to the loose manner in which common names are generally employed in the colony, timbers of but little value are frequently used instead of the kinds specified, often causing needless expenditure and great inconvenience. One instance may be mentioned here. At least a dozen kinds of small-leaved trees are termed 'Birch,' with the prefix 'black,' 'white,' 'red,' 'brown,' 'grey,' or even 'yellow,' applied, as the imagination of the bushman may suggest, scarcely any two bushmen being agreed as to the correct application of the qualifying term, while architects and contractors for the most part are but little better informed.

"The brown Birch of Otaga is the white Birch of Nelson; the white Birch of Westland, again, is a totally different tree; the black Birch of Auckland is termed red Birch in Wellington, brown Birch in some parts of Nelson, while in Otago it appears to be termed indifferently black Birch or red Birch. Other cases where similar confusion exists will be found recorded in various parts of this work.

"The plan of the work may be briefly stated. A separate account is given of each species, the headlines stating the systematic name, the Native name, or, in some cases, a common name, which may be substituted with advantage; also the name of the natural order to which the plant belongs, with a reference to the plate on which it is represented.

"The first portion of the text contains historical information and other particulars of general interest connected with the plant, an account of its dimensions, habit of growth, &c., and a more or less detailed statement of the structure of the flower and fruit, devoid of technicalities. This is followed by a concise account of its properties and uses, and, in the case of the more important kinds, the mode of working the forest, conversion, commercial value, &c. A brief statement is given of the distribution of the genus, and a more detailed account of the distribution of the species. The article is completed by a botanical description of the species, and an explanation of the plate. In most cases enlarged representations of the parts of the flower and fruit are given to facilitate identification."

The above extract will suffice to show the general character of the book, its object and purpose, and the method which the author has adopted in fulfilling it.

It rests with the critics now to say how far the author has succeeded. Criticism in this case will be of value, as it comes mainly from two sets of experts—those who, without any necessary personal knowledge of New Zealand, are yet more or less familiar with its flora, and who can appreciate the botanical acquirements of the author, and those in the colony who are more familiar with local circumstances and local requirements.

Writing here from the point of view of the home botanist, we can but congratulate all concerned on the production of what is an excellent book. The descriptions are carefully drawn up, and are so constructed that they may readily be understood even by those whose botanical attainments are of the slightest. We note one or two points of minor importance, in which, as it seems to us, the book might have been improved. The general omission for instance, of references to the larger or to the smaller New Zealand floras is a defect. On the other hand, the descriptive matter is longer than it need be. It is in fact comprised in two separate paragraphs where one would have been sufficient.

Many of the New Zealand shrubs are inmates of our winter gardens, and some are hardy; Coprosma, Cordyline, Griselinia, Olearia, Panax, Pittosporum Plagianthus, Leptospermum, Metrosideros, Veronica, and many others suggest themselves. Many of these shrubs have a peculiar aspect, what botanists term "facies," which is so readily recognisable, that it is very often possible for the observer to say this or that is of New Zealand extraction, even when he may be ignorant of the genus and species to which the plant belongs. Words and even pictures fail in representing this peculiar appearance. Many of the species are structurally remarkable, and the species of Panax and of Dacrydium are surprisingly variable in the form of their foliage. Woe to the unlucky botanist who attempts to describe one of these plants from incomplete material; the very next consignment may serve to show that his supposed new species is only a stage of growth of some already known species. Herein the local botanist and forester has an immense advantage over his colleague at home. The student in the herbaria or garden can naturally only deal with the material before him, and this is of necessity generally incomplete. The field botanist and forester passes in review at different seasons, thousands and thousands of specimens in all stages of growth, from the seedling to the mature tree. The home student has generally the advantage in the matter of books and pictures, but what are they in comparison with Nature's books and pictures unfolded before the lucky eyes of the botanical traveller?

The New Zealand Conifers are specially remarkable on all accounts. Their botanical history and geographical distribution are most interesting to the student; their beauty as cultivated plants in the winter garden is very considerable, *e.g.*, Agathis australis, Libocedrus Doniana, the species of Phyllocladus ("P. glauca, the most charming of all the New Zealand Pines"), and Dacrydium, which are both graceful in habit and interesting in structure. As timber trees, and as furnishing gum resins, they are most valuable. Dacrydium cupressinum affords remunerative employment to a larger number of workmen than any other tree in the colony. Podocarpus dacrydioides is a noble tree, affording one of the most striking sights in New Zealand. As for the famous Kauri we shall do well to extract what is said about it by Mr. Kirk."

"Agathis australis (the Kauri) is the monarch of the New Zealand forests, and although it does not rival the giant Sequoias of North America in its extreme height and circumference, it excels them in the intrinsic value of its timber, which possesses a larger number of good qualities than any other Pine known to commerce. The Kauri frequently grows in rocky or broken situations, and usually forms large clumps or groves, mixed with other trees. Although it is often the prevailing tree in extensive forests, it is comparatively seldom that it occupies large areas to the exclusion of other trees. The interior of a large Kauri forest affords one of the most impressive scenes in the colony—smooth, grey trunks rise on all sides, like massive columns, perfectly straight and symmetrical to a height of 80 feet or even 100 feet, with a diameter of from 4 feet to 12 feet or upwards. If growing in close proximity to each other they attain a greater height, but the trunk is less massive, and tapers gradually into the small head; if growing some distance apart, the trunk is of large diameter, with but little difference between the base and crown. The head of solitary trees is large and spreading, the main arms being sometimes over 2 feet in diameter. The broad, leathery, green leaves have a most refreshing appearance in the driest weather, and bear no resemblance to the needle-like leaves which characterise the Pines of the Northern Hemisphere. The glaucous or cinereous hue of the bark under certain atmospheric conditions appears to surround the trunks with an undefined haze—an effect which is only to be found in a Kauri forest. The bark scales off in large flat flakes, and, as it decays, forms a mound of humus surrounding the base of each tree, and is highly charged with resin, which exudes from the slightest wound in the trunk or leaves, all parts of the plant being excessively resinous. As a rule, undergrowth in a Kauri forest is less dense than in the ordinary mixed forest; Alseuosmia macrophylla, a dwarf evergreen shrub, with fragrant crimson flowers, is abundant, and is commonly termed "Honeysuckle;" Astelia trinervia, a liliaceous plant, with narrow leaves, 6 to 8 feet long; and a dwarf Tree Fern, Dicksonia lanata, with stems from 2 to 6 feet high, often form the prevailing undergrowth over large areas. Mention must, however, be made of the Mangemange, Lygodium articulatum, a graceful climbing Fern, with slender, tough, wiry, branching stems, which ascend shrubs and trees to a great height, binding them together by living network; the stems of this Fern are so tough and strong that they cannot be broken, although they may be easily cut. The Kauri is usually from 80 to 100 feet high, with a trunk from 4 to 12 feet in diameter; but much larger dimensions are often attained, specimens having been seen 150 feet high, while trunks are known with a diameter of from 20 to 24 feet. In the Tutamoe State forest, a tree named "Kairaru" by the Maoris was measured by Ranger H. S. Wilson, who found it to be 100 feet high to the first branch, with a circumference of 66 feet; another specimen in the same forest is named "Ngamahangahua," and measures 66 feet in circumference; at the height of 22 feet two branches are given off, and measure respectively 20 feet to 22 feet in circumference. A fine tree at Tarakiakia measured 100 feet to the first branch, with a circumference of 48 feet. A tree at Mercury Bay is stated to measure 80 feet to the first branch, and to be 72 feet in circumference. In some forests clumps of trees which would afford logs from 50 feet to 60 feet long, and from 48 inches to 60 inches square, are not uncommon. . . .

"The leaves are persistent for several years, but it is not easy to state the exact period of their duration; occasionally leaves may be seen partially embedded in the stem, and still green, in positions which show that they must have been formed more than a quarter of a century, as new leaves are only developed at the tips of the branches. It is uncertain whether the Kauri forms only a single cylinder of wood during each year, or more; the balance of evidence is in favour of the latter view."

In addition to its timber, this tree furnishes abundance of resin known as kauri gum, large quantities of which are also dug up at a depth of 6 to 7 feet from the ground, once covered by primeval forests of this tree.

Gum digging is a standard resource for the industrious in times of depression, and the Auckland gum-fields have proved, we are told, far more beneficial to the district than its gold-fields, no capital or machinery being required by the labourer beyond his gum-spear or spade.

We had marked many more passages for citation or comment, but we must refrain, from considerations of space, saying more than that the lithographic plates, 142 in number, are carefully and correctly executed, being far more useful than the costly but relatively useless illustrations with which many so-called botanical works are adorned. Appendices, tables, and indices, render the work very complete, and easy to consult.

English Idylls. By P. H. Emerson, small octavo, pp. 160. (Sampson, Low, Marston & Co.)

A prettily got-up book in white binding and broadly margined pages. Something that may be picked up to while away an idle hour, and descriptive of certain phases of East Anglian life, and chiefly that of the fisherfolk and bargemen of the estuaries of the Yare, the Irwell and the Colne, and deeply inreaching bays and creeks of the Suffolk and Essex coasts.

The matter consists of stories in prose and poetry, interwoven with the superstitions and folk-lore of the people, the vernacular of the district being employed. Sometimes there is a moral lesson enforced, but usually it has to be guessed from the text..

The writer appears to have a fairly wide acquaintance with the scenery of the district and with the dialect, and the people who speak it, but the effect of a perusal of his book is unsatisfying, and one feels that something much better might have been made out of the materials at hand. The best stories are: Bob Jack, Fatal Water, Silly Billy, Ellen and Kitty Witch.

ROSE BEDS.

At this season of the year, when preparations for new beds are in progress, it may be convenient to give illustrations (figs. 97 and 98, p. 697) of plans which have been found satisfactory in practice. For the use of them we are indebted to Messrs. William Paul & Son, of Waltham Cross, whose great experience gives their opinions special value. Messrs. Paul advocate simplicity of arrangement, and for the severe rosarian no doubt the sweet simplicity of the Botanic Garden, with its gridiron beds, is best. It is for the Rose, and the Rose only, that the severe rosarian cares.

The mode of growth of worked Roses is assuredly not very elegant, and excites no interest in the rosarian's breast except at pruning time, when he shows his sympathy for it by cutting it away freely. Such beds look well at the time of Roses, but for the remainder of the year no part of the garden looks so uninviting. It would be shocking heresy to suggest that anything should be placed in the Rose beds, though we know of gardens in the suburbs of London, where space is valuable, and also around certain French towns, where bulbs lighten up the beds in spring, annuals cover the ground in summer, and choice evergreens hide the bareness in winter. Digging is not allowed, but a copious mulch of short manure, covered with cocoa-fibre, provides shelter and food, and prevents the growth of weeds. But if the beds must be kept sacred to the Rose, it is easy to interpose between the Rose beds proper, others filled with Retinosporas, Euonymus, Boxes, &c., which will give an effect in winter, and which may be replaced by bedding plaints in summer. Again, supposing the beds are cut out of the grass, it is easy to dot at intervals specimen shrubs, which in winter will produce a good effect, and which in summer will heighten that of the Roses. Rose arches, Rose pillars, and festoons of Roses, all these can readily be made to form the framework of the rose garden or define its boundaries.

It is needless to say that the filling of the beds is a matter requiring taste and judgment. Fig. 98 represents the plan of a Rose garden at Mentmore, designed by Mr. Smith. Beds 1 to 4 were filled by Messrs. William Paul & Son, with crimson Roses; 5, 6, with pale pink; 7, 8, with very dark; 9 to 12, with white; 13 to 16, crimson; 17 to 20, with rose-coloured varieties. All these were dwarfs, the central lozenge-shaped beds alone being filled with standards. The beds in fig. 97, representing a Rose garden at Rheims, was filled by Messrs. W. Paul & Son in a similar manner. The names and colours of the Roses employed are not specified in this case, but any one with a knowledge of Roses and an eye for colour, such as every florist ought to possess, could readily arrange it for himself.

WINTER FLOWERING ZONAL PELARGONIUMS.

When grown well and purposely for winter flowers, the zonal Pelargonium is a valuable plant, and I was much struck with a group of young plants I saw recently at the Chrysanthemum exhibition in Birmingham. These were staged by Messrs. Pope & Sons, the well-known nurserymen. This led to my visiting their nurseries at King's Norton, to see the method pursued on an extensive scale. The cuttings are struck in the summer, and the plants at this present season are in 48's, some in 32's or 36's, and are compact capital stuff, with from three to five trusses of blooms, and will go on flowering for a long time yet. They are grown in the loam of the King's Norton district, leaf-soil, and sand, with a small quantity of artificial manure. The plants grow in low span-houses set apart for them, and dressings of artificial manure occasionally applied; too much must not be given, or an exuberance of growth results that is not favourable to flowering. Mr. J. Pope grows a large collection with a view to selecting the best kinds for decorative purposes and for sale, and at the present time the houses are bright with colours, ranging from snow-white to very dark crimson, and which, seen in the mass, it is no matter for wonder that the zonal Pelargonium keeps up its popularity. We are certainly getting new shades of colour in these plants, although a goodly proportion are still of some shade of scarlet, one must admire the size, substance, and exquisite form of many of the flower-pips, many of which are as large as a crown-piece.

Amongst the varieties in flower were Souvenir de Mirande, of a soft shade of pink with a large light centre, it should be in the smallest collections; Mr. David Saunders, a distinct shade of Lilac, shaded pink, and of very fine form, an improvement on Mrs. Strutt; Lady Frances Russell, a light shade of soft pink, with a small clear white centre; and one of the very best all-round varieties is Nellie Thomas, a dwarf and free blooming plant of the John Gibbons style, and apparently a fine bedder; Mrs. H. Barker, scarlet shaded cerise with a violet tint in it; Plutarch, a bright orange scarlet, large pip and fine in form and size of truss; Othello, cerise, very large and firmly-formed pip and truss; Mary Caswell, pale pink shaded blush, and lighter coloured large centre, very distinct; John Baldwin, light scarlet with clear white eye, and large pip; International, a fine white; Lady Tredegar, shaded rosy scarlet; Alexander Albrecht, bright and fine; Lady Chesterfield, shaded puce and crimson, with a good bedding habit; Lord Chesterfield, a delicate shaded light pink; Edith Little, blush veined with pink, distinct; Muriel, bright shaded carmine and scarlet, fine and distinct; Mrs. Strutt, and Evening Star. I must however disclaim against my description of colours being taken as accurate, as I have no acknowledged code of colours to go by. We have all much to thank the Messrs. Pearson of Chilwell for, as to them is due the introduction of so many fine zonals; and Messrs. Cannell of Swanley, have done the State some service by introducing many fine varieties, and other raisers have done a share.

Mr. John Pope appears to have faith in the French introductions, and he has a number of plants in flower, "Le Bruant" strain, of which Gloire Lyonnaise and Bruant are the types. These generally are strong growers, with immense trusses of rather long-petalled (from a florist's point of view), ill-shaped flowers, but gorgeous as decorative plants. Le Bruant is grown extensively at King's Norton, for it throws large trusses freely, and is so rich in crimson tints. Amongst the newer ones—and the whole of Bruant's novelties will flower here during the winter—the following must be regarded as distinct, and a decided acquisition in this class, viz.:—Mrs. E. G. Hill, very large shaded salmon and blush; Madame de la Roque, shaded salmon, bright and distinct, and of improved form; Madame Barnsby, salmon, with white margin, and large truss; Barbizet, pale satiny pink; François Dubergue, white, with large clear carmine centre; and one or two others, but few of the new ones are yet in flower.

In looking over M. Bruant's catalogue, I find that he cultivates at Poitiers a wonderful collection of English and continental varieties. Of the Bruant section, thirty-four varieties are described, Mrs. E. G. Hill and three others being new varieties of 1889; but amongst Bruant's varieties we are getting a semi-double strain, of which we shall see more subsequently; but one variety now in flower struck me as being an acquisition—Beauté Poitevine, salmon-pink, with broad white edge.

The Lilliput zonals are also increasing, for M. Bruant catalogues twenty-nine varieties, including two novelties of this year, and two of 1888, all being of continental origin. *D. S. H.*

CHRYSANTHEMUM SPORTS.

In the article on this subject, p. 656, are several errors in the pedigree of certain varieties; for instance, "Princess of Wales in 1873 sported to the rosy or lilac pink Hero of Stoke Newington." The writer thus confuses the family of Princess of Wales with the Princess Teck family, as it was from the latter in 1873 that we had Hero of Stoke Newington, which is a very different thing to the sporting of Princess of Wales to Hero of Stoke Newington. Again, he says, Hero of Stoke Newington sported in 1873 to Lady Dorothy; surely he is in error again. I thought it was as recently as 1888 or 1887 that this latter variety made its appearance with Mr. Buss, at Ewell in Surrey. From the National Chrysanthemum Society's catalogue we learn that Princess of Wales was introduced in 1864, and not in 1868 as the writer says it was, and from other sources also I learn that this was the case. Possibly he is alluding to Princess of Teck, which originated with Pethers in 1868, and from this parent many of our best varieties have come.

What is known to growers as the "Princess" family are those varieties which sported from Princess of Wales and her progeny. Mr. Heale was a sport of 1867, and from this we have the splendid variety, Miss M. A. Haggas, which has been so well shown this past season. It is a grand addition to the incurved section—a yellow of that kind was much wanted. The advantage of varieties descended from the Princess of Wales family over many others now in existence, as instance flowers like Jardin des Plantes, and Mr. Bunn, of the yellow varieties, is, that when they are well grown, little dressing is needed to present them in good condition at exhibitions. From Princess of Wales came Violet Tomlin, purple-violet, which, although an excellent addition to the class, is not quite of the great value as the

yellow form previously noted. This year we have a bronze-yellow sport from Princess of Wales, which shows a distinct break from the parent in point of colouring, although the bronze is not very deep in any of the flowers, except the terminal ones, which are always deeper than the others.

Whether it be in this group in particular, or in any other type of incurved varieties, the blooms of the "Princess" family from terminal buds are unfortunately of little use for any purpose; and for exhibition they are much too small and shallow in their build; and when grown in numbers on a plant for decoration they often have an "eye," and this absence of centre florets detracts from any flower belonging to the incurved section of Chrysanthemums. It is this manner, I fear, that the new sport Mrs. Coleman will prove less serviceable for exhibition than any of the type, because in larger flowers there is less of the bronze colour present—a fact to be deplored. Speaking of the "Queen" family, "R. D." says in 1882 Golden Queen of England threw a bronze sport; will he say what this was, as I have not heard of a bronze sport other than Bronze Queen of England, originating from the "Queen" family?

Amongst growers, the family known as the "Tecks" is a most popular one, and likely to increase its popularity very fast. I have this season seen a sport from the original, and which was the palest of lemon shades, or what would perhaps be more properly called lemon white, with flowers of splendid build, these being larger than its prototype, but whether its characteristics will become fixed or not I cannot as yet say.

Speaking of the Japanese sports, "R. D." says Alfred Salter sported to Lady Selborne. I should think he means James Salter, because Alfred Salter is one of the "Queen" sports. The parent of Lady Selborne—James Salter—is one of the oldest of Japanese varieties in this country, and one very useful as an early decorative flower, but now little seen on the exhibition table, as directly the blooms are fully expanded, the florets commence to coil one over the other, forming a close compact ball, which very much detracts from its appearance—otherwise it is a very free-flowering variety, and of medium height.

Sportive flowers, half white and half yellow, are a common occurrence in the incurved section; but what I consider more remarkable is, for a plant of one section to produce by sporting, a variety quite opposite in character—as, for instance, an incurved variety sporting to a true reflexed flower; or an anemone-flower resulting from the sporting of a reflexed variety; but, strange though it may appear, such cases are well known. Two years since, George Glenny sported to a true reflexed type, having exactly the same colour as its parent. This freak occurred with Mr. Horril, an enthusiastic amateur at Havant, not far from where I wrote. From the stock of this freak I grew plants this season, and was enabled to exhibit sprays nearly 2 feet long, clothed with flowers from top to bottom, each as perfect in form as it is possible to have a reflexed flower. Of all the decorative varieties, none is superior to the one in question, and blooms cut from those branches lasted fresh for eighteen days. This variety now bears the name of Mrs. Horril. The other freak referred to is a true anemone-sport from the reflexed variety King of Crimsons, which was shown and certificated at the recent Edinburgh Show, under the name of Mrs. R. A. Mudie. Blooms of this variety which spring from terminal buds develop good centres; but from early buds the disc is but thin, and the colour is exactly like its parent. There is no doubt that other flowers having a peculiar character will crop up now that such vagaries as are here mentioned have become fixed.

My experience of all [Chrysanthemum] sports is, that there is no difference in the growth of any one of them from that of its parent, but all are alike in the form of their leaves, and the general characteristics of growth; and I know of no difference existing but in the case of Lord Alcester, which has its flowers more perfect than is the case of any other of the "Queen" family. One often sees peculiarities in sporting, or, perhaps more correctly speaking in the minds of individuals, who imagine they are in possession of sports, when the only difference is in point of colour, brought about by cultural conditions, such as the too early formation of the flower buds. In some cases the variation of form and colour is certainly remarkable, and to the inexperienced such flowers may easily be taken for sports.

Madame C. Audiguier perhaps shows the results of too early bud formation more than any other variety that I know. The centre of the flower will often be nearly white, the florets narrow and quite erect, and showing none of the beautiful wavy curling of the florets which is one of the best characteristics of this lovely variety when seen in its proper condition. *E. Molyneux.*

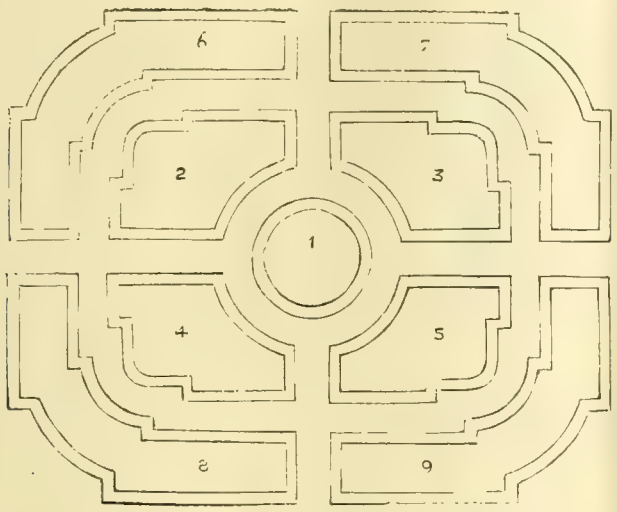


Fig. 97.—Plan of rose garden at Rheims.

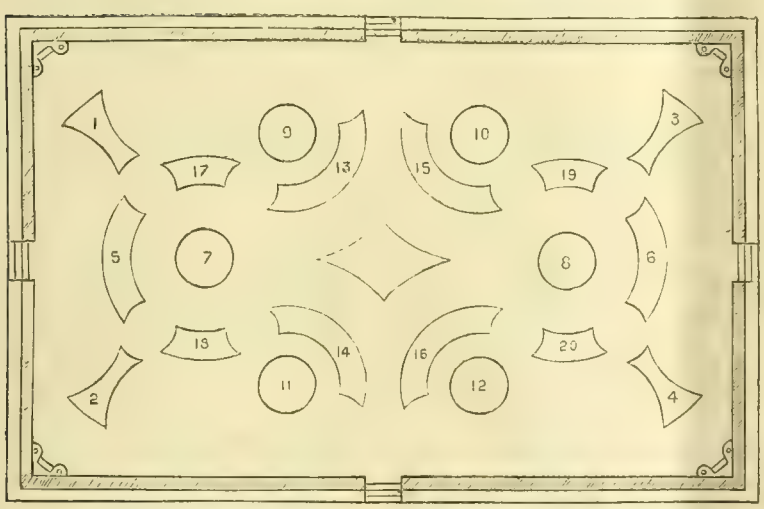


Fig. 98.—Plan of rose garden at Mentmore. (see p. 696)

CHINESE DELICACIES.

China is not a country to which an Englishman would care to look for hints in the preparation either of food or medicine. It is generally acknowledged that the Chinese Materia Medica consists, to a great extent, of some of the vilest compounds imaginable, and the food products of the country are hardly more enticing. Various kinds of Seaweed and fungi are largely consumed, both in China and Japan, as articles of food; some of them are not the most attractive looking morsels, and yet they are considered delicacies by the Celestials. The most remarkable of these curious foods are, perhaps, two species of fungus, one of which is known in the vernacular by the euphonious name of Hia-ts'au-tung-ch'ung, and by botanists as Cordyceps sinensis. This fungus has a very singular origin. Growing upon the head of a caterpillar of the moth tribe to an inch or two in length, it has the appearance of a huge horn; the caterpillar, when thus attacked by the fungus, soon dies, and the insect, with the fungus still attached, when dried forms an article of commerce in the Chinese markets, being generally made up into bundles weighing on an average 2 mace, or about 116 grains troy. These bundles, each of which measures about 3½ inches long, and three-quarters of an inch in diameter, consist of a number of the combined caterpillars and fungus dried and shrivelled, yet fully bearing in their outline the distinguishing characters of both insect and plant. As might be expected, such a singular natural production is credited by the Chinese with extraordinary medicinal properties, being worth four times its weight in silver, and considered as good as Ginseng. As an ingredient in soups it is also largely used as food. The uses, however, both as food and medicine, seem to be of modern introduction, for no account is found in the great Chinese work, the *Pen-ts'au*, which treats of all sorts of products, and has been described as a "Synopsis of Ancient Herbals," though it does extend to thirty-eight or more bound volumes.

It is not a little remarkable that an allied species

of this fungus, being similar in appearance, but larger, exists in New Zealand, attacking a caterpillar in the same way, and known to the New Zealanders as the Summer Plant and Winter Worm. No use, however, seems to have been found, as yet, for this species. On the other hand, the New Zealand Jews' Ear-fungus (the Hirneola polytricha of botanists), which is plentiful on decaying timber in all forest districts of the colony, is collected and sent to China as a food-product in enormous quantities every year. Both in its fresh and dried states the fungus has a repulsive appearance; its form somewhat resembles the human ear, and its colour is blackish, or dingy-brown. It does not appear to be known how the article first attracted the attention of the Chinese; it is certain, however, that the quantities sent to China before 1872 were so small that they were not considered of sufficient importance to be included in the list of colonial exports; but in that year close upon 58 tons, valued at £1,927, were sent to China, and in 1877 the quantity had increased to 220 tons, of the value of £11,318; and at the present time the value of this commodity has risen to £25,000 per annum.

As the fungus requires no preparation for market beyond collecting and spreading it in the open air, or in sheds, for a few days, to get rid of the moisture, the actual outlay upon it in the first instance is very small. The collecting is mostly done by the natives, who, when they are in want of means to obtain tobacco, or to provide the large feasts which they give periodically, send parties into the bush to bring in large quantities of the fungus for sale. The children of small bush farmers also often keep themselves in pocket-money by gathering and selling it to the dealers. When dry, it is packed in bags, and shipped to China by way of Sydney and San Francisco.

Though it is never used in the colony where it is produced, either by the natives or the settlers, it is highly valued by the Chinese, for use on fast days with a mixture of vermicelli and Bean-curd, instead of animal food; besides which, it is much used in soups as an ordinary food. It is further used in medicine for purifying the blood. The retail price in China is from 10*d*. to 1*s*. per pound, and as the price paid to the collector in New Zealand does not exceed 1*d*. per pound, it is evident that a very large profit is realised both by the merchant and retailer.

ROSES.

THE ROSE IN POTS.

It has not been altogether an exceptional sight to see Chrysanthemums, Dahlias, and Roses all in flower together during the past month, and one of the best of the Roses for flowering so late has been the fine old Souvenir de la Malmaison; and several varieties of Tea-scented Roses have given us blooms up to the third week in the month out-of-doors, and Roses in pots, in a coolhouse, have produced cleaner but not better blooms. Those Roses intended to flower early in the spring should have the soil in the pots allowed to become somewhat dry, and be pruned at once.

Numerous correspondents write about their failure to grow, or at least to flower Roses well in pots, or even planted out under glass. Now there is no great difficulty in growing Roses well in pots, when their cultural requirements are understood, and they get attention all through the year. They must never be altogether lost sight of, even when not attractive with bloom. These plants are at all seasons a prey to insects and parasites, but the man who understands his work will see that these enemies of the Rose are removed without delay. Looking through the houses of a celebrated grower of the Rose the other day with their owner, I observed that he was almost as much interested in the falling leaves as he is usually with the opening buds in spring. He could tell by the way the leaves were falling that the wood was perfectly ripened. Every good grower knows that unless the previous season's growths are well developed, and the young wood perfectly matured, it will be difficult work to obtain even good growths, let alone perfect blooms the following season.

If Rose growers do not look after their plants while they are making and ripening growth, they will never be successful, and such cultivators are but too ready to throw the blame on anything or anybody but themselves. A grave error is sometimes inadvertently committed by leaving the plants out-of-doors during the late months of autumn, and the soil is quite saturated with water, and the evil is sometimes intensified by the drainage at the bottom of the pots being choked. The result of this kind of treatment is that the fibrous roots get killed or rendered unhealthy, and the soil gets into a sour condition, and this tells against the plants the next year; and I am sure no successful cultivator of any plant needs to be told how important it is not to lose a point anywhere. The growers for exhibition know this right well, and do not care to place their Tea Roses out of doors at all, while the hybrid perpetuals and other more hardy types are placed at an early date under cover and near to the glass, and afforded just so much water as will keep the soil from becoming too dry; and when the time comes round to prune them, the soil must be at its driest, and should remain so for a week or so, until the wound gets dry; some persons paint the same with styptic. The material used by painters which they term "knotting," a thickish dark brown liquid answers very well for the purpose; we do not always use it, but I would certainly recommend its use. When the Roses are pruned, it may be well to stir up the surface soil in the pots, remove some of it, and dress with a rich compost of well decayed farm-yard manure and loam. It is a mistake to start the Roses in too high a temperature, especially at a very early date, and when the plants are not close to the glass roof. The result is that the leaves are thin of texture, the flowers flabby, and badly coloured; such plants are always liable to be attacked by green-fly and mildew.

It may be taken for granted that green-fly will attack Roses under glass, and the only way to get rid of it is by fumigating with tobacco smoke, or washing the leaves with soft soapy water. One grower writes to say that sulphur is useless to destroy mildew. This is a mistake of the grower. If the leaves and wood are pretty well smothered with it, one application might not be enough, because of the difficulty in getting the fine powder to come in contact with the fungoid growth. If one application will not do, try a second and third, but the worst of it is, the Roses are irretrievably ruined for the season; whereas, if the sulphur had been applied with the finger and thumb to the affected parts as soon as it was observed, no injury at all would have accrued to the Roses, and much labour and worry would have been saved. It is the same with green-fly; we know it will come, and act on the principle that prevention is not only better, but more profitable than cure. When the Rose buds are showing colour, the plants should be removed to the greenhouse, where they will open of a better colour and last longer. When open, it cannot too strongly be urged that one of the main points in pot Rose culture is to care for the plants when they have passed out of bloom, and that light and air are absolutely essential elements, avoiding cold draughts of the latter. *J. Douglas.*

The Pennsylvania Horticultural Society.—The officers elected for the year 1890 are:—President, Geo. W. Childs; Vice-Presidents, Robert Craig, W. A. Reed, M.D., George W. Earl, Chas. H. Miller; Recording Secretary, D. D. L. Farson; Corresponding Secretary, Edwin Lonsdale; Treasurer, William F. Dreer; Professor of Botany: Charles Schaffer, M.D.; Professor of Horticultural Chemistry, Persifor Frazer, Esq.; Professor of Entomology, Professor S. S. Rathvon.

HOME CORRESPONDENCE.

☞ *Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

Camellia buds dropping.—Your correspondent C. B. Saunders, in his advice upon the above subject, states that the principal reason of Camellia buds dropping is the state of the roots. Insufficient drainage or over-watering produces the worst effects, and healthy plants hold their buds and bloom freely. I beg to differ somewhat from his theory. My experience tells me that over-dryness, or a near approach to it even, produces the worst effects. A few days ago one of the smaller specimens of Camelias here, I found, was dropping its buds, and upon examination, I found that, owing to the surface of the ball becoming rather sour and moss-grown, I had not watered it in the usual way, and the plant had consequently become over-dry, During the formation of buds more care is required, as regards watering, than during the whole season, and at no time must they approach dryness to any extent. Providing the pots or tubs are well-drained, Camellias will stand more water than most plants. We have a Camellia-house here, consequently we have one uniform temperature, which I consider of great importance in their culture. There must be no coddling of the plants at any time, certainly none during bud-forming, but a plentiful supply of fresh air at all times, when weather permits. They should have copious and frequent syringings of tepid water, and the house should be shut up close, say about 3 o'clock in the afternoon, this would be from April to end of June. In a collection of Camellias they are seldom out of bloom before the former month. When growth is made, the house should be well ventilated day and night, and at this time they cannot have too much air, if well ripened plump wood is wanted. The Camellias here are never shaded, and, providing the glass is good, that is to say, without flaws, I consider shade is not required; neither are they exposed outside, though all are in large pots or tubs, that remain in the houses always. I think bud dropping often occurs where plants are exposed outside, after buds are formed, say July, and upon approach of frost brought into the house again and kept somewhat too close, having experienced this more especially in a mixed house. But if Camellias have an house entirely to themselves, or one in which they at any rate form the majority, any one can regulate the temperature and air-giving accordingly. I know it is a common practice, even where houses are devoted entirely to their culture, to place the plants outside from latter part of June or beginning of July until September, which I think quite unnecessary, and, according to my experience, detrimental, on the whole, to their well-being. Another fruitful cause of bud dropping and leaf dropping, too, is cold water, especially during winter. I always like the water to be of the same temperature as that of the house—if warmer all the better. I also keep a somewhat drier atmosphere during winter, a gentle fire on damp days and frosty nights, and I allow the plants to have all the light possible, and no shade. Your correspondent says heat and moisture during growth, and shade for the remainder of the year. I should say, if shade is required at any time, it is when the plants are making their young growth, for then the foliage is tender, and, as the season advances, I prefer to dispense with it altogether. I was pleased to see your editorial note at foot, and can verify your statement in every respect, having to deal with plants—or, rather, I should say, trees—in the open air in Kent. Four large ones—one white, one pink, and two reds—were planted out in an open border close to the mansion, with a north-west aspect, and sheltered also by a belt of shrubs. These withstood the winter of 1875, '76, and '77 without protection, and flowered during March and April. From wide experience, I can speak with some amount of authority on the subject, and I have known a healthy plant shed its buds in a manner that could not be accounted for, even where they have been planted out of doors, and also in houses and other places. There are some varieties which shed their buds

more than others, chief amongst these being Lady Hume's blush; and I have a large plant at the present time of tricolor which sheds more of its leaves than is usual, yet it is loaded with buds which are quite sound. Upon examination, I have found plenty of healthy roots, but some were decayed, though not to any extent. The last-named variety also sheds its leaves more than some others, still not to such extent as the one under notice. I merely mention this to show that in some cases we cannot solve the problem of bud dropping. *F. H. Froud, Chase Park Gardens, Enfield.*

IPOMŒA HORSFALLIÆ.—I observed in the last issue of the *Gardeners' Chronicle*, p. 664, Mr. Harrow's note on the propagation of the above plant by means of cuttings, which many have thought to be an impossibility, and I am able to confirm all he says as to the easy way that the cuttings take root if treated as he recommends. In March, 1887, I put four cuttings of this Ipomœa into a pot, and plunged it in a brisk bottom-heat, in a Melon-house, and placed a handlight over them. The cuttings, which were of the previous year's growth, rooted in about a month, and one of them was potted, and it soon began to grow rapidly and was re-potted, and in August it was potted again—this time into a 12-inch pot. The soil employed for the potting was peat and loam, in equal proportion, with enough sand to make it porous. The plant made five shoots of about 14 feet in length, which were trained along the roof of a stove, and which flowered well at their extremities the following winter. *T. Down.*

GROS COLMAR AND GROS MAROC GRAPES.—Your correspondent "D." appears to think that the last named Grape has been shown at local shows instead of, or in place of, the former; but any one knowing both varieties or either could not be mistaken in their identity, as they are so distinct from each other: the Gros Colmar being very large and round, with short thick stalks, and the berries close set, whereas the Gros Maroc is of different shape and bunch, more after the Alicante. *J. Sheppard.*

EARLY FLOWERING CHRYSANTHEMUMS.—I was much surprised to see that Mr. Budde had attempted to correct Mr. Piercy about the date given in his valuable paper on the Chrysanthemums. If he had carefully read the paper he would have seen the difference between the date of 1817 and 1850. I cannot find the name of Mr. R. C. Affourtit in the Directory of Dutch Nurserymen, but on inquiry, I learn there is a Mr. Affourtit in the employ of Messrs. Groenewegen of Amsterdam. Is he the nurseryman to whom Mr. Budde would give the credit of introducing the early Chrysanthemums? *A. Groom.*

THE SCARLET BERRIED ELDER.—On page 474 of the *Gardeners' Chronicle*, it is stated that it is somewhat mysterious that this shrub does not more often produce fruit in England. It was planted in the gardens here about four years ago, and the plants have fruited freely for the past two years. The shrub is very quick growing, and is moreover well suited for chalky soils. *R. Edwards, Beechy Lees Gardens, Otford, Kent.*

POTATO SCAB.—Thanks to the experiments conducted in America as reported upon by Mr. Willis (see p. 651), there seems now to be no doubt whatever as to the true nature of scab in Potatos. Some persons seem as if capable of finding fungus in everything, but I hold that to declare a fungus to be the cause of Potato scab is absurd. But here in this country it has almost invariably been found more associated with heat and drought than with moisture, therefore our experience does not tally with that of the promoters of the experiments Mr. Willis has described. Whatever may have been the care exercised in the irrigating of every alternate two rows, it must have been obvious that only by some special arrangement could the soil be prevented from acting as a conductor, and moistening rows a few feet removed, as well as these close at hand. Water would naturally find its level, and therefore would percolate through the soil, laterally as well as vertically, hence the irrigating test as compared with the non-irrigating test is of little value in such case. The employment of scabbed and clean sets with their ultimate products, shows conclusively that scab is not a disease or in any way an inherent defect. Really it may be said, so far as quality is concerned, to be the reverse. We find scabbed Potatos almost invariably to be of the best quality. The conclusion in the report that scab rarely follows upon free or quick continuous growth is, without doubt, correct. It is the check which plants and tubers receive when subject to heat and drought, which generates cork, so-called, in the tubers, and that bursting through the skins of the tubers, causes these abrasions which we have improperly termed scabs, but which are simply evidences of the escape of surplus starch. *A. D.*

—— Mr. Willis's interesting article, p. 651, on Potato scab, tends to confirm a theory that I have long held on this subject, and it is that the cause is purely mechanical; owing to rapid growth combined with the hard dry state of the soil, immediately upon the tuber there is a slight friction or abrasion between the very tender tuber and the soil, which, as the Potato swells, it becomes larger and forms a kind of canker (scab). It is well known what a little bruise or mark with a knife (initials for instance), will produce on a fruit of say a Gourd, and I maintain there is a great similarity between the appearance of such Gourd so treated and the Potato scab, only the Potato being in the earth there is more decay, and a Gourd will show it more so on the side lying on the damp ground, if it has been moved about when young and tender. I have never seen scab on Potato grown in leaf mould or very light soil; but our sandy, clayey loam that runs together like pitch will produce a very bad sample. It varies in some seasons, owing to a moist state of the soil at a critical time of the plant's growth. The plot in America being irrigated between the rows, would leave the earth that had been moulded up in a dry state. Varieties of Potatos have skins of different texture, and in heavy clays the tubers do not scab so much owing to the soft greasy nature of the soil, especially if the tuber be deep enough in the soil to keep its surface moist. *R. Farrance, Nursery, Chadwell Heath.*

AN ODD FRONTISPIECE.—On the cover as well as frontispiece of Mr. Wright's *Essay on Fruit Growing*, published by the Fruiterers' Company, appears an illustration depicting an Apple tree in fruit, bearing the Apple of to-day, the stem encircled by a terrible serpent, and before it stand Adam and Eve in that form of attire which is the despair of tailors and dressmakers, and which is commonly called nudity. Eve having reached up and gathered a fruit, is handing it to Adam to taste thereof. Here, put into the very forefront of a work intended to popularise the culture of fruit, and that of the Apple especially, is a declaration that not money but the Apple is the root of all sin and evil, which have befallen humanity. Had the Apple presented itself in the antediluvian biblical story as emblematical of all good, then might the illustration have been in accord with the object of the book. The school boy who, submitting too readily to temptation, robbed an Apple orchard and got well birched for his reward, might certainly regard the serpent-guarded tree with respect if not with aversion; but that it should be expected that novices in fruit culture should be encouraged to take to the culture of Apples with such an illustration before them of the evil Apples may bring into the world, passes comprehension. *An Old Adam.* [The heralds who assigned this device to the Fruiterers' Company are beyond the reach of criticism! Ed.]

RED-BERRIED ELDER AND BETULA INTERMEDIA.—At Braemar (which is between 1100 and 1200 feet above the sea) I was much struck last autumn, by the fine bushes of Sambucus racemosus bearing abundance of the beautiful fruit. The bushes were at least from 8—10 feet high, and seemed very strong and healthy. It is clear, therefore, that it is not climate or elevation that is injurious to it. The climate of Braemar is very cold in winter, as might be expected, from its latitude and elevation; and is dry, for the abundant rain-clouds from the west are caused to deposit their moisture by passing over the high range which culminates in Bein-Muic-Dhui. Thus the bushes have comparatively dry weather in the summer. The rain then usually comes from the east, *i.e.*, up the valley. A tree or two of Betula intermedia remain on a wild part of the hills, near Braemar, and are possibly the last trees of an early forest such as I have seen in Iceland. *Charles C. Babington, Cambridge.*

RAGI FLOUR.—On p. 663 of your last week's issue, the Ragi seed sent over by Mr. Mukharji has been sent by me to every one I thought would be interested in it. It has been tried by firms who produce special bread for invalids, also by patent food makers, by bakers and confectioners, but up to the present time no one seems to care for it. I have tested its properties with poultry by boiling it, and the avidity with which the fowls devour it show it to be very good [for them]. A small bag is sent to you herewith, [it has not arrived. Ed.] and if you will rub some of this flour out, you will find that a very large proportion of it consists of the husk, and people who have tried to grind this seed have been very disappointed in the yield of white flour. If any of your numerous readers could suggest some plan, I shall be delighted to send some of this seed, which I received from Mr. Mukharji, to them for further trial. *Thos. Christy.*

CALYSTEGIA PUBESCENS, FL.-PL.—A beautiful and very useful plant for clothing stumps, arbours, and other things. It grows rapidly to the height of 7 to 8 feet in Holland. The handsome flowers are about 3 inches across, double, and pale rose (ladies colour), and appear in June, continuing till the frost comes. It likes a light, rich soil, and warm aspect. It also may be grown in tubs or boxes, for forming small but nice bowers and balconies, verandahs, or to climb round posts; multiplying through division. Native of China. *J. K. B., Edinburgh.*

TRAINED SPECIMEN CHRYSANTHEMUMS.—Whatever may be the desires and wishes of Chrysanthemum societies generally in regard to the extension and development of these indispensable autumn flowers, there is certainly room for modification in those classes which are set apart for trained specimens, and in particular such plants as those exhibited at Kingston on the 12th and 13th inst., and which were accorded the premier position in their respective classes. Of all sorts and conditions of these plants as specimens, these are the most expensive to produce, and of the least possible value from a decorative point of view when done. True it is that a Chrysanthemum society is generally expected to appoint classes to suit a variety of exhibitors and admirers of the flower, still it does no society any credit to encourage the distorted heaps which came off with 1st honours at Kingston so recently. That trained specimens of these flowers can be produced in a creditable manner is true, and Kingston has been favoured from time to time with excellent examples of this mode of culture. The leading points to be observed in training a specimen Chrysanthemum are primarily that the height and width bear proper proportion to each other; secondly, that of keeping the growths tied out as they need it; and thirdly, to endeavour to complete the training, so far as the framework of the plant is concerned, as soon as the best buds can be determined. By the day of the exhibition all specimens thus treated, and provided their other requirements have been attended to, will be models of what a trained specimen should be, with none of the twisted and bare stems visible, but with abundance of healthy foliage concealing all such from view; and it is only by continued experience, with daily watchfulness and attention, that perfection in training these plants for exhibition is attained. Good and bad workmanship there will always be, but this is no reason for encouraging third-class work by judges at shows awarding it first-class prizes, and slovenly-trained plants are not, in my opinion entitled to such honours. A good trainer of specimen Chrysanthemums, or, indeed, anything else, knows full well the value of having his plants well under hand, and will have his blooms fixed in position as soon as the buds will admit of this being done; and for his pains he has the satisfaction of seeing every bloom erect and in the position assigned to it on the day of exhibition. Plants which, in some instances, were not more than 15 or 18 inches high from the pot, with the centres of some even lower than the margin, and at the same time fully 3 feet across, are unsightly as well as ungainly. What beauty there is in these widely expanded, compressed, and flattened masses, with the majority of the cross-stems in full view, and the foliage and flowers bearing abundant proof of having only recently been forced into position, it is difficult to conceive, yet a very different aspect might have presented itself had these self-same plants been in the hands of a good trainer throughout the season. Two feet to 2 feet 6 inches diameter is an ample diameter, and the height should be as nearly equal to the former as possible, the top slightly sloping from the centre outwards; the flowers will, of course, be closer together, but not crowded if well disposed, and if well finished off, such a plant is sure to give satisfaction. Societies, it may be argued, cannot well dictate to this or that exhibitor as to the

shape his plants may take, but they can show their disapproval by instructing the judges to withhold the 1st prize in instances where the "best" are, in their opinion, very ugly. Some such step would put exhibitors, on their mettle, with the result of attempting an improvement in this direction another year. The award of a "1st prize" to an indifferent lot carries with it a certain amount of unmerited honour, and consequent satisfaction, and the successful competitor never becomes aware that any improvement is needed until he finds himself thoroughly beaten at some future exhibition. *E. Jenkins.*

CHRYSANTHEMUMS IN PARIS.—Your note on p. 661, anent the popularity the Chrysanthemum is attaining to in Paris was fully endorsed by a conversation I had with one of the principal French growers of these flowers while in Ghent, who informed me that three years since, when he commenced their culture, and with the object of obtaining large blooms, the Parisians would not look at them; but now all this has changed, and they all want large blooms. He said the Parisians appear not to care what price they have to pay for the blooms so long as they can procure them; and at the great exhibition recently held in Paris, the enthusiasm which appeared to seize the people on beholding a stand of large cut blooms was something to remember, and it was almost impossible to get near to the stands of blooms without waiting a considerable time. In the course of conversation, the nurseryman asked me to tell him the best means by which he could obtain late blooms. I answered him, "You must stop the plants, of course." The exclamation which fell from his lips at my answer showed plainly the method of culture which must be adopted in that country to please the public; it was, "Ah, but they will not be large enough treated in that way." This was a clear indication, to my mind, of the method of cultivation likely to be most in favour in France [for a time]. *E. M.*

A HARDY MAIDENHAIR.—I do not think that the merits of Adiantum capillus-veneris var. grande, described in the *Gardeners' Chronicle* of July 24, 1886, for the first time by the late Thomas Moore are sufficiently well known. It comes as near as possible the Cornish form of the same species, and is a remarkably handsome variety deserving extensive culture, for it has no rivals as a decorative and conservatory Fern. It may be honestly described as a half-hardy Farleyense. I recently saw a very fine batch in Mr. Jannoch's nursery at Dersingham, where they are grown in shallow pans of about 1½ inch deep and 6 inches across. As nearly every plant was a perfect mass of fronds, each of which was nearly, if not, quite a foot in length, it will be naturally and correctly assumed that very little of the pans is visible. Mr. Moore's assertion that it is "not too much to say it is the finest and most noble of all the varieties of this species of Maidenhair" does not need qualification, but rather confirmation. It is, like the type, of creeping habit, and the rapidity with which it developes into a dense spreading mass of graceful fronds is really surprising. The pinnules are, as Mr. Moore pointed out, very peculiar; when growing on the frond they appear to be solid, large and undivided; but when undergoing the process of drying between paper for the herbarium, they separate into nearly a dozen dichotomously-divided segments which are cut down two-thirds to the base. Many of the pinnules measure quite an inch across, and are generally half-circular in outline. In addition to its numerous and varied merits, it is of exceedingly easy culture. *W. R.*

THE GENUS ANHALONIUM.—There are three distinct genera (in my opinion), classed as one under the above name, and out of the three I have wondered which is the correct one; for instance, there is A. Williamsii, of Dr. Weber, I believe; A. fissuratum, of Dr. Engelmann, and A. prismaticum, and some others of Professor Lemaire. Now which, may I ask, is the right one? A. Williamsii is called an Echinocactus by some, but that to me seems to differ very markedly from any Echinocactus I have yet seen, as it produces no spines, and it produces its flowers right in the centre of the crown from a woolly substance, which after the flower is over produces a tuft much resembling a camel's-hair pencil, and this at intervals down the so-called ridges; but unless it flowers, this tuft is not produced, or is only very slightly shown, and there are two varieties of this, one very smooth, and the other more spiral and more furrowed or ribbed, the flowers and tufts in both being the same. A. fissuratum, called Mammillaria fissurata, is in my opinion, a most remarkable plant in every way as far as appearance goes. It is strangely furrowed, the markings very regular, but destitute of spines, the tubercles protruding as in some of the Mammillarias and Echinocactus. The flower is produced right in the centre of the plant, as in the former, and out of a woolley substance, and it is of the colour of a Peach blossom, as near as I can compare it, and about 1 inch (more or less), in diameter, produced late in the season from the tubercle, not between them, as in Mamillaria, but like some of the Echinocacti, close to the spines. The Mammillaria, I think, always produces its flower from the body of the plant—at least, all those that I have seen did; and if we put a bunch of strong short spines on these tubercles, it would, I think, be called an Echinocactus; but take a lean plant of it, very much compressed, and one in full vigour, and a great amount of difference will be seen. The figures that I have seen of it represents a plant of the former, and that was upwards of twenty years ago, and I have seen another lately which I should say was the same, and until I am convinced that it belongs to the Mammillaria, I shall say it belongs to the Echinocactus, and to a spineless one, but otherwise adorned, A. prismaticum. This last-named plant is again perfectly distinct from the above two, and resembles a Mammillaria in appearance, but is spineless, and of a grey colour, hard-looking, horny on the end, with a spot a little from the point, which probably may produce a woolly substance when very young, but which with age seems perfectly free from any particle of wool whatever; but one plant that I have seen, and which I consider is a distinct kind, has this kind of substance adhering and stretching from one tubercle to another, and these latter are much shorter and thicker; and there is between these mammæ or tubercles a portion of surface showing it, and still more so from the site of the old flowers, which is produced from the centre and between these tubercles, as in Mammillaria. There are of the latter three or four more varieties, judging from the slight description of them I have acquired; but as I am writing only from memory, I may err. I am no botanist, but an *ignoramosissimus* on that science. I grow a few plants for a hobby, and sometimes give an opinion, or make a remark, and perhaps also a mistake. *J. S. C.*

PLANT SHELTERS.—In the *Gardeners' Chronicle* of October 22, 1887, p. 503, you noticed a new shelter for plants, an Osier hen-coop covered with green scrim, which I then expected would prove a really useful, easily moveable protector. The late severe frost, following mild weather, with no protecting snow, has given good means of testing the hardiness of plants, and the efficiency of protectors. Our coops have proved most useful. Among the plants sheltered is a clump of the large-flowered pure white Christmas Rose. The flowers have been finer than we ever before have had them. A New Zealand Fern seems quite happy under his coop. I believe that many plants, considered only half hardy, will stand the weather with this protection. *George F. Wilson, Heatherbank.*

SOCIETIES.

ROYAL HORTICULTURAL.

TUESDAY, *December* 11, 1889.—Although the last meeting of the present year, and thinly attended, this one at the Drill Hall, Westminster, was not without many exhibits of interest, especially in Orchids, and the grateful bit of colour afforded by Mr. Cannell's zonale Pelargoniums, and Messrs. Veitch's hybrid Rhododendrons.

Floral Committee.

Present:—W. Marshall, Esq., in the chair, and Messrs. H. Turner, H. Herbst, L. Castle, J. Walker, B. C. Leach, R. B. Lowe, C. Noble, J. Fraser, B. Wynne, W. Holmes, and F. Ross.

Mr. Bain, gr. to Sir Trevor Lawrence, Burford Lodge, Dorking, exhibited the bold-habited, showy Anthurium Burfordiense ×, a plant with leaves having very large footstalks and spathes, with still longer petioles. The colour of the large spathe is varnished-scarlet.

Some pretty plants of Bouvardia elegans variegata came from Messrs. C. Lee & Sons, Vineyard Nurseries, Hammersmith. The contrast between the pink blossoms and the creamy variegation of the leaves is effective.

Mr. G. Master, gr., High Leigh, Knutsford, showed a group of Adiantum imbricatum, small specimens with gracefully drooping fronds, whose pinnæ are notched at the edges. It is distinct and ornamental.

Some nicely bloomed pots of Narcissus monophyllus, one of the earliest and prettiest of the Hoop-petticoat Narcissus, were shown by Mr. Thos. Ware, Hale Farm, Tottenham.

A good representative lot of blooms of hybrid warmhouse Rhododendrons were sent by Messrs. J. Veitch & Sons, the showiest of which we take to be Duchess of Teck, a salmon-yellow; Eclatante, deep scarlet, tube-lobes but little reflexed; Balsaminæflora, yellow and pink, a semi-double flower; Princess Frederica, a very beautiful orange-coloured flower and fine big truss; Maiden's Blush and Taylori. Winter Gem and Marie Louise Tree Carnations were admirable, the former being bright scarlet; the latter, white, edged and flamed with purple.

Two American varieties of Japanese Chrysanthemums came from Messrs. Pitcher & Manda, Short Hills Nursery, New York, viz., Mrs. Alpheus Hardy and Shasta, a variety with white thread-like florets not fully open—a flower of medium size.

Messrs. H. Cannell & Sons exhibited two stands of winter-blooming Pelargoniums, very gay and bright, and which those who have not a large general stock of winter-flowering species of plants would not err in cultivating. We mention just a few of the less common colours, and advise our readers to see their list for the names of the other fine varieties grown at Swanley. Swanley Gem is deep cerise; Miss D. Saunders is lilac-rose; Stella Massy, soft rose; Rosy Morn, rose-pink; Parker's Favourite; Richard Dean, purple; Mrs. Wildsmith, cerise; and Dr. Tucker, crimson-purple. From the same exhibitor came Chrysanthemums Crimson and Gold and single-flowered, not fully open, and Mr. E. W. Clarke, an incurved purple-lilac Japanese, nicely scented. Several Primulas were shown.

The following are the awards:—

Awards of Merit.

To Carnation Winter Cheer, from Messrs. J. Veitch & Sons.

To Chrysanthemum Mrs. Alpheus Hardy, from Messrs. Pitcher & Manda.

Orchid Committee.

Present: Sir Trevor Lawrence, Bart., M.P., in the chair; and Messrs. J. O'Brien, F. Moore, E. Hill, J. Douglas, Dr. Masters, C. Pilcher, H. Ballantyne, H. M. Pollett, and H. J. Veitch.

A fine large panful of Masdevallia Tovarensis was sent by Mr. A. Evans, gr. to J. S. Hodgson, Esq., Lythe Hill, Haslemere, and showed about 350 blossoms. It was a pretty object, and had evidently been grown warm—the leaves being thin.

A large basket of rare plants came from the nurseries of Messrs. Sander & Co., St. Albans, consisting of Aerides Savageanum, which bears a small raceme of flowers which measure three-quarters of an inch in full spread of their petals. The colours are purple and white, and a purple suffused white ground. Odontoglossum Wattianum, a plant with richly coloured blooms, whose petals and sepals are yellow, heavily blotched with brown; the lip is yellow at the margin, crimson in the middle field, and the interior portion much dotted with crimson. Cattleya O'Brieniana, a pale lilac flower, with the lip lined with purple on the upper surface; the well known Dendrobium bigibbum, sent probably as a foil to the much deeper coloured and large D. Statterianum, which it greatly resembles in form. Odontoglossum nevadense has brown and yellow sepals and petals, and an elongated sagittate lip, which is fimbriated on part of its margin, the interior of the throat is white, with purple streaks. Several Sophronites were shown, including coccinea and rosea.

Mr. Ballantyne, of the Dell Gardens, Egham, showed Cypripedium Galatea majus, the product of a cross between C. Chantini and C. Harrisianum, and in characteristics midway between these two.

Mr. E. Hill, Lord Rothschild's gr. Tring Park, sent a beautiful well-bloomed piece of Vanda Amesiana.

C. Ingram, Esq., Godalming, contributed Cypripedum Lathamianum × a hybrid of C. villosum and C. Spicerianum, a pretty thing, and intermediate in most points between the parents.

Some beautiful hybrid Orchids were staged by Messrs. Veitch & Sons, Chelsea, Lælio-Cattleya

Pallas=C. Dowiana×Lælia crispa. The petals and sepals of this plant are white, suffused with lilac, the lip, which is of the richest purple, as in L. crispa, is 2 inches broad at its broadest part, and has a waved margin, round which at the very edge runs a line of white—a dark purple cloud with a silvery lining. The plant had one spike that bore four blossoms. Lælio-Cattleya Stella, has petals and sepals resembling in their tint and form the before-named hybrid, except that the sepals are quite rolled up longitudinally, and the petals are half twisted round. The lip is rich purple, with veins of a still darker hue, and has a thin white edge. Cypripedium Niobe= C. Fairieanum and C. Spiceranum, as yet a small flower with brown green lip, having darker coloured veins, the dorsal sepal green coloured at the base and white elsewhere, and purple veins and lines running through it; petals green, with spotting and lines of a purple shade. The leaves are green. A gem, C. T. B. Haywood = C. Druryii × C. superbiens, has a reddish-green lip, the large dorsal sepal is white, with distinct line of purple and purplish suffusion; petals, creamy-white, with a median line of brown, and spotted lines on either side of it of a crimson colour. These parts of the flower have a decided droop.

Mr. Catt, gr. to Charlton Parr, Esq., Wappenhall, Hayes, Warrington, showed a plant each of Cypripedium bellatulum and C. Leeanum. S. M. Cook, Esq., Kingston Hill (gr. D. Cullinmore), showed Lælia bella, a white flower, with purple tip to the sepals; the lip pale yellow. The inflorescence forms a dense mass of short stems amongst the pseudobulbs.

A plant of Lælia albida, with seven long, slender spikes, surmounted with many, almost pure white blossoms, came from Mr. C. Harris, gr. to E. J. Wrigley, Esq., Victoria House, Dukinfield, Chester. A vote of thanks was awarded the exhibitor.

The awards are as follows:—

Bronze Medal to Mr. A. Evans, gr. to J. S. Hodgson, Esq., for Masdevallia tovarensis.

First-class Certificates.

To Lælio-Cattleya Pallas, from Messrs. James Veitch & Sons.

To Cypripedium Niobe, from Messrs. James Veitch & Sons.

To Lælia Bella, from S. Malcolm Cook, Esq.

Awards of Merit.

To Cypripedium T. B. Hayward, from Messrs. J. Veitch & Sons.

To C. Galatea majus, from Baron Schrœder.

Fruit Committee.

Present: Sir C. W. Strickland, Bart., in the chair; and Messrs. P. Crowley, C. Ross, Harrison Weir, R. D. Blackmore, W. Bates, G. W. Cummins, G. Cliffe, W. Denning, W. Wildsmith, G. T. Miles, W. Warren, G. Bunyard, T. J. Saltmarsh, A. H. Pearson, J. Willard, J. Smith, G. Wythes, J. Hudson, H. Balderson, F. J. Lane, G. Norman, J. Wright, and Sydney Ford. The labours of the Committee were light, the exhibits being but few.

Mr. Deverell, of Banbury, showed samples of his remarkable strains of Onions, in good preservation. Mr. Doe, gr. to Lord Savill, brought an Apple resembling a large Blenheim Pippin, named Beauty of Stoke. Mr. C. Ross, Welford Park, showed a fine specimen of Smooth Cayenne Pine and several seedling Apples, but none of them seemed to be improvements on existing varieties. Mr. W. Brown, nurseryman, Stamford, showed the Too-good, an Apple raised between South Lincoln Beauty and Duncombe Seedling, but it was not thought good enough by the Committee. Some fine Lady Downes' Seedling Grapes came from Mr. Goodacre, gr. to the Earl of Harrington, Elvaston Castle, also Ham Green Tomato. From the garden of Rev. W. Wilks, Shirley, came well ripened fruits of the tree Tomato, Cyphomandra bectacea. Mr. Cummins, gr., The Grange, Wallington, showed an Apple called Remborough, a showy large fruit.

The Orton Brussels Sprouts (three stems) were shown by Mr. A. Harding, gr., Orton Hall, Peterborough,—a very good sample.

Mr. Coates, Wallington, Surrey, showed some of his Anti-incrustator, which, put into a garden hot-water boiler removes all stony incrustation, making the metal like new. Mr. Cummins, of Wallington, speaks very highly of the substance. Its use is not confined to garden boilers only.

Awards:—

Cultural Commendations.

To Onion Ailsa Craig, from Mr. H. Deverill.

To Onion The Wroxton Improved, from Mr. H. Deverill.

To Grape Lady Downes' Seedling, from Mr. J. H. Goodacre.

To Tomato Ham Green Favourite, from Mr. J. H. Goodacre.

To Pine-apple Smooth Cayenne, from Mr. C. Ross.

To Brussels Sprouts The Orton, from A. Harding.

NATIONAL CHRYSANTHEMUM.

Dec. 11.—The last meeting of the Floral Committee of this body took place at the Royal Aquarium on the above date, Mr. R. Ballantine in the chair, the whole fifteen members of the Committee being present. A large collection of the newer forms of Chrysanthemums, continental and American, came from Mr. R. Owen, Castle Hill Nursery, Maidenhead, and although no certificate of merit was awarded to any one of them, the flowers were full of interest, and it is anticipated the whole of them will be seen in better form next year. Foremost among them were Japanese Mrs. E. W. Clark, a highly promising bright chestnut-red flower with a silvery reverse, something of the character of Comte de Germiny; Mrs. Frank Thompson, or W. & G. Drover, the former being the correct name, Japanese, a large pale coloured flower of the Edwin Molyneux type; very broad in the petals. Mont Blanc, an incurved Japanese, pink, with a creamy reverse, of the character of Madame C. Audiguier. Mrs. J. Wannamaker, Japanese, bright silvery rose, with a silvery reverse; very pretty indeed, and the committee asked to see it again. Mr. J. Brown (Japanese), golden yellow, very like Mons. Garnet; Mr. Charles Pratt, a white Anemone-flowered variety, pure in colour, but doubtful if any improvement upon Lady Margaret; Thomas Cartledge (Japanese), a curious flower, having flat tubular, basal petals, and in the centre broad incurved ones, a flower of singular character; Gaspard Rozain (Japanese), soft pink, with white centre, very delicate and pretty; White Elephant (Japanese), a pale coloured late James Salter; W.W. Cowler (Japanese), a bold and striking flower, in the way of Val d'Andorre, but of a brighter red; this the committee desired to see again. M. Henri Muys (incurved), a delicate, fleshy pink variety, very pretty; Hermes (incurved) lilac pink, with creamy silver reverse; Faust (incurved), rather deeper in colour than the preceding, broad petals, and having the build of Barbara; Ada Spaulding, a pale-coloured incurved Japanese; and Volunteer, certificated on the last occasion. Mr. Owen also had a collection of the cut bloom of Primula sinenses fimbriata. Mr. H. Cannell sent blooms of Japanese, Mrs. E. W. Clark, described above, and a pretty single Chrysanthemum named Crimson and Gold, bright crimson striped with gold, very pretty. Mr. Taylor, gr. to Sir J. Lubbock, Bt., M.P., sent a collection of cut Chrysanthemums, for which a vote of thanks was awarded. At the close of the business, the members of the Floral Committee dined together at the invitation of the General Committee, Mr. R. Ballantine presiding. The usual rule has been for the members of the Floral Committee to dine with the judges on the occasion of the great November show, but as the arrangement could not be carried out last November, it was resolved that the Floral Committee should be entertained at a dinner on the above date, and a very pleasant time was spent.

SCOTTISH HORTICULTURAL ASSOCIATION.

The ordinary monthly meeting of this Association was held on the 3rd inst., in 5, St. Andrew Square, Edinburgh, Mr. D. P. Laird in the chair. Mr. J. Wilson, jun., Greenhill Nursery, St. Andrews, read a paper entitled "Reminiscences of Continental Nurseries," in which he gave an account of his experience of nurseries in which he had worked in Hamburg, Belgium, France, and Germany. The structure of the houses, their heating and ventilation, and the general management of continental nursery establishments were the points chiefly dealt with, and from the numerous diagrams exhibited to illustrate the paper, and the critical terms of the latter, it was obvious to the audience that continental nurseries were managed with more regard to strict economy than perfect convenience and fitness in the matter of appliances, and order, and taste.

In the discussion that followed, it was obvious that the reading of the paper had afforded much interest to the hearers, and Mr. Wilson was awarded a hearty vote of thanks for the trouble he had taken in preparing the paper, and in coming from St. Andrews purposely to read it.

Exhibits placed on the table were fine trusses of a superior strain of Primula sinensis, from Mr. Smith, of Oxenford Castle; from Mr. McMillan, Trinity Cottage, an alleged sport from Chrysanthemum Mr. Garner, in which the flowers shaded from yellow to salmon from the centre outwards, but which some of the experts present considered might be due to other influences than that of sporting, as the variety was somewhat variable in regard to colour at different times and in varied circumstances. Mr. Grant, St. Leonard's Hill, Dumfermline, exhibited a small collection of cut-blooms of Orchids, consisting of Cypripedium Haynaldianum, a fine form of Lælia albida, L. anceps, Sophronitei grandiflora, and Oncidium cheirophora.

The announcement of the paper to be read on the 7th January, 1890, "Experiments with Manure in Orchid Culture," by Mr. F. W. Moore, Curator, Glasnevin Botanic Gardens, Dublin, and a vote of thanks to the chairman, brought the proceedings to a close.

SCOTTISH PRIMULA AND AURICULA.

The annual general meeting of this Society was held on the 5th inst., in 5, St. Andrew Square, Edinburgh, Mr. A. Milne (James Dickson & Sons, Edinburgh) in the chair. Mr. Wm. Straton, Broughty Ferry, Honorary Secretary and Treasurer, read the annual report of the transactions and the finance of the Society for the year.

The third show of the Society, held on May 8 last, had been one of the most successful, both financially and as an exhibition, that had yet been held. The income for the year, including a balance of £10 9*s.* 6*d.* brought forward from the previous year, was £37 5*s.* 6*d.*, and the expenditure was £29 15*s.*, leaving a balance to credit of £7 10*s.* 6*d.* There was thus shown a loss on the year's transactions of £2 19*s.*, which was accounted for by a falling off in the members' subscriptions, which had declined to the amount of £6 18*s.* On the other hand, the interest of the public in the exhibitions of the Society was obviously on the increase, as the attendance at the last show was about double that of any previous one. Mr. Robert Lindsay, Curator, Royal Botanic Garden, moved, and Mr. Grieve, Pilrig Nursery, Edinburgh, seconded the adoption of the reports, which were unanimously regarded as satisfactory, and adopted.

A letter was read from Mr. Cathcart, of Pitcairlie, Fife, President of the Society, suggesting that next year's show might be held in Dundee. The proposal appeared to find general favour in the meeting, but before deciding finally, it was decided to take the opinion of members generally on the matter. The office-bearers were all re-elected. Mr. Straton was accorded a vote of thanks for his services on behalf of the Society.

THE ROYAL CALEDONIAN HORTICULTURAL.

This Society held its Annual General Meeting on the 5th inst., in Dowell's Rooms, George Street, Edinburgh, Mr. D. P. Laird, in the chair. The financial statement read by Mr. Patrick Neill Fraser, honorary treasurer, showed that the receipts for the year ending 30th Nov. last amounted to £1495 14*s.* 11*d.*, and that the expenditure during the same period was £1498 10*s.* 9½*d.*, showing a deficit of £2 15*s.* 10½*d.* The total funds at date were stated to be £1099 17*s.* 0½*d.*, disclosing a deficit of £17 14*s.* 11½*d.*, on the year's transactions. Mr. W. Thomson, sen., Clovenfords, considered it disappointing that the year's work resulted in a deficit. The Chairman in reply stated that the deficit was due to the summer show which rarely cleared its own expenses, and had this year fallen short of doing so. Mr. M. Dunn, Dalkeith in moving the adoption of the report supported the Chairman's statement as to the summer shows being rarely financially successful; and Councillor Chapperton, city treasurer, in seconding Mr. Dunn's motion said that although the accounts showed a deficit, the summer show could not have failed to be a great source of pleasure to the large number of people who attended it. The report was adopted. Lord Balfour of Bur-

leigh, was elected Vice-President of the Society for the year. Councillor James Colston and Mr. Wm. Welsh (Dicksons & Co., Edinburgh) were elected members of Council, and Mr. James Stewart, W.S., Mr. Patrick Neill Fraser, and Mr. A. Davidson Smith, C.A., were re-elected to the offices of Hon. Secretary, Hon. Treasurer, and auditor respectively. Votes of thanks to Mr. Stewart and Mr. Fraser for their services to the Society were heartily accorded, and a vote of thanks to the chairman for presiding brought the meeting to a close.

BELFAST CHRYSANTHEMUM SHOW.

Thursday: *November* 28 *and* 29, 1889.—The first Chrysanthemum show in connection with the Ulster Horticultural Society was held in the Ulster Hall, on the above dates, and the promoters are to be congratulated upon the very gratifying measure of success that has attended their efforts. Of this show it would hardly be possible to speak in too high terms of praise, and the visitors were loud in their enconiums as to the beauty and general excellence of the display. Amongst those present there were several gentlemen from across the channel, including some of the most famous Chrysanthemum growers in the three kingdoms, and one of these gentlemen stated that the show would compare very favourably with the shows he had seen in different parts of England and Scotland.

The cultivation of the Chrysanthemum has recently received a great impetus, and the results of increased attention to the growth of the flowers were observable in the display. The Ulster Hall is admirably suited for such an exhibition, and the manner in which the space at the disposal of the committee was utilised reflected credit upon the ingenuity and taste of those who had charge of the disposition and arrangement of the exhibits. The Mayor offered a tea and coffee service, to which the society added £5, for the best group of Chrysanthemums in pots. Competition was very keen, and Mr. Henry Matier took 1st honours, while Mrs. Henderson, Norwood Tower, was awarded 2nd, and Sir James P. Corry 3rd prize. The exhibits in this class elicited the greatest admiration from the visitors. Mr. H. Matier also took 1st for four incurved, four Japanese, and two pompon Chrysanthemums; while Mrs. Henderson received a special prize—a piece of plate, presented by Messrs. Cahoon—for one "best specimen," a 1st prize for two Anemone-flowered Chrysanthemums, and a 2nd for one standard Chrysanthemum. The remainder of the prizes for plants in pots were divided amongst Lord Deramore, Sir H. H. Bruce, Bart., Messrs. William Coey, W. Robertson, S. Lawther, H. Matier, and J. Wilson; while Mr. H. Dickson (Belmont), and Messrs. Dickson (Newtownards), carried all before them in the nurserymen's class; and Messrs. J. Shean, and J. W. Ritchie, both of Comber, were the winners in the amateurs' class.

Cut Blooms.—The display in the section devoted to cut flowers was brilliant, and the most successful exhibitor was Mrs. Torrens, Edenmore, who carried off no less than four 1st awards for incurved and Japanese blooms. One of these was a special prize—a piece of plate—presented by Sir J. P. Corry, Bart., with £5 added by the Society for thirty-six blooms. Miss Lloyd, Messrs. R. A. Richardson, H. Matier, E. Coey, J. Torrens (who took Mr. T. Hay Ritchie's special prize), and J. Wilson were also well to the fore in this section, while the Belmont and Newtownards nurserymen exhibited splendid collections of incurved and Japanese blooms. Some excellent fruit was exhibited by Lord O'Neill and Lord Deramore, who divided the honours in this department between them.

Floral Devices.—In the display of Messrs. Alex. Dickson, Newtownards, "The Gates Ajar" was much admired, and deservedly so, for we have seldom seen any floral arrangement so chaste and beautiful in design. Mr. H. Dickson, Belmont, surpassed himself in the elegance and beauty of his exhibits, and Mr. J. M'Duff, High Street, exhibited several splendid items, including bridal bouquets, a wreath, a large cross of choice flowers in season, and an Irish harp, all of which were much admired. Altogether the show was of a most complete character, and all concerned in its promotion deserve the utmost credit.

Excellent fruit and vegetables were shown by gardeners and amateurs.

FOREIGN CORRESPONDENCE.

THE CHRYSANTHEMUM SHOW AT CHARLOTTENBURG, BERLIN.

So little known is the Chrysanthemum in Germany, that only small or medium size flowers have been known here until now. The flower shops also, and the late show clearly prove this. Market gardeners exhibited well grown and large plants with many flowers, but of moderate size. Only some of the larger nurserymen such as Messrs. Haage & Schmidt of Erfurt, Thalacker of Leipzig, Becker of Mülhausen, exhibited some of the larger varieties, so well known and esteemed in England. It was a good idea of Messrs. Reid & Bornemann, of Sydenham, to show the German public fair specimens of the best large-flowering vars. I think that their display will to some extent give an impetus to the growing of these sorts in Germany. It would be needless to give your readers a description of the sorts, so well known to them, but they will see by the following short list, that some of the best were exhibited: Martha Harding, Princess of Wales, Madame J. B. Pigmy, Jeanne Delaux, M. Bergmann, Avalanche, Barbara, Jeanne d'Arc, Criterion, Ed. Molyneux, Ralph Brocklebank, William Holmes, Madame Baco, Madame J. Laing, Etoile de Lyon, Thunberg, Cullingfordi, Nil Desperandum, Marguerite Marrouch, White Beverley, W. Elliot, Mr. Fremantle, and Lord Alcester. The famous Mrs. Alpheus Hardy arrived too late, but a picture gave some idea of its beauty. Messrs. Reid & Bornemann received a Gold Medal, the 1st prize for cut flowers. When I said that the large flowering sports are unknown here in Germany, so it is to be understood in a general sense. Mr. Weber, head gardener of Commerzienrath Spindler, showed that he well understands how to grow them. He had a fine collection of large flowering plants, of which many were by no means inferior to those of Messrs. Reid & Bornemann, and was awarded the 1st prize for plants, also a Gold Medal. I do not know whether the large flowering sorts are exhibited in England on the plant or as cut flowers. I think the latter would be the better method. [Yes, the finest blooms are shown on the boards. Ed.] The result of the show was good. Messrs. Reid & Bornemann are said to have made a good venture, and Chrysanthemums are now fashionable. In the flower shops, the flower markets, and with the flower women you find Chrysanthemums galore.

By a typographical error on p. 503, the height of the waterfall in the new Victoria Park, was said to be 75 metres. This should read 15 metres. As long as the weather remained mild, the new rockery of the Botanic Garden was much worked at, and when finished this will be the largest and finest rockery on the Continent. I hope in the spring to send some sketches of it. Where formerly was a plain piece of ground, there is now a nice rockery. The mass of plants which will be cultivated here is immense; but I fear that they will not thrive, because that part of the garden is surrounded by the high houses of the neighbouring streets.

New Plants. — Amongst the dried specimens brought home by Mr. Braun from Cameroons, is a new Gardenia Gassleriana, with enormous flowers. The corolla is 21 cm. long, the segments measuring 9 cm. in length, and in the upper third 5 cm. broad. The corolla tube has a diameter of 14 cm. It is flesh-colored on the outside, covered with a darker network. The inner portion of the tube is violet. The stamens are fixed, 18 to 19 cm. above the base of the corolla, the yellow anthers have a length of 3½ cm. The flowers have a strong odour resembling that of the perfume "Opopanax." The plant is rare in its native country; it was only twice observed, and each time only one specimen was met with, viz., near Malimba, and near Batanga. It grows in the dark damp bushes which line the banks of the branches of the rivers, which were once the main branches. It flowers in August and December. A new dark brick-coloured new Begonia, B. Teuszii, was also discovered. It is epiphytical, and grows on the trees together with Ferns and Orchids. Another new Begonia, B. cataractum, has white flowers, which smell strongly of Lemon. It is a very delicate plant highly suited for a hanging plant. Amongst the two hundred dried specimens brought home from Mr. Braun, about forty are new species, viz., fourteen fungi, three Ferns, two Amaryllidaceæ, one Aroid, four Zinziberaceæ, nine Orchids, one Artocarpea, one Oleacea, one Hippocrateacea, two Begoniaceæ, one Apocynacea (new genus, viz. Iboga), one Acanthacea, one Rubiacea. In the hothouses of the botanic garden, there are in cultivation about 800 living plants imported by Mr. Braun from the Cameroons, amongst which are many new species worthy of more extensive culture in gardens. *Our Berlin Correspondent.*

THE WEATHER.

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending December 9.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42°, difference from Mean since Jan. 1, 1889.	Below 42°, difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 +	9	27	+ 218	— 49	3 +	228	39.2	10	22
2	1 +	5	38	+ 18	— 37	3 —	186	24.9	14	28
3	2 —	0	36	— 6	— 35	1 +	173	23.6	3	26
4	5 —	0	51	— 29	+ 95	1 —	177	25.2	10	31
5	6 —	0	58	— 30	+ 31	0 av.	165	25.9	5	28
6	5 —	0	46	+ 25	+ 46	1 —	162	24.6	12	30
7	1 +	9	27	+ 56	— 91	2 —	193	38.8	17	30
8	3 —	0	32	+ 35	— 44	1 +	182	30.1	7	29
9	4 —	6	34	— 102	+ 91	4 —	182	33.4	21	34
10	0 av.	11	25	+ 69	— 114	2 +	216	36.1	18	26
11	0 av.	24	13	— 10	— 56	0 av.	194	34.5	20	32
12	4 —	18	11	+ 108	— 10	2 —	194	28.4	13	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts — 1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts — 7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

THE PAST WEEK.

The following summary record of the weather for the week ending December 9, is furnished from the Meteorological Office:—

"The weather continued fair and dry during the earlier part of the period, but subsequently became very changeable and unsettled, with frequent falls of rain, snow, or sleet.

"The *temperature* has continued below the mean over England, the deficit having ranged from 3° to 6°; but in Scotland it has been 1° above, while in Ireland the mean has been just equalled. The highest of the maxima, which were recorded very generally on the 9th, varied from 55° in 'Scotland, W.,' and 'Ireland, S.,' to 51° in 'England, S.' The lowest of the minima were registered during the earlier days of the period, when the thermometer fell to 18° in 'England, S.,' 20° in 'Scotland, N.,' 21° in the 'Midland Counties,' and to between 22° and 26° in nearly all other districts. In the 'Channel Islands,' however, the lowest reading was 30°.

"The *rainfall* has varied considerably in the dif-

ferent districts, but, taken as a whole, there has been no material departure from the mean.

"*Bright sunshine* shows a very general decrease, the percentage of the possible amount of duration having ranged from 3 to 12 over the greater part of England, from 10 to 17 in Scotland, and from 18 to 21 over Ireland and the S.W. of England."

MARKETS.

COVENT GARDEN, December 12.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

Our market is now mainly supplied with foreign goods. Hothouse Grapes are in good supply, and are only cleared at low rates. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	7 0	Lemons, per case	12 0	25 0
— Nova Scotia, brl.	8 0	21 0	Pine-apples, Eng., lb.	1 0	1 6
Cobs, per 100 lb.	140 0	...	— St. Michael, each	2 0	6 0
Grapes, per lb.	1 0	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0 9	...	Mushrooms, punnet	1 6	...
Beet, red, per dozen	1 0	2 0	Onions, per bunch	0 5	...
Carrots, per bunch	0 6	...	Parsley, per bunch	0 4	...
Cauliflowers, each	0 3	...	Rhubarb, per bundle	1 6	...
Celery, per bundle	1 6	2 0	Seakale, punnet	2 6	...
Cucumbers, each	1 0	1 6	Shallots, per lb.	0 6	...
Endive, per dozen	1 6	...	Spinach, per bushel	2 0	...
Herbs, per bunch	0 4	...	Sprouts, per lb.	0 3	...
Leeks, per bunch	0 3	...	Tomatos, per lb.	1 0	...
Lettuce, per dozen	1 6	...	Turnips, per bunch, new	0 5	...
Mustard and Cress, punnet	0 4	...			

POTATOS: — Market firm. For best samples, 90*s.* to 100*s.*; medium, 60*s.* to 70*s.*; and ordinary to inferior, 40*s.* to 50*s.* per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Euonymus, in var., per dozen	6 0	18 0
Aspidistria, doz.	18 0	42 0	Evergreens, in var., per dozen	6 0	24 0
— specimen plants, each	7 6	10 6	Ferns, in var., per dozen	4 0	18 0
Azaleas, various, each	2 6	3 6	Ficus elastica, each	1 6	7 0
Begonias, dozen	4 0	12 0	Foliage plants, various, each	2 0	10 0
Christmas trees, doz.	4 0	24 0	Marguerites, doz.	6 0	12 0
— — extra size, each	5 0	21 0	Palms in var., each	2 6	21 0
Chrysanth., dozen	6 0	15 0	Pelargoniums, scarlet, per dozen	6 0	8 0
— extra large, each	2 0	5 0	Roman Hyacinths, per dozen pots	9 0	12 0
Cyclamen, dozen	15 0	24 0	Solanums, per dozen	6 0	12 0
Cyperus, per dozen	4 0	12 0	Tulips, doz. pots	8 0	10 0
Dracæna terminalis, per dozen	30 0	60 0			
— viridis, per doz.	12 0	24 0			
Epiphyllum, per doz.	12 0	18 0			
Ericas, various, doz.	8 0	24 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Narciss., paper-white, French, doz. bun.	4 0	8 0
Azaleas, doz. sprays	0 9	1 6	— Eng., doz. sprays	1 0	1 6
Bouvardias, per bun.	0 6	0 9	Pelargoniums, 12 spr.	0 9	1 6
Calla æthiopica, 12 bl.	4 0	8 0	— scarlet, 12 spr.	0 9	1 3
Camellias, white, doz.	2 0	4 0	Primulas, double, 12 sprays	1 0	1 6
— various, per doz.	1 0	2 0	Roman Hyacinths, Eng., doz. sprays	0 9	1 6
Carnations, 12 blms.	1 0	2 0	Roses, Tea, per doz.	1 0	3 0
Chrysanth., 12 bun.	4 0	12 0	— coloured, dozen	2 0	4 0
Chrysanth., 12 blms.	0 6	3 0	— French, dozen	1 0	2 0
Cyclamens, 12 blms.	0 4	0 9	— red, per dozen	1 0	2 0
Eucharis, per dozen	3 0	4 0	— Safrano, dozen	1 0	1 6
Gardenias, 12 blooms	6 0	12 0	Spirea, doz. sprays	1 0	1 6
Heliotropes, 12 spr.	0 6	1 0	Stephanotis, 12 spr.	5 0	8 0
Lilac, white, Fr., bun.	6 0	8 0	Tuberoses, 12 blms.	1 0	1 6
Lilium, var., 12 bl.	2 0	6 0	Tulips, doz. blooms	1 0	2 0
Lily of the Valley, doz. sprays	6 0	9 0	Violets, 12 bun.	1 0	2 0
Maiden Hair Fern, 12 bun.	4 0	9 0	— French, bunch	1 6	2 6
Mignonette, 12 bun.	2 0	4 0	— Parma, 12 bun.	3 0	4 0
— French, per bun.	1 6	2 0			
Marguerites, 12 bun.	3 0	6 0			

ORCHID-BLOOM in variety.

Trade slack; but a little improvement upon last week.

SEEDS.

LONDON: *Dec.* 11.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, write that the seed markets are this week well attended owing to the presence in London of a large number of agriculturists up for the Cattle Show. As regards clover seeds generally, no quotable variation can be noted. A fair quantity of new English red is now showing. Mustard and rapeseed keep steady. In winter tares there is no change. New Zealand advices describe the Colony as bare of cocksfoot. For bird seeds, as is usual towards Christmas, the demand is meagre. Blue peas are held at full rates. Linseed quiet, but steady.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, for the week ended December 7:—Wheat, 30*s.* 2*d.*; Barley, 30*s.* 2*d.*; Oats, 17*s.* 7*d.* For the corresponding period in 1888:—Wheat, 31*s.* 3*d.*; Barley, 27*s.* 4*d.*; Oats, 16*s.* 9*d.*

FRUITS AND VEGETABLES.

SPITALFIELDS: *Dec.* 11.—English Apples, 3*s.* to 6*s.* 6*d.* per bushel; American Apples, 14*s.* to 20*s.* per barrel; Savoys, 1*s.* 6*d.* to 3*s.* per tally; Cabbages, 1*s.* to 2*s.* do.; Curly Kale, 9*d.* to 1*s.* per bushel; Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Cauliflowers, 5*s.* to 7*s.* 6*d.* per tally; bunch Greens, 2*s.* 6*d.* to 4*s.*; Spinach, 1*s.* to 1*s.* 6*d.* per bushel; Brussels Sprouts, 9*d.* to 1*s.* 6*d.* per half-sieve; Turnip-tops, 9*d.* to 1*s.* 6*d.* per sack; Sprouting Brocoli, 1*s.* to 1*s.* 6*d.*; ditto, 6*d.* to 9*d.* per sieve; Parsnips, 4*d.* to 8*d.* per score; Beetroots, 3*d.* to 4*d.* per dozen; Turnips, 1*s.* 6*d.* to 2*s.* per dozen bunches; Carrots, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Parsley, 1*s.* 6*d.* to 2*s.* do.; Celery, 4*s.* to 8*s.* per dozen bundles; Horseradish, 1*s.* 1*d.* to 1*s.* 4*d.* per bundle; Leeks, 1*s.* to 1*s.* 6*d.* per dozen; Mustard and Cress, 1*s.* to 2*s.* per dozen baskets; Endive, 1*s.* to 1*s.* 6*d.* per dozen; English Onions, 9*s.* to 10*s.* per cwt.; Spanish Onions, 6*s.* 6*d.* to 8*s.* per case; Dutch Onions, 6*s.* 3*d.* to 7*s.* per bag of 110 lb.; Belgian Onions, 5*s.* 9*d.* to 6*s.* 6*d.* do.; Carrots, 20*s.* to 28*s.* per ton; Mangels, 16*s.* to 18*s.* do.

STRATFORD: *Dec.* 10.—There has been an excellent supply of all kinds of produce at this market during the past week, and a brisk trade was done, at the undermentioned quotations:—Cabbages, 1*s.* 6*d.* to 3*s.* per tally; Savoys, 3*s.* to 5*s.* do.; Cauliflowers, 4*s.* to 7*s.* 6*d.* do.; Turnips, 20*s.* to 40*s.* per ton; Carrots (household), 30*s.* to 40*s.* do.; do. (cattle feeding), 22*s.* to 25*s.* do.; Parsnips, 40*s.* to 50*s.* do.; Mangels, 15*s.* to 18*s.* do.; Swedes, 15*s.* to 20*s.* do.; Onions, English, 170*s.* to 180*s.* do.; do. Dutch, 6*s.* 6*d.* per bag; Apples, English, 2*s.* to 7*s.* per bushel; Watercress, 6*d.* per dozen; Celery, 3*s.* to 8*s.* per dozen rolls; do., 1*s.* to 1*s.* 3*d.* per half-dozen; Brussels Sprouts, 1*s.* 9*d.* to 2*s.* 3*d.* per flat; Chestnuts, 10*s.* to 14*s.* per sack.

POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 10. — Large arrivals, but including only a small proportion of best quality. These sell readily, but all the rest hang on hand, or are forced off at lower prices. Regents, 40*s.* to 85*s.*; Hebrons, 40*s.* to 95*s.*; Magnum Bonums, 45*s.* to 90*s.*; Imperators, 40*s.* to 70*s.* per ton.

SPITALFIELDS: *Dec.* 11.—Quotations: Magnums, 45*s.* to 60*s.*; Regents, 50*s.* to 80*s.*; Imperators, 50*s.* to 65*s.*; Hebrons, 45*s.* to 55*s.*; Early Rose, 40*s.* to 50*s.* per ton.

STRATFORD: *Dec.* 10.—Quotations: Scotch Regents, 60*s.* to 70*s.*; Scotch Magnums, 60*s.* to 85*s.*; English do., light, 50*s.* to 65*s.*; do., dark, 45*s.* to 50*s.*; Imperators, 55*s.* to 65*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime 78*s.* to 88*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 94*s.*; inferior, 26*s.* to 50*s.* Straw, 20*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

ARTIFICIAL MANURE FOR BUSH FRUIT: *S. W. T.* The ground not being presumably overdone with fish manure, the annual dressing of a manure rich in phosphates, like fish, might be continued by some form of bone manure, crushed or dust.

BRUSSELS SPROUTS FOR SEED: *A Constant Reader.* With plants of the age of yours, the best plan to pursue to preserve them from injury from very severe frosts would be to dig them up with large balls of earth attached after plucking off the Sprouts, and to plant them in large pots. These may then be put into cold pits, affording full exposure except during snow or hard frost, and brought into the open in April; or failing the cold pit, put them into the soil under the shelter of a wall where it would be easy to extemporise protection in hard weather. Hooping them over where they stand and protecting them by means of mats and litter is another way. In the warmer parts of the country plants to be employed as seeders need not be sown earlier than May. The plant is hardier than the Savoy, and in the event of no great amount of frost, it would be safe in the quarters. When in flower, thin out the head of flowers somewhat—the seed will be the better for it; and put a stout stake to each plant, making fast the stem to it, and loosely slinging the flower-head together, with one or two turns of the bast round the stake make it also secure. See that no other plant of Brassica is in flower at the same time within ten minutes' walk of the garden.

CREOSOTING TIMBER, FENCING-POSTS, &C.: *Old Subscriber.* The timber is first cut into scantlings, and then laid-by in an airy shed till the sap has dried out of it, when it is laid in a tank of creosote with regularity. It is allowed to remain in the tank until it becomes saturated, when it is fit for use after drying. J. Brown, in the *Forester*, gives the following recipe, among several others, for preserving timber:—1 lb. sulphate of copper; 1 lb. sulphuric acid; 6 gallons of water. Dissolve the sulphate of copper in 1 gallon of boiling water; then add 5 gallons of cold water; mix well, and then add the sulphuric acid—common strong oil of vitriol. Following these proportions, any quantity of the mixture may be made. In using it, the tank should be filled to about two-thirds of its depth, and the timber to be steeped should be laid in it in a regular manner. The timber should be well seasoned before it is put into the tank. Small stuff will be soaked in twenty-four hours, and large scantling in proportion.

CURRANT BUD DISEASE: *J. R.* The result of the attack of an extremely minute insect, or mite. Burn the affected twigs, and don't shoot the birds.

EUCHARIS: *S. L.* Yes, certainly there are mites. There are said to be cures for the malady, but we have doubts. Try some of them, and kindly send us your experience.

FRUIT GARDEN: *E. S.* Do not take over the lease without consulting a solicitor, or you may make yourself liable for repairs and renewals, which should perhaps fall on the original holder of the lease. The trees and vegetables on the ground should be valued by a competent horticultural valuer, and you must pay the outgoing tenant for them. The lease has not expired by five years, so the conditions imposed do not touch you. Get the lease drawn up by a lawyer.

GARDENER TO THE UNITED STATES OF AMERICA: *P. A.* The older States, or the large towns in almost any part of the more temperate regions, are best for a gardener with only such training as is afforded here.

INSECTS: *N. N. E.* It is quite a mistake to suppose that Aphodius fimetarius (which is especially a species, as its name implies, which feeds on excrement), should have attacked young Orchid bulbs, These are occasionally injured by several other kinds of insects which have been illustrated in our pages.

LILY OF THE VALLEY: *G. C.* The crowns sent possess embryo flower spikes, and their failure to flower may be due to some fault in management; but as these plants often fail in the best hands, you must take courage and try again.

NAMES OF FRUITS: *C. Bros. & Co.* Warner's King. —*T. Warner.* 1, Fearn's Pippin; 2, Golden Spire. —*Pomona.* 1, Stirling Castle; 2, Hanwell Souring; 3, Sturmer Pippin.

NAMES OF PLANTS: *J. Kent.* Vanda tricolor, approaching the form known as V. suavis, which is a colour variation of the former.—*J. R.* Nägelia Mrs. Fox Strangways. The "fungus" is the common Mushroom.—*E. J. P.* 1, Nephrolepis Bausei; 2, N. rufescens; 3, Adiantum elegans; 4, Pteris serrulata cristata var. Other questions next week.—*T. W. B.* 1, Adiantum macrophyllum; 2, A. Sancta Catherinæ (a form of A. trapeziforme),

which has a habit of turning brown at the tips.—*J. H. P.* 1, Corypha australis; 2, Chamærops humilis; 3, Pteris tremula.—*E. A. M.* The leaf is that of Aralia crassifolia. The others next week.

POTATO FORCING, AND CUCUMBER GROWING, FOR PROFIT: *Constant Reader.* Early varieties of Potatos put in during the present month in pots, or shallow and narrow boxes, of light soil, and not filling up either with soil, but leaving space for moulding, would give a crop of useable tubers in three months, or less. Whether such small culture as you would practice here by means of heat derived from comparatively costly fuel, will enable you to make a profit by the sale of the produce in the London markets, is very doubtful, as you would have to compete with the much more cheaply raised produce of Southern France, Algiers, Malta, &c. Cucumbers are profitable early in the season—that is, previous to, and during the period you mention. Afterwards comes the deluge. Tomatos are better paying. Chrysanthemums of white and decided colours, in good form, especially the Japanese, pay well at present, but to get good prices, the supply must be constant and regular, or the market buyers will avoid dealing with you except in a casual uncertain manner.

REMEDY AGAINST MILDEW AND APHIDES: *R. D. S.* The liquid sent greatly resembles by its action in water, and in smell and colour, an old-fashioned remedy made by many gardeners for their own use. The only ingredients of this insecticide were lime and sulphur, 1 lb. of each boiled in 4 quarts of water for half an hour. It kills mildew and aphis when used at the rate of a wineglassful to 1 gallon of water. Yours does the same. It should not stay on any part of a plant more than 10 minutes, and should then be perfectly washed off. Grapes are readily injured by it. We should suppose that the liquid could be made at a cheaper rate than that of the bottles it would be put in for retailing.

SESBANIA GRANDIFLORA: *J. K. B.* This plant belongs to Leguminosæ, and has rose-red, white, or rusty-yellow flowers; the standard is oval-oblong, shorter than the wings; raceme few-flowered. It blooms in July and August. The leaves consist of many pairs of glabrous leaflets. Height, 14 to 20 feet. An inmate of the stove. Thrives in loam, peat, and sand, and is increased by cuttings of half-ripened shoots, put into sand under a bell-glass.

TEMPERATURES: *Enquirer.* 1859—December 24: maximum, 48°, minimum 29°; December 25: maximum, 45°, minimum, 36°. 1860—December 24: maximum, 32, minimum, 4°; December 25: maximum, 31°, minimum, 19°. The above data were taken at Chiswick.

THE FRUITING DUCKWEED: *B.* This name has been applied to the pretty little Nertera depressa, which has nothing whatever to do with Duckweed proper, while the implication that the true Duckweed does not produce fruit is certainly unproven. We never saw the fruit of the Duckweed, though the flowers may frequently be met with.

CATALOGUES RECEIVED.

W. E. BOYCE, Victoria Cottages, Highgate, London, N.—Chrysanthemums, and Directions for Growing Them.

H. and F. SHARPE, Wisbech, Cambridgeshire—Special Offer of Seed Potatos.

DICKSONS (Limited), Chester—Seeds and Shrubs.

THOS. METHVEN & SONS, Edinburgh, N.B.—Forest and Ornamental Trees.

HOGG & WOOD, Coldstream and Duns—Ornamental Trees and Shrubs, Fruit Trees, &c.

COMMUNICATIONS RECEIVED:—E. C.—A. L. R.—Udo Dammer.—J. W.—P. S., La Mortala.—F. S., Florence.—W. P.—E. P., Ghent.—L. L.—E. A., Paris.—W. C. Mildura.—*Live Stock Journal.*—Harry Etherington.—F. H. F.—W. Straton (a report was already in type).—C. O.—J. B.—A. Macleod.—H. P.—Messrs. J. Carter & Co.—Messrs. Webb & Sons.—Prof. Macowan, Cape Town.—Ch. de B. Lierre.—C. B. S.—W. R.—R. B.—H. W. W.—W. B. H.—Foster & Pearson.

ENQUIRIES.

"He that questioneth much shall learn much."—BACON.

Will any of our correspondents kindly tell *W. E.* how field mice in plantations of trees may be destroyed?

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CRUSHED BONES in all sizes, for **VINE BORDERS, LAWNS, POTTING, GRASS LANDS, &c.**

Also BONE MEAL for POULTRY FEEDING.

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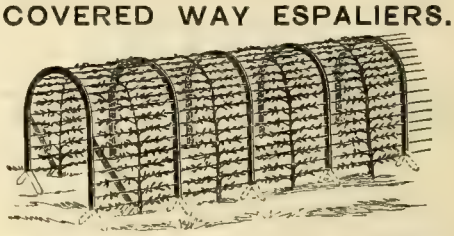
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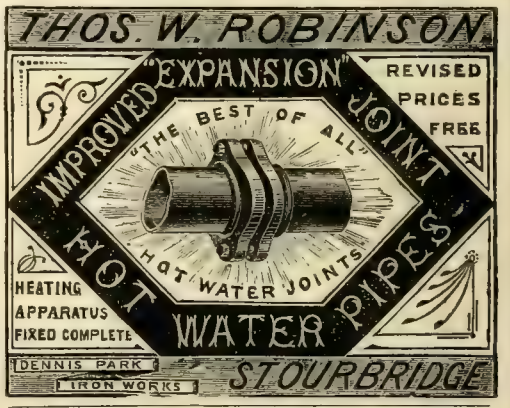
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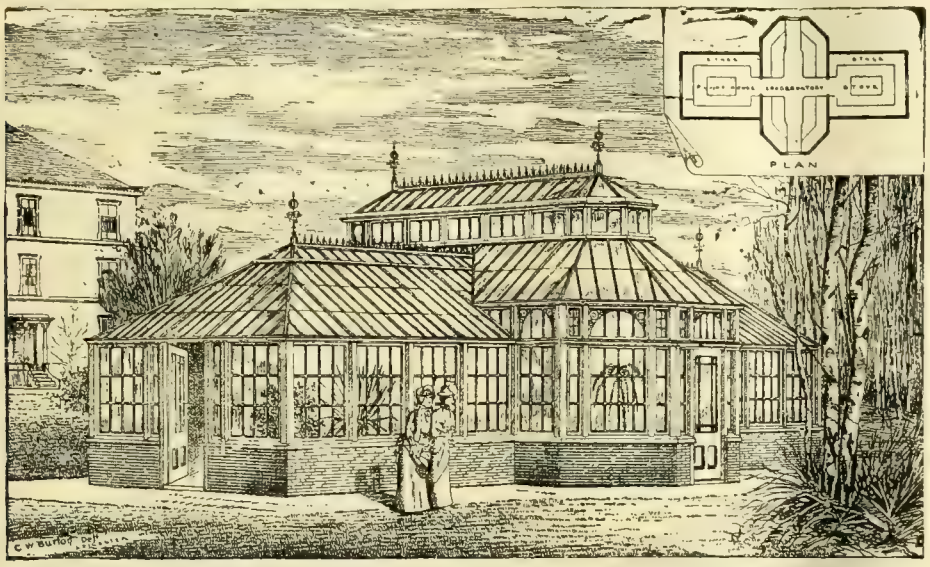
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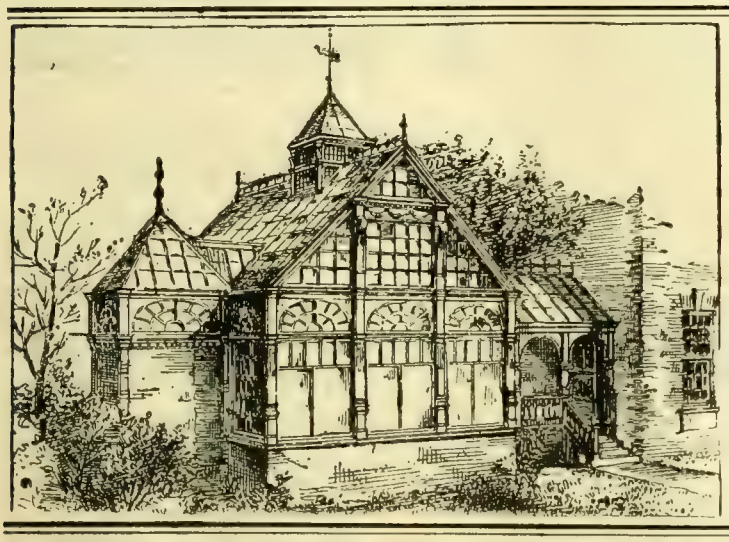
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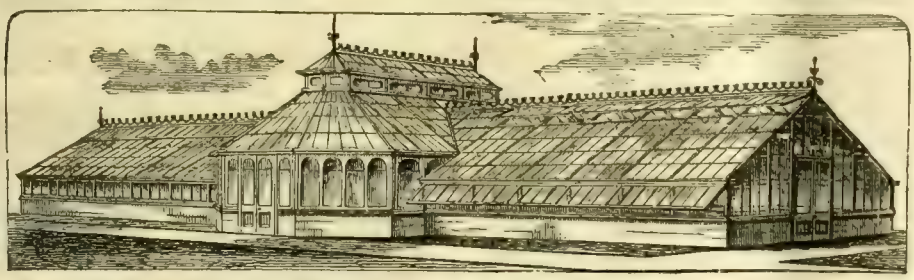
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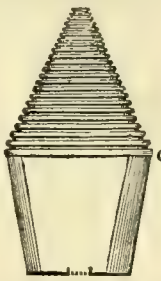


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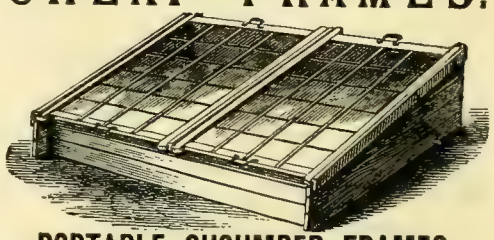
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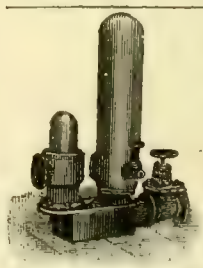
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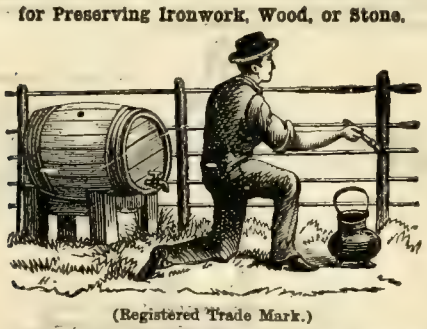
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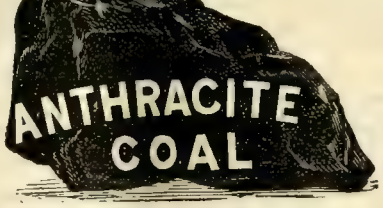
No. 57.—Melon and Cucumber Frame.

The illustration shows a Three-light Frame, 12 feet long by 6 feet wide. Height at front 11 inches, height at back 22 inches. Made of thoroughly seasoned redwood deal, sides and ends 1¼ inch thick, screwed together at the angles, and with the necessary parting pieces and runners for the lights, which are 2 inches thick, strengthened with iron bar across, and fitted with iron handle complete. All parts painted three coats of best oil colour, and light glazed with 21-oz. glass, nailed and bedded in good putty.

1-Light Frame	... 4 ft. by 6 ft.	CASH PRICES	£2	0 0
2 „ „	... 8 ft. by 6 ft.		3	0 0
3 „ „	... 12 ft. by 6 ft.	CARRIAGE AND	4	5 0
4 „ „	... 16 ft. by 6 ft.		5	10 0
5 „ „	... 20 ft. by 6 ft.	PACKING FREE.	6	15 0
6 „ „	... 24 ft. by 6 ft.		8	0 0

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VI. Heating of Vineries.
VII. Planting Vines: when and how to do it.
VIII. The General Management of Vineries.
IX. Pruning and Training the Vine.
X. Disbudding and Stopping the Shoots.
XI. Setting the Fruit.
XII. Thinning the Fruit.
XIII. Keeping the Fruit.
XIV. Packing Grapes.
XV. Pot Culture of Vines.
XVI. Fruiting Vines in Pots.
XVII. Pot Vines as Decorative Table Plants.
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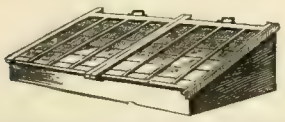
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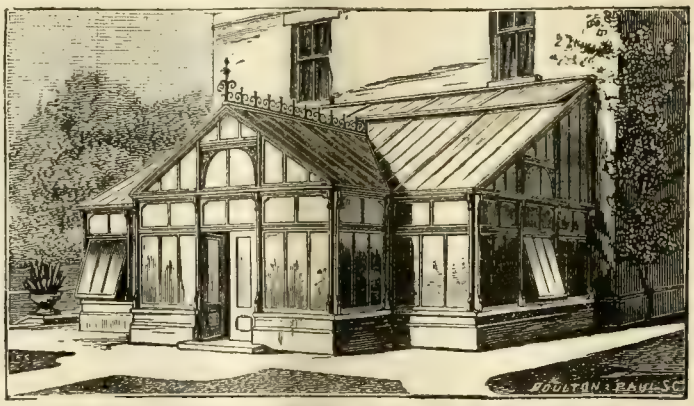
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3 ,,	12 by 6	..	..	4	5 0
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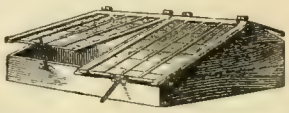


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3 ,,	12 by 6	..	..	6	0 0
4 ,,	16 by 6	..	..	7	12 0
5 ,,	20 by 6	..	..	9	5 0

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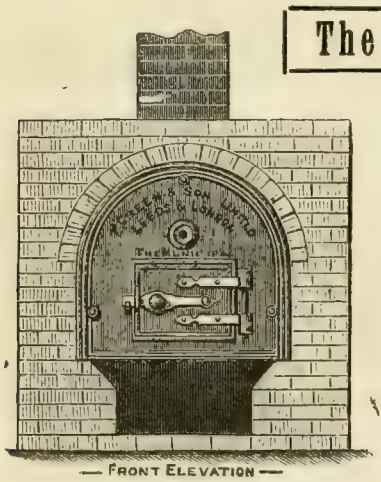
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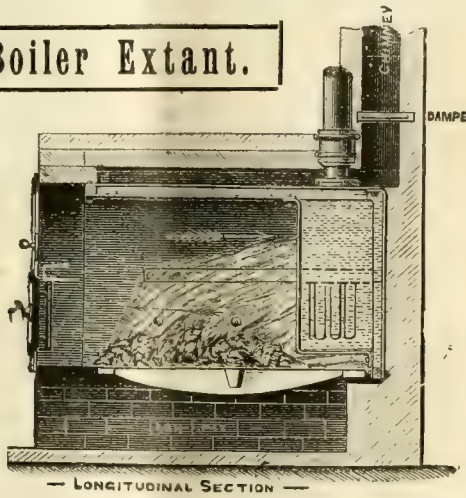
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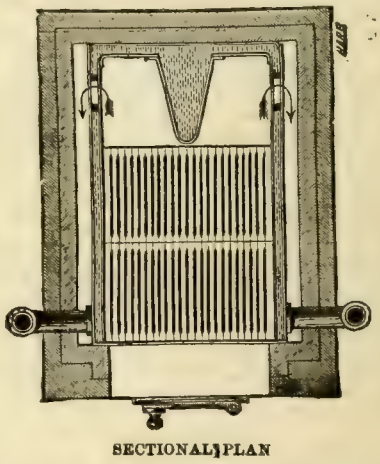
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— LONGITUDINAL SECTION —



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The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back.
The front elevation shows it set in *brickwork, which is necessary for this class of boiler.*

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MB 1	3	ft.	2	in.	long by	2	ft.	0	in.	wide by	2	ft.	0	in. deep
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MB 3	5	0		,,	by	2	3		,,	by	2	6		,,
MB 4	6	6		,,	by	3	0		,,	by	3	0		,,
MB 5	8	6		,,	by	4	0		,,	by	3	9		,,

Calculated to heat 4-in. piping as follows:—

1000 ft.	Price	£15	0	0
1280	,,	21	0	0
2200	,,	32	0	0
4000	,,	60	0	0
7000	,,	85	0	0

TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS. **Re HEATING APPARATUS.** Borough Engineer's Office, Municipal Buildings, Leeds. *January* 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings.
The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1¼ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.
Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.
I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, *November 10th*, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5,000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.
I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.
MESSRS. THOS. GREEN AND SON, LTD., LEEDS. Yours faithfully, (Signed) G. W. BASHFORD.

AND HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 14, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2556.

No. 156.—Vol. VI. { Third Series. } SATURDAY, DECEMBER 21, 1889. [Regt. as a Newspaper. { Price 3d. Post-Free, 3½d.

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NOTICE TO ADVERTISERS.—*It is particularly requested that all Advertisemen's intended for next week's issue, should be addressed to the Publisher, and should be despatched so as to reach this Office not later than* TUESDAY MORNING *next.*

THE GARDENERS' CHRONICLE IN AMERICA.

The Subscription to America, including Postage, is $4.30 for Twelve Months.

Agent for America:—E. H. LIBBY, Manager, "The American Garden," 10, Spruce Street, New York, to whom American Orders may be sent.

ROYAL BOTANIC SOCIETY, Gardens, Regent's Park, N.W.
ARRANGEMENTS for 1890.
EXHIBITIONS of SPRING FLOWERS, WEDNESDAYS, March 26, April 23.
SUMMER EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 14 and June 11.
EVENING FÊTE, WEDNESDAY, July 2.
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Strong plants in 60's, 12s. per dozen.
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CUT LILIES of the VALLEY, Roman HYACINTHS, Scarlet TULIPS, and White CHRYSANTHEMUMS in quantities, at lowest market prices.
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The finest Raspberry and best cropper ever known. First-class Certificate, Royal Horticultural Society. Canes 30s. per 100; 4s. per dozen. Trade supplied; Cash with order. Captain Strawberry Plants, 4s. per 100. Buy direct from the Grower.
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THOMSON'S IMPROVED VINE and PLANT MANURE.—This valuable Manure is made only by us. Every bag and tin has our name on it. To be had of all Nursery and Seedsmen, and direct from us. 1 cwt. and over carriage paid. London Agent—Mr. GEORGE, 10, Victoria Road, Putney.
WM. THOMSON AND SONS, Clovenfords, Galashiels, N.B.

SALES BY AUCTION.

Monday Next.

LILIES, BULBS, GREENHOUSE PLANTS, FERNS, JAPANESE CURIOS, &c.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on MONDAY NEXT, December 23, at half past 12 o'Clock, about 200 lots of various Japanese and English-grown LILIES, including many extra large roots; 100 lots of DUTCH BULBS, DAFFODILS, BEGONIAS, LILY OF THE VALLEY, SPIRÆAS, 60 lots of PALMS, FERNS, &c., for Christmas Decoration; and 80 lots of CHINESE and JAPANESE CURIOS, consisting of VASES, PLATES, &c., in different WARES, useful for CHRISTMAS PRESENTS.

On view morning of Sale, and Catalogues had.

Nursery Stock Sales from Sample.

MESSRS. PROTHEROE AND MORRIS desire to announce that they purpose re-commencing their SAMPLE SALES on THURSDAY, January 9, for which they will be glad to RECEIVE NOTICE OF ENTRIES AS EARLY AS POSSIBLE.

Auction and Estate Offices, 67 and 68, Cheapside, E.C.

Mount View, Sheffield.

The VALUABLE COLLECTION of upwards of 1500 ESTABLISHED ORCHIDS formed by the late David Ward, Esq., J.P. The plants are in the best possible condition, and the collection is one of the finest in the district, and includes Specimens from several well known Collections.

MESSRS. WILLIAM BUSH AND SON, respectfully give notice that they are favoured with instructions from the executors to SELL by AUCTION on the Premises as above, about the MIDDLE of JANUARY NEXT.

Further particulars will be given in future advertisements. Catalogues are in preparation. May be viewed by order from the Auctioneers. Auctioneers' Offices and Sale Rooms, 2 and 3, East Parade, Sheffield.

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Further particulars of Messrs. PROTHEROE AND MORRIS, 67 and 68, Cheapside, London, E.C.

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The STOCK can be PURCHASED by VALUATION. Part purchase money can remain on.

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Have an immense stock, to which they are constantly adding, and all are offered at the lowest possible prices. LISTS with Prices and particulars post-free on application to the Company,

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ROBERT NEAL begs to call the attention of Gentlemen, Local Boards, Builders, and others who intend planting this season, to his large and varied stock of Shrubs, Standard, Ornamental, and FOREST TREES FRUIT TREES, ROSES, CLIMBING PLANTS, &c., which, being well transplanted, are in fine condition for removal, and having been grown in the vicinity of London, are especially adapted for town and street plantings. Special quotations for large quantities, delivery free within a radius of six miles of the nursery. Inspection of the Stock solicited. CATALOGUES free on application. Also to offer extra fine forcing SEAKALE and RHUBARB.

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Roman HYACINTHS, 1*s.* 6*d.* per doz., cut; 2*s.* per doz., on roots.

TULIPS, white Pottebakker, 2*s.* per doz.; scarlet, 1*s.* per doz.

LILY of the VALLEY, on roots or cut, 2*s.* per doz.

Specimen flowers of Princess Teck CHRYSANTHEMUMS, cut long at 3*s.* 6*d.* per doz.

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GOOD LUCK.—INTERESTING CHRISTMAS PRESENTS.

GOOD LUCK.—CHINESE SACRED LILIES. The Chinese Sacred Lily is the Asiatic's symbol of good luck. They can be seen in all the shops and houses of China and Japan. It is unquestionably of the Polyanth-Narcissi tribe, but unlike the varieties of this group known in Europe, the Chinese Sacred Lily produces very large bulbs, which throw up 5 to 10 spikes of large and perfect waxy white blossoms, with a yellow centre, exquisitely perfumed. We offer Bulbs direct from the higher mountains of Northern China Price, 1*s.* each, 10*s.* 6*d.* per dozen, carriage free. DECORATED JAPANESE BOWLS for 1 Bulb, price 1*s.*; for 2 Bulbs, 2*s.*; for 3 Bulbs, 2*s.* 6*d.*; for 4 Bulbs, 3*s.* 6*d.*; for 6 Bulbs, 4*s.* 6*d.* Full directions for cultivation supplied to all purchasers.

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New Fern, 1889.

ADIANTUM WALTONII DIFFUSUM.—First-class Certificate was awarded by the Royal Horticultural Society on October 9, 1888. See opinions of the Horticultural Press, October 11 and 13, 1888.

The Executors of Henry Walton have pleasure in announcing that this very fine Adiantum is now being offered to the Public. We have every confidence in recommending it, and feel certain that it will give every satisfaction either as a specimen plant or for cutting purposes, the fronds being light and graceful, three to five times divided, from 2 to 2½ feet in length, and, when mature, are of a pleasing shade of glaucous green. A great improvement on A. Waltonii (T. Moore), and a more desirable variety than A. fragrantissima (see *Gardeners' Chronicle*, November 16, 1889, p. 557). All who have seen the parent plant have pronounced it to be a great acquisition.

Strong Plants, 3*s.* 6*d.* each.

Small Plants, from boxes, 1*s.* 6*d.* each, 12*s.* per dozen.

We hold a fine healthy stock of French and Show PELARGONIUMS, in 3-inch pots, per dozen, 4*s.*; per 100, 30*s.*, our selection. Price to the Trade on application.

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THE FOLLOWING TREES, having stout, straight stems, fine heads, and splendid roots, all having been transplanted within two years:—

ACACIA BESSONIANA, 12 to 14 feet.
" SEMPERFLORENS, 12 to 14 feet.
ACER DASYCARPUM, 12 to 16 feet.
" " WIERII LACINIATA, 10 to 14 feet.
" NEGUNDO VARIEGATA, Standards, 8 to 10 feet.
" REITENBACHII, 12 to 14 feet.
" SCHWEDLERII, 12 to 16 feet.
" WORLEYII, 12 to 14 feet.
ASH, Mountain, 12 to 14 feet.
BEECH, common, 10 to 12 feet.
" Purple, Pyramids and Standards, 10 to 16 feet.
BIRCH, Silver, 12 to 14 feet.
CHESTNUTS, Horse, 14 to 16 feet.
" " Double White, 10 to 16 feet.
" " Scarlet, 12 to 16 feet.
" Spanish, 12 feet.
ELMS, English, 10 to 12 feet.
" Guernsey, 12 feet.
LIMES, 12 to 16, and 20 feet.
" Silver-leaved, 10 to 14 feet.
LIQUIDAMBER, 6 to 10 feet.
MAPLE, Norway, 12 to 16 feet.
OAK, English, 10 to 14 feet.
" Scarlet, American, 12 to 14 feet.
PLANES, 12 to 16 feet.
POPLAR, Bolleana, 10 to 14 feet.
" canadensis nova (the true variety), 12 to 16 feet.
" Lombardy, 14 to 16 feet.
SYCAMORE, Common, 14 to 16 feet.
" Purple, 14 to 16 feet.
THORNS, Double, Scarlet, 8 to 10 feet.
" " White, 8 to 10 feet.
WALNUTS, Common, 10 to 12 feet.

WEEPING TREES.

BEECH, Weeping, Pyramids and Standards, 8 to 12 feet.
" " Purple, Pyramids and Standards, 7 to 12 feet.
BIRCH, Young's Weeping, Pyramids and Standards, 8 to 14 feet.
ELMS, Weeping, Pyramids and Standards, 7 to 14 feet.
LARCH, Weeping, Pyramids, 6 to 10 feet.
OAK, Weeping, English Standards, 10 to 12 feet.
POPLAR, Weeping, Pyramids and Standards, 10 to 12 feet.
ANTHONY WATERER, Knap Hill Nursery, Woking, Surrey.

LILIES and ORCHIDS.—An immense stock of recently imported Plants, compels a sale of the Established Plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains; see public journals for high prices recently obtained. The special offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and trade.

My first consignments of LILIUM AURATUM have arrived, prices 4*d.*, 6*d.*, 8*d.*, 1*s.*, and 1*s.* 6*d.* each; per 100, 30*s.*, 35*s.*, 45*s.*, 55*s.*, and 70*s.* Liberal allowance to the Trade.

Apply for CATALOGUE to
W. GORDON, The Nurseries, Amyand Park Road, Twickenham.

NEW RASPBERRY,
THE VICTOR.
The best flavoured Raspberry in cultivation, very fine and heavy Cropper; well suited for Preserving Canes, 5*s.* per doz., 35*s.* per 100. The Trade supplied.
J. POLE, Inkpen, Hungerford.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that the FIFTY-FIRST ANNUAL GENERAL MEETING of the Members of this Institution will be held at "SIMPSON'S," 101, STRAND, W.C., on THURSDAY, the 16th of January next, for the purpose of receiving the Report of the Committee and the Accounts of the Institution for the present year, and electing Officers for the ensuing year, and other affairs, and also for the ELECTION of NINE PENSIONERS on the Funds. The Chair will be taken at 3 o'Clock. The Ballot will close at 5 o'Clock precisely.—By order, E. R. CUTLER, Sec.

50, Parliament Street, London, S.W.—Dec. 16, 1889.

P.S.—The Voting Papers have all been delivered, any Subscriber who may not have received one is requested to make immediate application to the Secretary.

CHEAP TO CLEAR.—HYACINTHS, mixed bedders, 5*s.* per 100; TULIPS, Double, Duc Van Thol, 15*s.*; Duke of York, 25*s.*; Blanc Border, 25*s.*; Yellow Rose, 25*s.*; Gesneriana, 25*s.*; Parrot, mixed, 25*s.*; Parrot, Constantine, 25*s.*; Parrot, Perfecta, 25*s.*; Imperator Alexander, 25*s.*; Rose de Peloyne, 25*s.*; Bonaparte, 25*s.*; Single and Double, mixed, 15*s.*; Bizarres Byblœum, 25*s.*; Isabella, 25*s.* per 1000. NARCISS, Paper White, 25*s.*; Double Roman, 25*s.* per 1000. LILY OF THE VALLEY CROWNS, first size, 26*s.* per 1000. TUBEROSES, Excelsior Pearl, 70*s.*; ditto, Double, 70*s.* per 1000. Above are subject to being unsold.

MICHAEL RAINS AND CO., Dutch Bulb Warehouses, 34, Mansell Street, Aldgate, City, London. Established 1856.

Special Offer of Large Well-grown Evergreens and CONIFERS, frequently transplanted, standing singly, and every plant a specimen, offered by

WILLIAM WOOD AND SON,
The Nurseries, Maresfield, Uckfield, Sussex.
Single plants supplied if required at the dozen price.

Coniferæ.

ABIES DOUGLASII, 5 to 6 ft., 18*s.*; 6 to 7 ft., 24*s.* per dozen.
" " GLAUCA, very fine, 5 to 6 feet, 24*s.* per dozen.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15*s.*; 5 to 6 feet, 18*s.*; 6 to 7 feet, 24*s.* per dozen.
CUPRESSUS LAWSONIANA, 6 feet, 18*s.*; 6 to 7 feet, 24*s.*; 7 to 8 feet, 30*s.*; 8 to 10 feet, 40*s.* per dozen.
" LAWSONIANA ERECTA VIRIDIS, extra fine, 4 feet, 42*s.*; 5 feet, 60*s.* per dozen.
PICEA PINSAPO, 2½ to 3 feet, 30*s.*; 3 to 4 feet, 42*s.* per dozen.
" PECTINATA (Silver Fir), 3 to 4 feet, 18*s.*; 4 to 5 feet, 22*s.* per dozen.
PINUS AUSTRIACA, 3 to 4 feet, 20*s.*; 4 to 5 feet, 28*s.* per doz.
" LARICIO, 4 to 5 feet, 28*s.*; 5 to 6 feet, 36*s.* per dozen.
" SYLVESTRIS (Scotch Fir), 4 to 5 feet, 20*s.*; 5 to 6 feet, 25*s.* per dozen. From nursery rows, 2 to 3 feet, 35*s.*; 3 to 3½ feet, 50*s.* per 1000.
" INSIGNIS, 5 to 7 feet, 30*s.* per dozen.
" CEMBRA, 3 to 4 feet, 15*s.* per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, 12*s.* per dozen.
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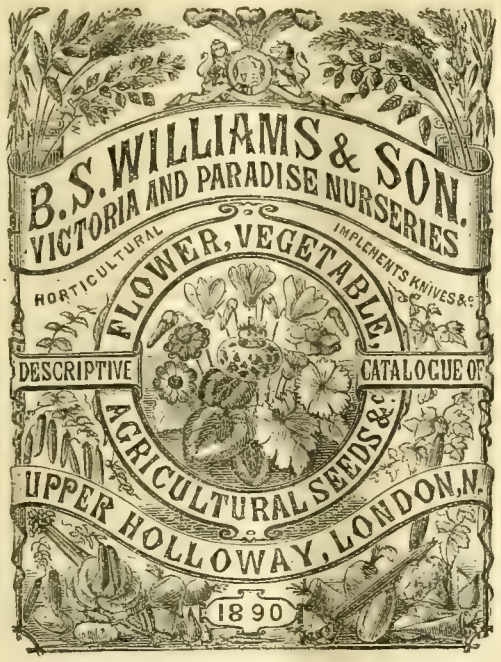
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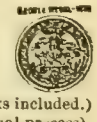
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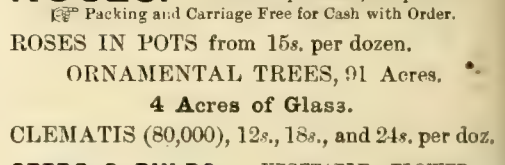
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THE
Gardeners' Chronicle.

SATURDAY, DECEMBER 21, 1889.

CHRISTMAS DECORATIONS.

THE change that has taken place of late years in house decoration at Christmas tide is something remarkable. It is not many years since the summit of perfection in the garnishing of our rooms, as well as of our churches, was considered to be attained in the wholesale lumping of bunches of Holly, Aucuba, Portugal Laurel, and, indeed, any other evergreen that could be laid under contribution in our shrubberies. In course of time, a different handling of the same materials followed; a more careful system of arrangement was introduced, together with some amount of artistic grouping. Then came the use of everlasting flowers—the persistent flower-heads of the Immortelles of the French (Helichrysum orientale), which were dyed all sorts of unnatural and vulgar colours; these, however, were soon supplanted by other Composites, which were simply dried in their natural colours, the most beautiful of which is still, and always must be, a favourite, namely, the Cape Silver-flower (H. vestitum). Its form, its whiteness, and its persistent character, commend its introduction into almost any style of decoration. Many different kinds of grasses have also been introduced for some years past, but the tendency has been to dye them, and so to spoil their beauty.

A glance at the shop windows in London and any large town at the present time indicates that the vegetable kingdom is now being very largely and variously drawn upon for supplying decorative materials, and an enquiry into this subject has shown how extensive this trade has become, and how numerous are the plants which supply the market. Though these decorative plants are more *en evidence* at this particular time of year, they are by no means only a Christmas commodity, for they are available, and, indeed, are used, more or less at all seasons of the year.

To make myself better acquainted with what

is in the London market at the present time in the way of dried grasses, foliage, and flowers, I put myself in communication with Messrs. Corry, Soper, Fowler & Co., of Finsbury Street, and Messrs. Hooper & Co., of Covent Garden, to the former of whom I am indebted for a very large series of specimens intended for the Kew Museums, and to the latter also for some specimens, and much information as to their uses. To realise the full beauty of these dried plants individually, one must see them in large quantities, as at the former establishment, and study their artistic grouping as shown by Messrs. Hooper.

Grasses.

There are but few people who, in a summer's walk in the country, are not struck with the singular beauty of many of the British grasses which grow in our fields or hedgerows. Gathered and carefully dried, many of them lose but little of their beauty, and are excellent materials for grouping in vases, and for various other styles of decoration. Numerous species of British and foreign grasses, even when perfectly dry, retain much of their natural green colour, which lasts, even on exposure, for a length of time. The pale yellow so characteristic of our cereal grasses at the time of harvest is very pleasing to the eye, and these, in their numerous forms and habits, carefully blended with the darker-flowered Arundos or Reeds, and the graceful Cape Restiaceous plants which are recent additions to our winter decorative plants, make ample material for very varied treatment.

It is surprising that though British grasses have always been more or less used for decorative purposes when dried, it is not till quite recently that they have become actual articles of commerce. Now, however, that we have such a variety at our command, it is to be hoped that these natural coloured grasses will soon drive out the artificially-dyed abominations from our Markets.

Messrs. Hooper, in their little book on the decoration of rooms with dried grasses and foliage, tell us that this system of decoration is now known under the name of Makart, derived from the fact that the celebrated painter, Hans Makart, upon one occasion decorated his *salon* with the dried leaves of Palms, mingled with Pampas and other grasses, and that the arrangement was greatly admired by the Emperor of Austria during one of his visits to the artist's studio; and since that time the use of these materials has spread very rapidly, so that "the world is now ransacked to provide our stores with the finest varieties, and the most charming forms, and a complete industry has been formed in these Makart decorations."

[A pretty and artistic development of the Makart bouquet, which has recently been brought into notice, is that of M. Parent. At the establishment of this gentleman at 183, Regent Street, a variety of Palm-leaf fans, gilded and ornamented with a spray of dried grass, and baskets, or ostrich egg-shells, &c., filled with selections of the grasses named below, will be found. These will prove of much use where colour decoration is required. In addition to the grasses, branches of butcher's broom, seed vessels of various crucifers, the heads of the teasel, thistles, echinops, &c., are used, all being dyed in colours so delicate as to defy description; and do away with much of the objection raised to the crude vulgarity of flowers dyed in the ordinary manner. Brilliant beetles or butterflies are dotted here and there on the larger combinations, and lend a semblance of life.—Ed.]

The following enumeration will give some idea of the variety of plants now available for this class of decoration. The largest number belongs to the grass family. Of British grasses the most important are the Cock's-foot (Dactylis glomerata), Wild Oats (Avena fatua), Feather-grass (Stipa pinnata), Quaking-grass (Briza media). Horsetail (Lagurus ovatus), Reed (Phragmites communis), Canary-grass (Phalaris canariensis).

Amongst other grasses may be mentioned a bearded form of Wheat (Triticum vulgare), very near in appearance to the variety æstivum, the well known Japanese Eulalia japonica, the very beautiful American grass, Uniola paniculata, the Caucasian Bromus brizæformis, the exceedingly light and graceful Aira capillaris, or A. elegans, for it is known under both names from southern Europe, as well as the following from the same part of the world: Festuca rigida, Briza maxima, which, by the way, is often used in ladies millinery, and Avena sterilis, also Hordeum jubatum, from South America, and Setaria macrochæta, or Panicum italicum, and the panicles of the looser or more lax varieties of Sorghum vulgare.

The panicles of all these grasses are extremely varied in character, and can be used to produce a great variety of effects. In point of size, however, they are excelled by the graceful, silvery plumes of the Pampas-grass (Gynerium argenteum), and by the majestic drooping panicles of the so-called Uva-grass of South America (G. saccharoides), which are often seven or eight feet long, with stems so thick that they are used in their native country for making shafts for arrows.

Sedges and Rushes.

Besides the Gramineæ to which all the foregoing plants belong, other distinct natural orders help at the present time to furnish material for this kind of decoration, Cyperaceæ are represented in the reddish-brown flowering-spikes of Cyperus longus and Scirpus maritimus, Typhaceæ by the Bulrush (Typha latifolia), while Restiaceæ contributes most useful additions in Thamnochortus argenteus, the silvery sheen and graceful form of which, is perhaps not excelled by any other plant; also in T. giganteus and Staberoha cernua, all South African species.

Foliage.

In the matter of foliage, the most varied forms are now available, and include the leaves of Palms, such as species of Geonoma, Areca, Phœnix, and also of Cycas, all of which are so carefully dried as to retain their natural forms, and to a great extent their natural colours. Perhaps the most beautiful of all leaves, however, though they are small in size, are those known as Cape Silver leaves, the produce of the Proteaceous tree, Leucadendron argenteum, a tree whose geographical distribution is very limited, being confined to one side of Table Mountain, Cape of Good Hope. Of this we give an illustration (fig. 101) from a photograph sent to us by Mr. Ayres of Cape Town. The application of these leaves for decorative purposes is by no means new, but those now imported are larger and of a more silvery lustre than we have ever seen. The silvery cones of the Leucadendron are also very ornamental objects, and ought to be more used than they are.

Dried Flowers, Etc.

With regard to flowers, there is perhaps less novelty at the present time than with the plants we have already considered. Nothing can excel the Cape Silver flower (Helichrysum vestitum) already referred to. Helipterum roseum, advertised as Acroclinium roseum, is also much in demand; it is a native of Western Australia, as are also other species of Helipterum, generally known under the generic name of Rhodanthe. These, with various species of Helichrysum and Xeranthemum are produced by the great natural order Compositæ. The flowers of Gypsophila paniculata, as well as those of species of Statice, are also in the market; but the most attractive, perhaps, and certainly the most curious, are those known under the name of "Fairy Flowers," which are, however, flowers only in name; they are not artificial flowers even in the ordinary acceptation of that term, for they are not made to represent any flower in particular, and the material from which they are made is a perfectly naturally grown one. They are, indeed, manipulated from the pappus of some Asclepiadaceous plant, of which such genera as Gomphocarpus, Marsdenia, Fischeria, Calotropis, and others, suggest themselves. In these genera, after the removal of the woody covering of the capsule, the seeds are found closely packed inside, and surmounted with the light silky coma; these flossy crowns are bound together with very thin wire at their apices, and the bases from which the seeds have fallen off are set free, and spreading out all round, form the fluffy balls called Fairy flowers. In their natural colour of a silvery or creamy white, or even dyed with a slight pinky tinge, they are beautiful objects.

We have thus described some at least of the numerous dried grasses, foliage and flowers that at the present time enter into commerce. That the variety might easily be extended, and that the choice is almost unlimited, may easily be conceived. Nor is it necessary to confine the attention of those interested in the subject from a commercial point of view, to the natural orders from whence the bulk of those already known is drawn. It is true that these might be considerably increased, as for instance in the natural order Restiaceæ the following plants are very ornamental and have much to recommend them, Restio ferruginosus, R. sub-verticillatus, and R. rhodocoma from S. Africa, some of the Anarthrias from Australia, Leptocarpus scariosus also from Australia; some of the New Zealand and South African species of this genus are also very beautiful, and Lepyrodia Traversii from New Zealand.

To the list of perfect or more showy flowers, the following suggest themselves, all of which dry well, retain their natural colours, and are persistent: Helipterum variegatum, Helichrysum adenocarpum, H. stellatum, and H. sesamoides, all Composite plants from the Cape and from western Australia; Tetratheca viminea, nat. ord. Fremandreæ; Marianthus candidus, nat. ord. Pittosporeæ; Stackhousia Huegelii, nat. ord. Stackhousieæ; Comesperma flavum, nat. ord. Polygaleæ; Isotropis striata and Gompholobium capitatum, nat. ord. Leguminosæ; Verticordia pennigera, Leptospermum firmum, Hypocalymma angustifolium, and Calythrix flavescens, all belonging to the nat. ord. Myrtaceæ; Leucopogon glabellus, nat. ord. Epacrideæ; Conospermum triplinervium, and Grevillea Wilsoni, nat. ord. Proteaceæ; Anigozanthos viridis and A. Manglesii, nat. ord. Amaryllideæ; Johnsonia lupulina and Sowerbya laxiflora, nat. ord. Liliaceæ. Some of these plants may be difficult to obtain, and not at all likely to enter into commerce; but they are given as illustrations of the very varied orders from whence new materials might be sought, and a trade which has developed so largely of late years be still further extended. *J. R. J., Museum, Kew.*

MANURES.

Manure is not a mere incident of gardening, an item of small account, for upon an adequate supply of this substance depends whether the garden shall be a success or a failure—the manure heap is indeed the pivot of successful horticulture.

The price of land, and its rental value are now so great, that we can no longer afford to follow the easy slip-shod practices of our early history, when a moderate crop gave satisfactory returns for the small amount of labour bestowed, the rental value being of small account. Our gardening of the nineteenth century, to be successful, must take a more intensive character, we must have large and early crops or no profit; small crops and late do not pay.

The soil we cultivate may be capable of producing moderate results without much noticeable exhaustion, but the soil that produces extraordinary crops must have unusual natural fertility, or be handled with uncommon skill, and sustained by high-feeding.

This uncommon skill is afforded by the keen intelligence of the horticulturist, and the high-feeding is obtained by the judicious use of manure.

Object of Manures.

To manure the land is a very ancient practice. It was long supposed that the food of such a variety of plants, each with a different chemical composition, as are found in the mixed growth of a garden, must necessarily be different—almost as different as the properties of the plants themselves. But agricultural chemists have shown that the food of all plants is very much alike; though certain classes of plants, owing to their economic requirements, must be supplied with specific substances in greater abundance than others. What is good for vegetables and fruit is not always good for flowers, and this results not from the chemical difference between the constituents of the ashes of the vegetables, the fruit, or the flowers, but from the mode of growth of the various plants, and the particular object we have in view in their cultivation. It is not so much the question of the composition of plants, as of the length of time they may have for assimilating food from the soil that is the important factor in a garden.

The Identity of Plant Food.

It has been said by Sir J. B. Lawes that if we thoroughly understood the action of the ordinary manures of the farm, and their influence upon our crops, we should be in a better position to explain the effect of any particular ingredient in the artificial compounds sold in the market.

There are thirteen chemical elements in various forms of combination that are generally supposed to be concerned in plant-life. Some are furnished by the free hand of Nature in such quantity, that the horticulturist needs take no thought about their artificial supply.

For instance, in the form of carbonic acid, carbon is contained in the air in sufficient quantity to supply any crop, since there are 28 tons of carbonic acid in the air resting on every acre of the earth's surface. Oxygen and hydrogen are provided in in exhaustible quantity, and in just the right proportions in the form of water. One necessary physical condition of plant-life is moisture, and in the presence of water the chemical requirements of growth so far as oxygen and hydrogen are concerned are fully met. The soil also furnishes several of the other mineral elements in sufficient amount. But there are three constituents—potash, phosphoric acid, and nitrogen—which are aptly said by Professor Kedzie to constitute the golden tripod of plant-life; these are not only indispensable for all growth, but their limited supply correspondingly limits all the other conditions of growth. In manurial value they hold front rank, and upon their sufficient presence in the soil depends successful cropping, both in vegetables, fruit, and flowers. With a sufficient supply of these three ingredients in our soils in active form, there is no limit to production, save those imposed by the physical conditions of growth and season.

Definition of Manure.

Manure is any substance added to the soil to increase its fertility by changing its composition, or by affording an increased supply of plant-food.

A complete or perfect manure is one that furnishes all the materials necessary for successful plant growth. The best example is to be found in farmyard dung.

Animal excrements have been recognised from earliest times as powerfully promoting vegetation, and increasing fruitfulness. Dung was the only manure known to the ancients, this being next followed, probably, by the use of chalk, marl, and lime.

On very poor soils it is necessary to make a full return of all the elements of plant-food removed by the crops; but under the high-manuring frequently practised in garden culture, the contributions to the soil may be in excess of the removals, and the land may be increasing in fertility. In such cases a very partial manuring will suffice, a mere stimulant to encourage extraordinary growth being all that is required.

Effects of Manure upon the Soil.

Before entering upon the action of the several fertilising ingredients contained in manures, we may mention a few facts respecting their behaviour in the soil. Having already stated that potash, phosphoric acid, and nitrogen are by far the most important elements of plant-food, we will confine our remarks to those substances. The two former, phosphoric acid and potash, are perfectly soluble in water, but when added to a soil, they enter into combination with it, and thus become insoluble.

For example, if a solution containing potash or phosphoric acid be poured on a sufficiently large quantity of fertile soil, the water which filters through will be found, on testing, to be quite free from these ingredients. This retentive power of soils is of great practical importance in plant growth, especially in the restricted area of pot-culture; if it were otherwise, the frequent waterings rendered necessary when limited quantities of soil are used would soon wash away all the soluble mineral salts of the soil, and the plants would starve for lack of nourishment. It has been conclusively proved, however, that if these manuring mineral substances are applied to soils, and for any reason the plants do not take them up, they remain there until they are wanted. It is far different with the third element of plant food which has been mentioned, namely, nitrogen. This substance exists in soils in the form of organic nitrogen, ammonia, and nitric acid. By the action of a minute "bacterium," present in all soils, the organic nitrogen and ammonia are oxidised, and their nitrogen converted into nitric acid. This operation only takes place in moist soils sufficiently porous to admit air, hence the immense advantages of thorough drainage. It is further necessary to successful nitrification that some base, such as chalk or lime, be present in the soil.

Of the three substances then, which constitute the principal food of plants, two are fixed by the soil, while one is liable to be washed away. Nitric acid is said, by Sir J. B. Lawes, to be in a constant state of movement in the land—at one time washed entirely from the surface by heavy rains, and rising again as evaporation takes place under a hot sun and drying winds. As dark-coloured soils absorb the greatest amount of heat from the sun's rays, the presence of a certain amount of humus derived from leaf-mould and other decaying vegetable matters, is advantageous both to warmth of soil, and to nitrification, and a very small dressing of readily available food added to such soils in the form of nitrate of soda, ammonium salts, guano, rape-cake, or even liquid manure, will be found greatly to promote fertility, and to increase the stimulating power of the soil.

We shall hope to continue the subject on a future occasion. *J. J. Willis.*

New or Noteworthy Plants.

MASSONIA (EUMASSONIA) AMYGDALINA, *Baker, n. sp.**

This is a small Massonia which has lately been imported by Mr. James O'Brien from the Bloksberg, in Cape Colony, and flowered by Sir Charles Strickland. It has the general habit of M. latifolia, but is much dwarfer, and the flowers have a strong scent of almonds. Its nearest ally is M. versicolor. Baker in *Journ. Bot.*, 1876, p. 184.

Bulb small; leaves two, spreading, ovate, acute, glabrous, about 2 inches long by above an inch broad; flowers forming a dense globose subsessile head, about an inch in diameter, white, with a strong smell of almonds; pedicels short; perianth-tube cylindrical, above ¼ inch long; segments lanceolate, reflexing, about two-thirds the length of the tube; filaments erect, slightly connate at the base, ¼ inch long; anthers minute, oblong. *J. G. Baker.*

CHRYSANTHEMUMS IN JAPAN.

On the occasion of the Chrysanthemum show in Berlin, referred to at p. 702 last week, a meeting of the Verein zur Beförderung des Gartenbaues was held, when Professor Wittmack gave a lecture on the history of the Chrysanthemum, whilst a Japanese gentleman, Dr. Hadjime Watanabe gave an account of the Chrysanthemums in Japan. Perhaps some of your readers will be interested in his remarks, of which the following is a summary:—

The Japanese make a difference between *Nogiku*, the wild, single Chrysanthemum, and the *Niwagiku*, or *Kiku*, the cultivated double one. There is yet a third one—*Ryorigiku*, the edible Chrysanthemum, with yellow flowers, which are eaten. Of the *Niwagiku*, there are four groups—*Kiku*, flowering in autumn; *Natsugiku*, flowering in summer; *Kangiku*, the winter Chrysanthemum; and *Fudangiku*, which flowers the whole year through. The wild single Chrysanthemum is planted to give the landscape a natural aspect, and, besides that, it is held in high estimation in art. In propagating by cuttings, the cuttings are put into little balls of loam of from 1 to 1½ inch in diameter, and these balls are planted out in the garden. Dwarf Chrysanthemums are obtained by putting into the balls cuttings bearing small flower-buds. Another mode of propagation is by leaf cuttings. A leaf with a bud in its axil is laid down on sandy loam, and the leaf (not the bud) is covered with some soil; then the whole is placed in a shady place, and the bud forms roots. The most generally employed method of propagation, however, is by division of the roots. In November and December the rootstocks are dug up, and planted anywhere in the garden, being covered with straw. In the spring they are planted in their permanent quarters.

The best soil is a loam, which must be dry, and about 3 feet deep. It is good to transplant the *Kiku* every year. The preparation of the beds is as follows:—A pit is dug out in good soil, to the depth of 3 feet; into this pit is put a layer of half-decayed straw, and upon this the thoroughly prepared soil which was dug out; then the bed is manured with liquid manure, and covered with a mat, another application of liquid manure being given later on, but this time some ash of straw is added; then the bed is let alone, and remains covered with the mat during the whole winter. Early in the next spring the surface of the bed is cleaned with a hoe, and then is allowed to remain exposed to the sun till the end of March, when it is cleaned once more, and the plants are planted. To grow large flowering plants, *Ogiku*, the stem is stopped when still young, so that many side shoots are formed. Of these the strongest

* *Massonia (Eumassonia) amygdalina*, Baker, n. sp.—Foliis ovalis patulis parvis humifusis; floribus parvis albis suaveolentibus odore amygdalino in capitulum densum globosum subsessilem aggregatis; perianthio tubo cylindrat, segmentis lanceolatis reflexis tubo brevioribus; staminibus erectis, tubo vix brevioribus, antheris minutis.

are allowed to remain, all the others being cut out. When the flower-buds appear, the strongest and healthiest shoot is selected to produce a flower, all the other shoots being removed. Any lateral shoots are carefully removed. To grow moderate-sized flowers, *Zugiku*, the plants are much manured, and also stopped early, and induced to produce many side-shoots. When the flower-buds appear, all shoots which do not possess a bud are cut off. Only strong plants are used for this. Dr. Watanabe had seen bushes bearing more than a hundred flowers, and there was once a bush in the Imperial garden with more than three hundred flowers on it. There are two forms of Chrysanthemum plants — *Hokizukuri*, *i.e.*, birch-broom form, and *Ogizukuri*, *i.e.*, fan-form. *Our Berlin Correspondent.*

TOWN GARDENING.

The Manchester Field Naturalists' Society, which, during the last thirty years, has done such good work in diffusing practical knowledge of botanical matters in particular, and of ornithology and other subjects coming under the general appellation of natural history, so far as opportunities were favourable, and which has inspired so many hundreds of people in the districts round about, is now addressing itself energetically to the important subject of town gardening. The leading idea seems to be to encourage the planting of trees and large shrubs wherever there will be a fair prospect of their growing. That there should already be plenty of trees, of one sort or another, in the suburbs of the town—say, in the suburban gardens—of course, is no more than would be expected. Elder, Weeping Elms, Willows, are common enough; so, as representatives of the shrubby section of plants, are Rhododendrons (the old ponticum), Box, Aucuba, and Privet. But it has long been felt that there is scope for a far more extensive employment both of trees and shrubs, and this not merely in the outskirts of the town, but in the open spaces existing in the inner parts; and now we are glad to hear that the excellent Society above-named is going to try what can be done by means of information as to the means and personal effort in regard to the performance. Recently, so we gathered from the local newspapers, the accustomed monthly meeting was devoted to consideration of the subject, and a committee was appointed to take such preliminary steps as might be needful. An address was given by the President of the Society, our old friend and contributor, Mr. Leo Grindon. This was followed up by comments and suggestions on the part of various well-qualified speakers, including Mr. Charles Paul, of the Old Trafford Botanical Gardens, and Mr. John Turner, of the Buile Hill Gardens, Pendleton. The following excellent letter from another well-known local horticulturist of large experience, Mr. Wm. Plant, of the Gardens, Woodheys Hall, Ashton-upon-Mersey, was listened to with equal pleasure by the meeting:—

"I think the subject of town gardening is a most important one, especially at the present time, when most well-meaning people are doing all they can to raise the moral status of the population of large towns—some by local option, others by Sunday Closing; some by one thing, and some another. My humble opinion is that if the people are encouraged to cultivate plants and flowers, although under difficulties, more real good will be accomplished and enjoyment imparted to their dingy homes than by most other means. That there are difficulties in the way I do not deny, but I think these are not so formidable that they cannot be to a great extent overcome. Take, for instance, a number of bulbs. Plants can be grown in any street in Manchester, provided the proper method of treatment be adopted; and Ferns will grow luxuriantly if only provided with a glass case or bell-glass. I was passing along Blackfriars Street, Manchester, a short time ago, and saw the common Ivy growing beautifully in a cottage window, forming a perfect screen or living window blind. I think the encouragement of town gardening could be best accomplished by the formation of a Society whose work should be to collect funds and distribute suitable plants among the people, at the same time giving instructions as to cultivation and holding District Shows. This would create a spirit of competition among the cultivators. The promoters of lads' clubs should also take up this subject, and encourage it amongst their members; for, depend upon it, watching plants and flowers grow instils into the youthful mind far higher thoughts than most other pursuits can do."

In the course of his opening address, Mr. Grindon, referring to what had already been done in Manchester, pointed out, what we fear might quite as truly be said of tree-planting, so-called, in other places, that one reason why they had perished miserably was that they had never been really "planted," but simply stuck in a hole which had been excavated. They should be planted in good soil, and kept clean as far as possible. He suggested that the City Council might, in the absence of fires, usefully allow the use of the fire engine and hose in thoroughly washing the trees in and about Manchester. They must be kept clean, or there is no chance for them.

Enumerating, from a long list in his hand, the eligible and available trees for this purpose, he specified among the very good ones, the common Tulip-tree, one of its grand recommendations being that the leaves are free from any kind of hairiness or stickiness, so that they are washed quite clean by every shower. Many of the company would remember the glorious beauty of the Tulip-tree which once ornamented the Oxford Road, near the Owens College, and might have been there still, save for murder by some new sewerage diggings. Long lists were also laid before the meeting of shrubs that will do well in towns; and of herbaceous plants, of which when he lived in Rumford Street, exactly a mile from the heart of the town, he had no fewer than 200 species, all quite happy. We wish this capital effort every success. Nothing in its way can be worthier of general sympathy and support.

PINE-APPLES IN MADEIRA.

Our illustration on p. 717, taken from a photograph kindly sent us by T. Harcourt Powell, Esq., shows how Pine-apples are grown in Mr. Reed's garden in Madeira. The climate of the island is such, that the plants are grown with the protection merely of a simple and cheap glass structure; and as will be seen in the figure, the roof is much flatter than is the case in this country with forcing-houses, the sun's rays impinging on it in an almost perpendicular manner. The Pine-apples are planted out, and the house contains 6000 plants apparently approaching the fruiting stage.

Profitable Fruit Growing.—The essay to which a prize of 25 guineas was awarded by the judges appointed by the Fruiterers' Company, is now published at 171, Fleet Street. Its author is Mr. John Wright, the assistant editor of the *Journal of Horticulture*, and his essay in the opinion of the adjudicators "combines practical knowledge with literary ability." We shall take an early opportunity of adverting to this useful publication at length, and hence confine ourselves on the present occasion to the mere announcement of its publication.

ORCHID NOTES AND GLEANINGS.

AN ECCENTRIC CATTLEYA GIGAS.

A fine plant of the above Cattleya is just now in full bloom at Rosefield, Sevenoaks; it has ten blooms on three spikes—one of four and two of three each. The plant in question made its growth about the usual time—August—and, indeed, flowered from one growth, but held the other spikes until now. If it had been an imported plant, and had only just completed its growth, we could understand it; but as the plant is an old established one, in vigorous health, its action is unaccountable.

We grow all our C. gigas in baskets—a method of growing them which is admirably adapted to their wants, and the plants flower more freely than when they are grown in pots; we have had as many as eight blooms on a spike of C. g. Sanderiana. *S. Cooke, Rosefield, Sevenoaks.*

Lælia anceps Barkeriana.

A fine specimen of this plant, in which the rich colour of the labellum is more than ordinarily developed, is flowering with Edward Moon, Esq., at Cashio Bridge, Watford. The plant, a moderately sized one, bears nine spikes of three to four flowers each, and is a good example of generous returns for the trouble expended on its culture. The Cattleyas and Lælias look very healthy at this place, and a fine pure white Cattleya Trianæ, and some richly coloured forms are well advanced in bud. Pleione maculata, Odontoglossum Pescatorei, Sophronitis coccinea, Trichopilia tortilis, and many Calanthes and other Orchids, under Mr. Russell's care, display their charms in the new range of houses at Cashio Bridge at the present time.

Cypripedium Godefroyæ hemixanthemum.

This pretty and rare variety is now in flower in the collection of Edward Moon, Esq., at Cashio Bridge, Watford. At first sight it might be taken for a large variety of C. concolor, its flowers being of a clear apricot-yellow colour, spotted profusely with purple. Examination of the flower shows, however, that its structure differs from that of C. concolor in the form of the pouch, and the much broader declinate petals. It is very interesting as supplying one more link connecting C. niveum, C. concolor, C. Godefroyæ, and C. bellatulum, all of which are observed to merge into each other in the various forms of the plants now being largely imported. C. Sedeni candidulum×, C. calurum, C. Leeanum superbum×, many forms of C. insigne, and various other showy Cypripediums, are also in bloom here.

Cattleya Dowiana var. chrysotoxa.

This was discovered in Colombia by one of Messrs. Sander's collectors. The new variety is much superior to C. Dowiana aurea and C. Dowiana, and is characterised, say Messrs. Sander, by producing, as a rule, larger flowers with sepals and petals of a bright, yellow lake; the beautifully fringed lip is remarkable for its rich, golden yellow colour, with obliquely radiating interrupted lines of deep crimson in the throat, passing into a large, dark, crimson-purple, triangular blotch in front, and gradually tapering upwards on each side into a narrow border of the same colour, thus leaving a very large and characteristic golden yellow space on each side between the throat and the margins. It flowers in autumn from the current season's growth.

C. Dowiana and its varieties thrive best in the warm end of the intermediate house, in as light a position as possible, but shaded to prevent scorching. Messrs. Sander counsel the employment of plenty of water in the growing season, but of very little during the period of rest. *Reichenbachia*, t. 80.

Miltonia Russelliana, *Lind.*

This is an old and almost forgotten species of Miltonia, which has recently reappeared in several collections. It was originally described by Lindley as Oncidium Russellianum, and is figured at t. 1830 of

the *Botanical Register*. It was originally sent to Woburn in 1835, with various other plants, and was obtained from a garden in the neighbourhood of Rio de Janeiro. It has recently been sent to Kew, for determination, by Mr. Cowley, gr. to F. G. Tautz, Esq., of Hammersmith, Mr. T. Spencer, Messrs. F. Sander & Co., and the Liverpool Horticultural Co. In three cases it was reported as of Brazilian origin, and in two of them it is said to have appeared among specimens of Miltonia candida, so there is no doubt of its native country. It is a free growing and flowering species, though the colours are not particularly brilliant. The sepals and petals are of a greenish-brown shade, and the lip is marked with violet purple on a lighter ground. The segments are usually narrower than represented in the above-mentioned figure. It was named in honour of the



Fig. 99.—Pine-apple house in Madeira, containing six thousand plants. (see p. 716.)

Duke of Bedford, in whose collection at Woburn it flowered for the first time in European gardens. *R. A. Rolfe.*

TONGUES IN TREES.

(*Continued from p.* 650.)

The expert in French will, of course, recognise in Dandelion *Lion's tooth;* perhaps in Pansy, *Pensée*, thought, from its significance in the language of flowers: There's Pansy, says Ophelia, that's for thoughts; he will hardly detect in Gilliflower *Giroflée*, from caryophyllum, a Clove, the name having been originally given to Clove Pink, but now transferred to the Wallflower; in Tutsan *toute-saine*, all-heal, the oil in its leaves having made it a remedy for wounds; in the last syllable of Woodruffe the French *roue*, wheel, its verticillate leaves being set like a wheel or rowel on the stem. The most curious of this class is Apricot, which etymologists are wont contentedly to refer to the Latin *apricus*, sunny, ripening as it does on sunny walls. It is in fact traceable to the Latin *præcox*, early; the fruit being looked upon by the Romans as an early Peach. The Arabs took the Latin name and twisted it into *Al burquq;* the Spaniards altered its Moorish rendering into *Albaricoque;* the Italians reproduced it as *Albicocco*, the French as *Abricot;* and we get it next in England, singularly enough, as the more correct *Apricock*, for so it was spelt in Shakspeare's time, and finally as Apricot. Only less complicated is Primrose. In Chaucer's time it was the Daisy, and he calls it *primerole* from the old French *primeverol*, the first spring flower; primerole was changed to *primrolles*, that by degrees to prim*rose*, the first Rose of the year; and it was not till the sixteenth century that it attached itself to the familiar flower which now bears its name. Cowslip is stranger still. It was originally *hose-flap*, and belonged to the Mullein, whose great flannelly leaf might well be likened to the flap of a skirt of a woollen under-garment. Later on it was transferred to the Primula of our meadows as the *Cow*slip, and the mistake was stereotyped by the unlucky botanist who, in ignorance of its origin, gave the name of *ox*-lip to its pretty congener, the Primula elatior. The Jerusalem Artichoke is a Sunflower, not an Artichoke; but its tubers resemble the Artichoke in taste. From its Italian name, *girasole*, turn-to-the-sun, says Dr. Prior, came Jerusalem; and by a further quibble the soup flavoured with it is called Palestine soup. Butter-cup was said to give colour to the butter when eaten by the cows; the fact being, that it is a corruption of *bouton-cop*, button-head, and that cows always, if possible, avoid it. Meadowsweet is an alteration from *mead-wort*, honey-wine-plant, a beverage being still extracted from it by cottagers. Bullrush is *pool-rush*, as springing in pools, not in mud. Ozier is named from the *ooze* which suits its growth. Snapdragon is *snout-dragon*; Carnation is *coronation*, its flowers being used as chaplets, just as Campion is *champion*, plucked to crown the successful combatants in a tournament. Pink is the low German *Pinksten*, Pentecost, from it flowering at Whitsuntide, the name being transferred first to the colour of the flower, then to a method of working flowers on muslin called *pinking;* and so to the sword-stab in a duel, pinking or piercing an adversary as the needle pierced the cambric. Apple, retaining its name in the Teutonic, Celtic, Sclavonic, and Lettish tongues, springs from the Sanscrit *Ap*, water, which reappears inverted in the Latin *padus*, *poto*, *pomum*, meaning the water-fruit or juice-fruit. Hip is a form of *jujube*, the Greek and Latin *zizyphus*. Daffodil is a lazy diminution of *Daffadowndilly*, the name used in Spenser's time. It is a combination of Sapharoun, or Saffron, lily, with Affodilly, old English or Asphodel. With the leaning to alliteration common in popular names, the Sapharoun Affodilly became by a mutual compromise Daffadowndilly, then Daffodilly, and so Daffodil. Foxgloves is the Foxes' *glew*, a tintinnabulum or ring of bells hung on an arched support, whence also is derived the modern *glee*. Bedstraw, the Galium, was a plant much used for couches before the invention of mattresses, and a species which, when dried, yields a pleasant scent, is still called *Ladies bedstraw*. Gooseberry is *Cross-berry*, from its triple spine, which frequently takes the form of a cross. So, from its cruciate petals, Cress is possibly *cross;* more probably derived from *crescere*, to grow, in consequence of its rapid increase. Nettle is from *ns*, to spin, indicating that its coarse fibres were used for thread in early times, an idea borne out in Hans Andersen's tale of the wild swans, in which the princess is permitted to transform her brothers by weaving for them shirts of nettles. Shamrock is the Erse *seam rog*, "little trefoil"; the story of its theological use by St. Patrick is of modern date. Irish-

*

men have a superstition that it grows only in Ireland; it is the *Medicago lupulina*, a common English weed. The Snowdrop is named from its resemblance to the large eardrops worn by ladies in paintings of the 16th century. The Laburnum closes its petals at nightfall like a tired labourer. The Hollyhock is *caulihock* [?] *cauli* being the old name for Cabbage, which survives in Cauliflower, Brocoli (corrupted into *Brussels* Sprouts) [?], Colewort, Kohlrabi, Sea-kale; *hock* for the Mallow, to which order the flower belongs. The likeness is perhaps in the Cabbage-like stalk, perhaps, as in Cabbage Rose, a reference to the rich double bloom. London Pride and Herb Paris bear no allusion to the English or French capitals—the first was introduced from the west of Ireland by a horticulturist named *London*: the second means *Herb of a Pair*, of a betrothed couple, because its leaves are set upon the stem like a true lover's knot. Provincial names are sometimes very difficult to decypher. "Virgin Mary's Castle," used in the Midlands for the Lungwort, was discovered after long consideration to be a distortion of *Virginian Cowslip*, the name borne by the plant in many old-fashioned gardens. Even more perplexing was Crazies, a Warwickshire name for Buttercup, explained at length by an old village dame to be an altered form of *Christ's eyes*, which was a mediæval name for Marigold, and through a confusion between Calendula and Caltha came to be transferred to the Ranunculaceæ. Unfortunately, this process of recovery resolves into very matter-of-fact terms the pretty names of lads and lasses contained in modern flower titles. Marygold itself is only *marsh-gold;* Rose Mary means sea spray, *ros marinus*; Nancy pretty is *none so pretty;* sweet Cicely is *seseli*, the Greek name of the plant; Sweet Alison is *Alyssum*, the Latin name; Jonquil is *jonquille*, little rush, from the shape of its rush-like leaves; Sweet William is the French *œillet*, little eye. But the two saddest sacrifices demanded by floral etymology, are the legends of the Narcissus and the Forget-me-not. Narcissus was originally the Hyacinth; connected with the Greek *narkodes*, sluggish, itself a derivative of the Sanscrit *nark*, hell; cited by Sophocles in the famous Athens chorus as crowning the great goddesses of Hades; gathered by Proserpine just before her wedding tour in the same dismal region, because its odour blunts the senses and makes them heavy, sluggish, torpid. Later on it was applied to the Daffodil, whose habit of bending over streams suggested the myth of the lovesick youth on whom Ovid sang and Bacon moralised; whereas, so the old poet Pamphilus remarks, Proserpine was plucking Narcissi in Sicily centuries before Narcissus was born. The Forget-me-not was at first the Germander speed well; its blossoms, falling off and flying away as soon as gathered, gave emblematic force to the name. Under this form it was known in the days of chivalry as the "flower of souvenance," and was embroidered on the collars of the knights, a fact still recalled by its German title *Ehren preis*, prize of honour. Two hundred years ago, we find the name applied to the ground Pine, Ajuga chamæpitys, whose nauseous taste, once realised, can never be forgotten. Finally, it was seized by the river Myosotis, and forthwith sprang up the charming legend, created obviously to suit its latest identification, how that, while two lovers loitered by a lake, the maiden saw and coveted the bright blue flowers; the knight plunged in to get them, but, unable to regain the shore, had yet agility to fling them into his lady's lap, and then with a last devoted look, and the words "forget-me-not," sank below the waves for ever. *W. T.*

(To be continued.)

THE WEATHER IN THE RIVIERA.—A correspondent writing a few days since, says: "We have had one afternoon's rain from November 5 to December 6, cloudless days for a month, and the garden suffering from drought in consequence. Think of it in comparison with your dull weather and fogs." But under the circumstances we prefer not to think of it!

THE CHINESE TULIP TREE.

It is just thirty years ago that the late Dr. Asa Gray published his memorable essay on the close degree of relationship between the floras of Japan and eastern North America respectively, as compared with the relationships between the floras of eastern North America and Europe, and between those of western North America and eastern Asia. I allude now to the vegetation of the temperate zone as distinguished from that of the arctic zone, in which there is a greater continuity of land and a much more uniform flora. The results of Gray's investigations showed that a considerably higher percentage of allied species inhabit Japan and eastern North America than inhabit western North America and Japan, or Europe and Japan. The number of identical species known at that date to be native both of Europe and Japan, was rather greater than the number of identical species in eastern North America and Japan, but these consisted largely of species ranging from western Europe to eastern Asia.

The late Professor Miquel sought to minimise the importance of Dr. Gray's deductions, on the ground that many of the assumed identical species were different; but, whichever way we view it, there is no disputing the fact of the existence of numerous genera in the floras of both eastern North America and eastern Asia (China, and Japan), that are not represented in the present flora of Europe, though there is evidence that some of these genera, at least, formed part of the pre-glacial vegetation of Europe.

Since the appearance of Gray's essay, the flora of Japan has been more exhaustively investigated, and the immense botanical collections made in Central China by Dr. Augustine Henry and others have revealed the existence of many other connecting links between the temperate floras of eastern Asia and eastern North America.

Among these discoveries, none is of greater interest than the Chinese Tulip tree. Almost everybody in England who is fond of trees is familiar with the North American Tulip tree, which has no counterpart of its curiously truncated leaves among the trees hardy in Britain. Indeed this type of foliage is not very closely imitated in any other genus of plants throughout the world; most nearly, perhaps, in some species of Passiflora.

In 1875, Dr. Shearer sent leaves of a Tulip tree from China to Kew, collected on the mountains near Kiukiang, in the province of Kiangsi, in about the latitude of Ningpo, but between five and six degrees westward. Mr. Le Marchant Moore published an account (*Journal of Botany*, 1875, p. 225) of Dr. Shearer's collection of Chinese plants in which these leaves were found, and we learn therefrom that Dr. Shearer regarded it as a native of the region where he collected it.

In 1878, Messrs. Veitch of Chelsea presented to the Kew Herbarium a collection of dried Chinese plants made for them by Mr. Maries. This collection contained one small specimen of the Chinese Tulip tree. It is quite young, neither the leaves nor the flowers being fully developed. Mr. Maries collected it near Kiukiang, from a tree growing near a temple; and in a note accompanying the specimen, he states that it was a fine spreading tree with green flowers, but he regarded it as inferior to the American. With regard to the colour of the flowers, that was probably due to their very young state, and the same may be said concerning their small size. Still the material was insufficient to decide whether it was specifically different from the American, and I accordingly published it as a doubtful variety under the name of Chinense in the *Index Floræ Sinensis* (*Journ. Linn. Soc.*, xxiii., p. 25).

Early in the present year, Dr. Henry sent to Kew copious completely-developed specimens, confirming the view that it is the same species as the American, and not distinguishable, even as a variety. Judging from the specimens, the Chinese Tulip tree presents exactly the same kind of variation as the American; the foliage of young or vigorous trees being much larger and more deeply lobed. Dr. Henry collected specimens on the mountains both north and south of the River Yangtze, in the province of Hupeh. At Paokang he found it forming a spreading shrub, 6 feet high, at an elevation of 6000 feet. At Chienshih he collected flowering specimens from a tree 30 feet high, and leaves from a young tree in the same locality are a foot across in either direction. It bears a Chinese name, signifying goose-foot-leaved Catalpa. The localities where Dr. Henry collected the Tulip tree are between 300 and 400 miles westward of Kiukiang, a region previously all but unknown botanically beyond the banks of the Yangtze river.

It may be interesting to add here the distribution of the Tulip Tree in North America (where it is also known as Yellow Poplar and White Wood), as given by Professor Sargent in his valuable work on the trees of North America. To copy his own words, it ranges from south-western Vermont, through western New England, southward to Northern Florida (latitude 30°), west through New York, Ontario, and Michigan to Lake Michigan, south of latitude 43° 30′, thence south to latitude 31° in the Gulf States to the east of the Mississippi river, through southern Illinois and south-eastern Missouri to Crowley's Ridge, north-eastern Arkansas. It is one of the largest and most valuable trees of the Atlantic forests, sometimes attaining a height of 200 feet, with a trunk 12 or 13 feet in diameter. *W. Botting Hemsley.*

PLANTS, &c., CERTIFICATED

DURING THE HALF-YEAR ENDING DECEMBER 31, 1889,

BY THE ROYAL HORTICULTURAL SOCIETY.

*** *F.C.: First-class Certificate; A.M.: Award of Merit; B.C.: Botanical Certificate.*

Angræcum Chailluanum ...	F. G. Tautz, Aug. 27—F.C.
Anthurium Leodense	Sir T. Lawrence, Oct. 8—F.C.
Begonia A. Blanc	H. Cannell & Sons, Aug 13—A.M.
,, Frank Beadle	H. Cannell & Sons, Sept 24—A.M.
,, Mrs. Litkie	H. Cannell & Sons, Aug. 13—A.M.
,, Mrs. A. Moens	H. Cannell & Sons, Sept. 24—A.M.
,, Mrs. Cayzer	H. Cannell & Sons, Aug. 13 A.M.
Bignonia cherère	F. Ross, July 23—F.C.
Bouvardia Hogarthi fl.-pl ...	H. B. May, Aug. 27—A.M.
,, Mrs. Robert Green ...	H. B. May, July 23—F.C.
Campanula calycanthema (Double and single for strain)	J. Veitch & Sons, July 9—A.M
Capsicum Coral Red	S. Mortimer, July 9—A.M.
Carex variegata	Veitch, October 22—F.C.
Carludovica palmæfolia ...	B. S. Williams, Aug. 27—F.C.
Carnation Mrs. F. Watts ...	T. S. Ware, July 9—A.M.
Catasetum tabulare var. B. S. Williams	251
Cattleya Hardiana, Wrigley's var.	E. J. Wrigley, Oct. 8—A.M.
,, Mendelii Duchess of Marlborough	Whillans, July 9—F.C.
,, Miss Harris	Miss Harris, Sept. 17—F.C.
Ceropegia Sandersoni	F. Ross, Oct. 8—B.C.
Chrysanthemum Annie Stevens	G. Stevens, Sept. 17—A.M.
,, Doric	H. Cannell & Sons, Oct. 8—A.M.
,, Eynesford White ...	H. Cannell & Sons, Oct. 22—A.M.
,, Golden Shah	T. S. Ware, Aug. 13—A.M.
,, Maud Pitcher	G. Stevens, Aug 27—A.M.
,, M. Charles Leboscq ...	H. Cannell & Sons, Oct. 22—A.M.
,, M. Pankoucke	H. Cannell & Sons, Oct. 22—A.M.
,, Nelson	G. Stevens, Oct. 22—A.M.
,, Stanstead Surprise ...	J. Laing & Son, Oct. 22—A.M.
,, Wm. Neville	H. Cannell & Sons, Oct. 22—A.M.
Coleus Cleopatra	Hewitt & Co., Sept. 17—A.M.
Cornus Sibirica Spathi ...	J. Veitch & Sons, July 23—F.C.
Cypripedium orphanum ...	H. Ballantine, Aug. 13—F.C.
,, picturatum	Sir T. Lawrence, Oct. 8—F.C.
Cyrtanthus sanguineus ...	J. Veitch & Sons, Sept. 24—F.C.
Cyrtomium falcatum Fensomi	G. Fensom, July 23—F.C.
Dahlia Alice Emily	Keynes, Williams & Co., Aug. 27—A.M.
,, Centenary	J. T. West, Sept. 17—A.M.
,, C. M. Harvey	T. S. Ware, Aug. 13—A.M.
,, Conquest	G. S. P. Harris, Sept. 17—A.M.
,, Crimson Globe	Keynes, Williams & Co., Aug. 27—A.M.
,, F. L. Temple	T. S. Ware, Aug. 27—A.M.
,, Gulielma	J. Cheal & Sons, Sept. 17—A.M.
,, Henry Patrick	T. S. Ware, Sept. 5—A.M.
,, Hester Dorothea	T. W. Girdlestone, Sept. 17—A.M.
,, James Scobie	J. Cheal & Sons, Aug. 13—A.M

Dahlia John Hickling	Keynes, Williams & Co., Aug. 27—A.M.
,, Marchioness of Bute ...	J. T. West, Aug. 27—A.M.
,, Marmion	C. Turner, Sept. 17—A.M.
,, Panthea	Keynes, Williams & Co., Aug. 27—A.M.
,, Reliance	Keynes, Williams & Co., Aug. 27—A.M.
Dendrobium revolutum ...	Sir T. Lawrence—July 23—B.C.
Dianthus Snowflake (strain) ...	R. Dean, Sept. 17—A.M.
Disperis Fanniniæ	A. H. Smee, Sept. 17—B.C.
Epidendrum sceptrum ...	Sir T. Lawrence, Oct. 22—B.C.
Gladiolus Alsace	J. Veitch & Sons, Aug. 13—A.M.
,, André Chevier	J. Veitch & Sons, Aug. 13—A.M.
,, Duke of Fife	Kelway & Son, Aug. 27—A.M.
,, Hippolyta...	J. S. Whall, Aug. 13—A.M.
,, Nanceianus × President Carnot	V. Lemoine, Aug. 13—F.C.
,, Vulso	Kelway & Son, Aug. 27—A.M.
Hollyhock delicata	Webb & Brand, Aug. 27—A.M.
Iris Kæmpferi White Banner	F. Ross, July 9—F.C.
Lælia autumnalis alba ...	J. Veitch & Sons, Oct. 8—F.C.
,, elegans, Cooke's var. ...	Mr. S. Cooke, Aug. 27—F.C.
,, ,, Duchess	Duke of Marlborough, Aug. 27—F.C.
,, præstans alba	Wm. Bull, Oct. 8—F.C.
Lilium pardalinum var. lutea	J. Veitch & Sons, July 9—F.C.
Lycaste plana var. Cumminsi	A. H. Smee, Oct. 8—A.M.
Masdevallia vespertilio ...	A. H. Smee, Sept. 17—B.C.
Maxillaria fuscata	Sir T. Lawrence, July 23—B.C.
Miltonia vexillaria Leopoldi...	Baron Schroder, Sept. 17—F.C.
Nægelia (Achimenes) pyramidale	H. Cannell & Sons, Aug. 13—A.M.
Nepenthes Curtisii superba ...	J. Veitch & Sons, Aug. 13—F.C.
Odontoglossum grande Tautz's var.	F. G. Tautz, Oct. 22—A.M.
Oncidium crispum var. grandiflora	J. Charlesworth, July 9—F.C.
Papaver nudicaule sulphureum	T. S. Ware, Aug. 27—A.M.
Pelargonium Duke of Fife ...	Hawkins & Bennett, Aug. 13—A.M.
Physosiphon Loddigesii ...	F. G. Tautz, July 9—B.C.
Pteris leptophylla princeps ...	H. B. May, Oct. 22—F.C.
,, serrulata densa	H. B. May, Aug. 27—F.C.
,, ,, plumosa	W. Coleman, July 23—F.C.
,, tremula Smithiana ...	R. Smith & Co., Aug. 13—F.C.
Retinospora filifera aurea ...	J. Veitch & Sons, July 9—F.C.
Rhodanthe alba	J. Veitch & Sons, July 9—F.C.
,, maculata fl.-pl.	J. Veitch & Sons, July 9—F.C.
Rhododendron Aspasia ...	J. Veitch & Sons, Oct. 8—A.M.
,, Duchess of Fife	J. Veitch & Sons, Aug. 13—A.M.
,, Ophelia	J. Veitch & Sons, Aug. 27—A.M.
,, Virgil	J. Veitch & Sons, Sept. 24—A.M.
Sarracenia decora	B. S. Williams, Aug. 27—F.C.
Satyrium carneum var. roseum	T. S. Ware, Aug. 27—F.C.
Sobralia xantholeuca var. alba	J. Veitch & Sons, July 23—F.C.
S. iræa gigantea	Paul & Son, July 23—F.C.
Sweet Peas (Strain)	H. Eckford, July 23—A.M.
,, William (Strain) ...	J. Walker, July 9—A.M.
Taxus adpressa variegata ...	Fisher Son & Sibray, Aug. 27—F.C.
Tritonia securigera	J. O'Brien, Aug. 13—B.C.
Vanda Kimballiana	Sir T. Lawrence, Aug. 13—F.C.; H. Low & Co., Aug. 13—F.C.
Watsonia rosea	T. S. Ware, Aug. 27—F.C.
,, iridifolia O'Brieni ...	J. O'Brien, Sept. 17—F.C.

FRUITS AND VEGETABLES.

Apple Kane's Seedling ...	G. Dyke, Oct. 8—A.M.
Grape Apley Towers Seedling	Myles, Oct. 22—A.M.
,, Diamant Traube... ...	W. Roupell, Sept. 17—F.C.
Lettuce Grosse Paresseuse ...	J. Veitch & Son, July 9—F.C.
Melon Basing Park	W. Smythe, Aug. 13—F.C.
,, Countess	W. Goodacre, July 9—F.C.
Tomato Conference	Royal Horticultural Society, Aug. 13—F.C.
Pea Consummate	Eckford, July 9—F.C.
Cucumber Allan's Favourite .	Allan, July 23—A.M.

A LIBRARY FOR GARDENERS.*

NOT the least important of the numerous good causes inaugurated by J. C. Loudon, for the elevation of English gardeners, must be included the tireless and successful energy with which he advocated the formation of garden libraries. The idea does not appear to have occurred to anyone before Loudon ventilated it in the *Gardeners' Magazine* during 1827, for the very simple reason that gardeners were at that time usually ranked—and not unfairly so—with farm and other illiterate labourers. As a general rule, they had not the inclination for intellectual diversion, and they certainly had neither the means nor the opportunities of carrying it into effect. Books were very expensive, and wages very low. The gardener who lived in the neighbourhood of large towns would occasionally "pick up" a cheap stray volume of a *Herbal* or a few odd numbers of Philip Miller's *Dictionary*, but his *confrères* in the more remote parts of the country were minus even such an opportunity. Bereft of a systematic process of development, the most powerful brain will remain latent; and it is the force of circumstances which have in the past retarded the progress of horticulture in its various phases. Happily the underpaid gardener cannot now complain of the absence of cheap literature; indeed, if uttered during the past thirty or forty years' such a complaint would be a manifest absurdity. If anything, the supply has been rather overdone.

Our wish, however, just now is, not to write the history of the cheap movement in the literature of gardening and its allied sciences, but to call the attention of our readers to a series of books which appeal quite as strongly to gardeners as to that somewhat undetermined genus, the General Reader. The "Minerva Library," which is edited by Mr. G. T. Bettany, and published by Ward, Lock & Co., is unquestionably one of the most useful, and certainly the cheapest of the sort which has yet appeared. Instead of starting the series with the *Pilgrim's Progress*, or *Robinson Crusoe*—each very good in its way—which every publisher of a series of books regards as a religious duty to include, Mr. Bettany has given his readers an edition of Darwin's *Journal of a Voyage Round the World*. A more judicious selection could not have been made, for we have here the genesis, so to speak, of Darwinism. That the book has proved a distinct success may be gathered from the fact that six editions, each of several thousand copies, have been disposed of, although it has scarcely been issued more than six months. But as we noticed Mr. Murray's cheap reprint a few weeks ago, we need not now make any further reference to this book.

As variety is, after quality, the most important element in the success of a series of books, so we think that the *Ingoldsby Legends*, Borrow's *Bible in Spain*, and Emerson's Prose Works, are sufficiently various to satisfy the most extreme tastes. The fifth volume, which is of special interest to our readers, is entitled *South Africa*, and is the narrative of an explorer in tropical South Africa. It is the work of Mr. Francis Galton, F.R.S., who visited Damaraland in 1851, and who has since become so well known among the leading scientific men of the day. To the present generation Mr. Galton is scarcely known as an explorer, but a perusal of his entertaining book will be quite sufficient to prove that his experiences are those of an intrepid and courageous discoverer. Apart from its interest as a book of travels, it appears now at a peculiarly opportune moment, for a large portion of the lands of which it treats, have recently been included under a German protectorate, and Walfisch Bay is now a colony of Great Britain. We have not space to indicate the author's innumerable trials, difficulties, adventures, and discoveries. The lovers of Nature and of novelty will read the new edition with pleasure, and, what is equally important, with advantage; it is something more than a reprint, for it has been carefully revised by Mr. Galton himself, whilst the new map and appendix, the author's portrait, and the editor's brief but excellent introduction, combine to form one of the cheapest and most entertaining books of travel ever published. Mr. Galton left England on April 5, 1850, and returned to this country early in 1852, without having lost any one of his many men, "either through violence or through sickness, in the long and harassing journey."

Following Mr. Galton's book, which is now in its second edition, Mr. Bettany gives us *The Betrothed Lovers* (*I Promessi Sposi*) of Alessandro Manzoni, which has been termed the greatest novel ever written, and of which Goethe has spoken in eulogistic terms. The next volume in the Minerva series is Bayard Taylor's admirable translation of Goethe's *Faust*; and now comes another copyright work of travels by a scientific observer—Dr. A. R. Wallace's *Narrative of Travels on the Amazon and Rio Negro*, which first appeared in the autumn of 1853, and was the book of the season. It is not merely a book of travels and adventure, for it contains, in addition to an account of the native tribes of the regions which Dr. Wallace explored, some highly important observations on the climate, geology, and natural history of the Amazon Valley. The great charm of Dr. Wallace's book—the same may also be said of Mr. Galton's—is the natural manner in which his adventures and discoveries are related, for the occasional globe-trotter is nothing if not fine in his ideas and flowery in his expressions. It would be an impertinence to remind readers of the *Gardeners Chronicle* that Dr. Wallace's claims to be regarded as the co-discoverer of Darwinism are beyond question. But the extent to which his assemblage of facts, derived from observations on this journey, form "a basis for induction as to causes and modes of transformation of species," may be clearly seen in this highly interesting book, which, we venture to predict, will have as great a popularity as Darwin's *Journal of a Voyage Round the World*

We have nothing but praise for the Minerva Library, and we do not know which to admire most: the editor's judgment, or the publisher's enterprise. The books are well printed, tastefully bound, and ridiculously cheap at 2*s.* per volume. They deserve to be in every gardener's library, and employers could not do better than see that their bothies are furnished with this series.

* "*The Minerva Library of Famous Books*," edited by G. T. Bettany, M.A., B.Sc., F.L.S. (Ward & Lock.)

AN APRICOT SHED AT BIRDSALL, YORK.

WHEN visiting the extensive and well managed gardens of Birdsall during the past autumn, amongst other things of interest noticed was what is termed by Mr. Wadds, the gardener, an "Apricot shed." Such a structure is but little known, and some account of it may interest the readers of these pages.

The building has what is termed a three-quarter spanned roof, and is 100 feet long by 12 feet in width. There are ventilators all along the apex of the roof, and the short side of the span rests on a wall, and faces east, consequently the house has a western aspect. The pan on which these roof-sashes rest is supported by T-iron standards, placed some 12 feet apart, and about 4 feet in height. The front is quite open, hence the name "shed." The trees, worked on short stems, are planted against the iron standards that support the front pan, and are trained to a trellis which stands at 16 inches from the glass in the same way that Peach trees are trained in forcing-houses. The trees have been planted for 15 years, and have part covered the whole of the roof area with bearing wood many years ago; the general treatment afforded the trees being the same as is identical with that adopted for wall trees, and such crops of Apricots as were in this structure I have never seen elsewhere, the trees being literally covered with fruit. This excessive quantity of small fruit was necessary, Mr. Wadds told me, as it was mostly used as a preserve. Several stones' weight had already been gathered before I saw the crop. At one end of the shed was a tree of Greengage and Coe's Golden Drop Plums, which were also as heavy-cropped as the Apricots, and much better ripened than plums generally in the north, when grown on other than walls having a southern aspect.

I was told that there had not been a single failure of crop since the shed was erected, although in one or two years following its erection very ungenial summers were experienced, and the crops were not heavy. I learned that there was little if any mutilation of limbs so common in the Apricot out-of-doors. When planting the trees, it was thought necessary to regulate the roots so that they should grow outwards, a border some 10 feet wide running the whole length of the front. Mr. Wadds told me this was of great importance, as he never has cause to water the inside border, so to speak; consequently, there are but few roots in it. He mentioned an instance of a gentleman who had a similar structure erected in his garden, and thought to improve on the Birdsall method, by having trees worked on longer stems,

and planted in the centre of the house, although the treatment was similar to what was given at Birdsall in other respects, the crop of fruit was wanting. I came away from the gardens with the impression that the Apricot "shed" at Birdsall was well worthy of being copied in scores of gardens, especially those in the midland and northern counties.

Most gardeners will see the usefulness of such a structure during the winter and early spring months, viz., for storing pot Strawberries, plunging pot-Roses and all other forcing-plants, &c. Mr. Wadds hangs all his Onion "ropes" on the back wall, and finds them to keep admirably. In spring he puts his large stock of Chrysanthemums in to harden them off, merely hanging a fourfold herring-net along the open front if the weather be ungenial.

I need add that there are no means of heating the shed, and that it was built by Messrs. Foster & Pearson, Beeston, Nottingham, who also erected the whole of the extensive range of glasshouses. *H. J. Clayton, Grimston, Tadcaster.*

Foreign Correspondence.

SPECIES OF SALVIA AT LA MORTOLA.

After the mention of the decorative species of Salvia in your issue of December 7th, it may be of interest to hear of some of the more attractive members of the genus now flowering in the open air in Mr. Hanbury's garden, La Mortola. Probably the collection of these, numbering over sixty species, is one of the best in Europe, and it will be understood how valuable they are from a horticultural point of view when we assert that their scarlet, crimson and purple masses of flower form quite *the* feature of the garden at this least interesting time of year.

For the last eight weeks S. Bethelli, so rightly eulogised by your correspondent, has produced its bright racemes, abundantly crowded with flowers; whilst its type, S. involucrata, appears only about to flower. But the most showy of all the species here, indeed, we believe the most showy Salvia known, is S. fruticosa (S. frutescens). It surpasses all others in the abundance of its flowers and in brilliancy of scarlet colour, just as much as it takes the lead in vigour and in its general proportions. It is the climax for visitors to the garden at present, and its flaming trusses, like giant masses of bloom of the much-cherished S. splendens, may be seen many a hundred yards away as glowing patches of colour. It is unfortunate that there is no authority given for the name in Mr. Hanbury's excellent catalogue (which usually supplies authority and reference for the plants mentioned), so that it is impossible to tell whether this masterpiece of the genus is known in English greenhouses by any synonym.

Other species with scarlet or crimson flowers are S. boliviana (S. rubescens), S. leonuroides, S. coccinea, S. pulchella, S. confertiflora, S. Greggii, S. gesneræflora, the last-named of which is only on the point of flowering.

S. boliviana, though much smaller in every way than S. fruticosa, possessing flowers with much narrower corollas, without the inflated scarlet calyx, which is so conspicuous in that species and in S. splendens, is giving evidence of its great worth, as more flowers open day by day. There is about it, a softness from the velvety red-brown calyces and flower stalks, which sets off to advantage the rich crimson of the corolla. The colour is of that kind which appears veritably to glow when seen against a dark background.

S. leonuroides has its large flowers hidden away under a leafy cover of large terminal bracts. S. coccinea and S. pulchella have smaller flowers, but they are very bright and abundantly produced. The flowers of S. confertiflora, though individually very small, are so grouped together in close verticals, upon a much elongated spike-like raceme, that the whole effect of the blended scarlet and velvety rich brown colour of the calyx is excellent. Moreover, the tall racemes are produced in abundance. S. gesneræflora only shows a few flowers as yet, but they are full of promise, the dimensions of its shrub appear second only to those of S. fruticosa.

With purple or bluish colours, there are about as many species now in flower as with scarlet. Of these S. mexicana takes the lead with its coarse, shrubby proportions, and the very striking appearance of its long and loose racemes of large purple flowers. In this species there is seen one of those effective contrasts between calyx and corolla, the former being of a pale yellow colour. But S. leucantha is, of all, the most remarkable in this particular, for its somewhat transitory and small white corolla is amply compensated for by its substantial purple calyx, which is like a ball of coloured wool, so covered is it with purple hairs. The flowers are densely crowded together in whorls in a woolly, elongated raceme, similar to that of S. confertiflora, and when several of these racemes are seen in one plant the mass of colour is very conspicuous. The habit of this species is somewhat dwarf, the leaves being like those of a lanceolate-leaved Stachys. Another species which has acclimatised itself very readily is S. semiatrata; the racemes are short, and the flowers only of medium size, but the branching habit, and the frequency with which the flowers are produced give a very gay appearance to the plant; on account of its small leaves, and its readiness to branch, it may be cut into compact hedge-like bushes where so desired.

Dark as are the flowers of S. semiatrata, they are surpassed by the black violet ones of S. discolor (better named S. nigrescens), a peculiar and low spreading shrub of but slightly decorative appearance. The two last-named species are characterised also by an abundant viscid secretion upon their peduncles.

Other species with flowers which may almost be described as blue, are S. cacaliæfolia, S. patens, a spreading, leathery-leaved species; and S. dulcis, with flowers of an exquisite porcelain-blue, not unlike those of the famous Belladonna Delphinium. These, however, have almost finished flowering. The name, S. dulcis, is not supported by any author's name in the catalogue, but it is one of several species sent to Mr. Hanbury, from Kew, two or three years ago. Its spreading habit and linear leaves are much unlike the type to which the greater number of the species conform.

S. paniculata, with its very loose inflorescence, and S. farinacea, another very dwarf and narrow leaved species, may be noticed because of their almost parti-coloured blue and white flowers. Much might be written upon the various evident series which may be distinguished among these decorative species, in so full a collection as Mr. Hanbury has gathered together. Forms the most remote, either in habit, leaves, or inflorescences, are seen to be linked on to their fellow-species by most distinct gradations; but such features of interest need to be seen to be well appreciated, and those who become acquainted with only a few of the more distinct kinds may wonder because of the divergence often exhibited. This divergence is doubtless to be explained by the vast variety of situations in which these species thrive in the warmer regions of the globe.

The Andean species of Calceolaria are perhaps the example best known to the author of a remarkable divergence of external character linked to a complete resemblance among the parts of the flower. Some members of this genus resemble small creeping species of Anagallis, others a coarse Scrophularia; some, again, vie, for luxuriance of foliage, with any Verbascum, whilst others are for all the world like some stiff linear-leaved Erica!

As to the distribution of the more decorative members of this very widespread and large genus, it may be noticed that Mexico is the home of the most showy, a few of those herein mentioned being common to the Andes, one only (S. paniculata) being from southern Africa, or the Old World. *Philip Sewell.*

ORANGES AND LEMONS.

Those who are interested in the development of the resources of India are making great efforts, by means of selection, budding, and grafting of good sorts, to promote the cultivation of the various kinds of Orange in that country. With the severe competition of Southern Europe, California, Florida, the West Indies, the Azores, and New South Wales, it is doubtful whether any great results can be looked for in the way of exportation, but still the local demand necessitates ample supply.

Mr. Woodrow, in his excellent *Hints on Gardening in India*, tells us that the Orange succeeds admirably in the dry parts of India, such as the Deccan, Mysore, and Central India, but that it does not thrive so well in low-lying moist districts. In making a plantation, the soil generally requires the addition of manure, such as street sweepings, or cow-dung, laid on the surface, and then dug 18 inches deep. A crop of Potatos or Cabbages should be first taken off the ground, and the Orange trees then planted in straight lines, 10 feet apart, among the other crops, and carefully watched during the first year to see that shoots do not come from below the graft; should any do so, they must be rubbed off. The ground should be carefully worked with a variety of crops needing irrigation during the first five years, while the Orange trees are gradually occupying the soil. When the trees are established, watering is diminished from March to May, when the soil is removed from around the roots, cow-dung being placed 3 inches deep in the trench, and covered up with fresh soil. The leaves fall off, and by the end of June the trees are covered with fresh leaves and flowers which ripen into fruit in the following February. A second flowering takes place in February and March, the fruit from which ripens in December; but it is not advisable to let the same tree carry both crops, because it would interfere with the rest of the trees in the hot season. In the accompanying illustration (fig. 100) from a photograph of Mr. Woodrow's, No. 1 represents the Shaddock, the largest of the Orange-like fruits; No. 2 is the Maloongee, with thick, warted skin; No. 5 is the Mozambique Orange; No. 6 is the Kowla Orange; No. 8 is the variety known as Khaguzee Limboo; No. 9 is the loose-skinned Cintra or Suntra Orange. The other varieties though numbered, are not named in Mr. Woodrow's book.

Dr. Bonavia's promised monagraph on the subject of the cultivated varieties of Orange is looked for with interest both by growers and by botanists.

Nursery Notes.

MESSRS. C. LEE AND SONS, EALING.

The circumstances of many gardens are such, that the early purchase of fruit trees is not always possible or even desirable, and I will but notice one of these. A newly laid out garden or orchard, in which all the rough work of trenching, draining, and general laying out has been done late in the year. It would be most undesirable to plant at once in the crude, unweathered state of the soil, therefore the planting is advantageously deferred until the late winter arrives. The frost having ameliorated the state of the soil, and more especially where the gardener has wisely opened out holes for the trees as soon as trenching was finished. In circumstances like these, the visit to the fruit nursery is often put off till late in the season, although the better course would have been to buy early in the autumn, and heel the trees in the soil till planting might with advantage be undertaken, and it is with an eye to the former probability that the present note is penned.

In looking over Messrs. Lee's Ealing branch-nursery at about the beginning of the month of September of the present year, we noted fine pyramid Apples, carrying good crops on the free stock, of sorts such as Lord Suffield, Keswick Codlin, Potts'

Seedling, Ecklinville Seedling, Stirling Castle, Lane's Prince Albert, Monk's Codlin, New Hawthornden, and many others.

Many varieties of the Apple, when worked on the Paradise stock, bear much too freely, making too little growth as a consequence, and those named are found to give the best results on the Crab. Of sorts that do well on the former are Ribston Pippin, Cox's Orange Pippin, Red Astrachan, Adams' Pearmain, Cockle's Pippin, Peasgood's Nonsuch [a soft, poor thing], Bramley's Seedling, King of the Pippins, and Alfriston.

Nearly all the best dessert kinds, when worked on this stock, are early and constant bearers.

Good quarters of Pears were noted, which were grafted on the Quince and also on the Pear stock, but only a few were in bearing. Such Pears as Souvenir du Congrès and Pitmaston Duchess are in increasing demand. Emile d'Heyst, Marie Benoist, and Nouvelle Fulvie are also making their way in the estimation of the public, being good and late fruits.

As a sign of the times, it may with satisfaction be noted that herbaceous plants are now largely grown here, and a selection of the best species of plants formed a conspicuous feature in the front of the nursery.

The past season brought much aphis, necessitating much extra labour to keep the trees, &c., clean. Mr. Cannon, after trying many remedies, finds that the only effectual way is to tackle it on its first appearance, and in that way prevent the spread of the pest. *J. B.*

May's, Teddington.

In all nurseries there exists a certain individuality in regard to what is grown; and the nurseries of Mr. George May, of Teddington, show this peculiarity like any other, for the very spot upon which this great area of glass exists was, some ten years ago, a spent gravel-pit, famous at one time for the enormous yield of good materials, and just about the last spot that any nurseryman would choose as the site of a nursery in which to grow large houses are set apart, and every plant is the picture of vigorous health; while the hundreds of flower-spikes bore testimony to the suitable method of culture pursued.

Calla æthiopica is also grown in quantity, and Tuberoses are represented by some 30,000 pots, grown principally for early or late supply, the latest batches of bulbs getting their final repotting in May and June, and being grown out of doors, sashes being placed over them when cold weather at night is expected. These last potted bulbs produce their flowers in October, November, and later. Tea Roses are also grown in quantity for cut blooms, the leading and most useful varieties for this purpose being alone cultivated. Gardenias are in large demand, both as old plants several feet high, and young plants in 6 inch pots; these latter were very promising, and apparently free from mealy bug. Stephanotis floribunda is grown extensively and well, judging by the great number of its trusses showing on the long shoots.

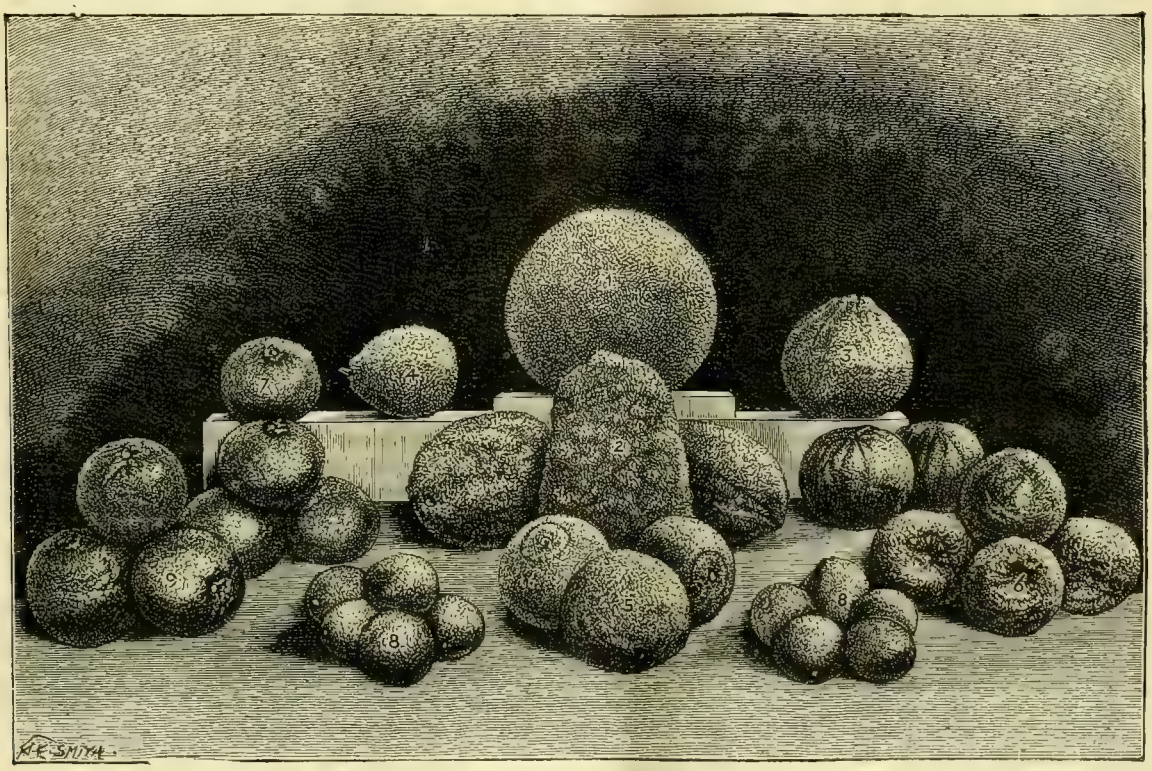


Fig. 100.—Group of the orange and citron tribe at Poona in November. (see p. 720.)

Plums were found largely grown in all the standard varieties, and a nice lot of Pyramids of Plums were in bearing—the varieties being Early Prolific, the Czar, Pond's Seedling, the Sultan, Victoria, and others. It cannot be too often stated that Rivers' Czar is a fruit which should be largely planted, as it comes into use just when the Early Prolific is over, and the tree is very prolific.

Cherries were remarked in great numbers, especially Morellos trained for positions on walls and as bushes. A fine stock of these and other sorts were to be seen here.

Standard and dwarf trained Peaches and Nectarines form a remarkable feature at this nursery, and special attention appears to be paid to their cultivation and training. The budding of these kinds had been very successful, and a fine take was evident for next year's growth; and, taken altogether, the stock of trees, young and old, looked well.

Amongst miscellaneous subjects were noted a nice lot of Roses—a specialty here, the soil being well suited for their cultivation.

flowers for market; for, to say the least, it must have entailed a great amount of labour to produce anything like a comparatively level surface before the erection of plant-houses could be commenced.

One of the most important plants grown here is Adiantum capillus-veneris, and which may be counted by tens of thousands; one lean-to, nearly 400 feet long, was devoted entirely to it, and smaller houses, to the number of twenty, were filled with this useful plant. From the first, Mr. May has made the growing of this Fern a leading feature, and those who have but little conception of the large demand for it might suppose that there was here a sufficient number grown to supply all possible demands; but, in reality, there are scores of other growers who produce it in enormous quantities. The plants are either divided, or "shifted on" annually, till the final shift is made into a specially designed pot, which is 8 inches in diameter at top, and 7½ at bottom, while it is 9 inches deep, thus affording space for much soil.

Another item of considerable importance is the Eucharis amazonica, to the culture of which two

Out of doors all available ground was covered with winter blooming Carnations, Alegatière, La Belle, and Miss Joliffe being the varieties chiefly grown. The plants were planted in 32's, and remarkable for free growth and vigour. These Carnations are kept growing briskly, and potted as they require it, the final shift to 8-inch pots being afforded them in June. A new nursery has been established opposite the old one, and already a dozen plant-houses stand in it.

Apart from those plants named above, bulbs and other plants are forced in quantity, in the cultivation of which Mr. May is assisted by an able and energetic foreman. There is one thing deserving of mention, without which this notice would be incomplete, this is the arrangements for packing which are here to be seen, and which are by far the most complete known to the writer. The packing is done in an irregular building of about 60 feet in length and some 50 feet in breadth, the front or southern portion of which is occupied as a van shed, a substantial wall about 18 feet high separating it from

the north portion, which constitutes the packing shed, the roof of which descends to about 7 feet high from the ground in the front. Against the intersecting wall are cupboards for keeping flowers when cut, and above this are ranged cut flower boxes in enormous numbers. The roof is match-boarded and slated; this, coupled with its position, and the protection it receives from the opposite side of the building, has the effect of keeping it remarkably cool even in the warmest weather. The north front has glazed sashes which may be opened, and a bench runs along its entire length. Gas and water are laid on, and at the western end are slate tanks, in which the Maidenhair fern is placed as soon as it is bunched, and where it remains till it is packed. The structure is heated, and has a concreted floor, adding much thereby to the comfort of the workers—in fact it is a model. *J.*

ORANGE CULTURE IN FLORIDA.

[We have had of late so many inquiries upon this subject, that we are glad to be able to print the following letter. The majority of those who consult us have no knowledge at all of the subject, but still expect to succeed in the business! Ed.]

People from the Northern States often ask if a frost may not some time come and destroy the business of Orange culture. Certainly, it may, and so may the waters of the Atlantic Ocean some day rise and sweep New England from the face of the earth. Danger to life and property all over the world is possible at any time from scourge, pestilence, or the ravages of the elements. The frost danger to tropical and semi-tropical fruits, however, is on a par with the frost danger to vegetables and fruit in the North, only if anything, much less so. No one in the North would hesitate in the buying of a farm, or in planting fruit trees adapted to that climate through fear that some very severe winter might destroy the next year's crop. There is the remote contingency that a severe frost might damage the crop once or twice in a century, but how many times in the last twenty-five years have the Wheat crops and the Apple and Peach crops in the North been seriously damaged? Everything upon the face of the earth has its enemy, but on this account we do not hear of the business of raising Wheat and fruit in the North being ruined or abandoned. There is no doubt of the fact that Orange culture here, in the Orange belt of Florida, is one of the substantial industries of the world, and those who engage in it soonest will take the lead and hold it, as the older the trees when properly cared for, the greater is their bearing capacity. Thus wrote Carl Webber in *The Eden of the South*, and although written six years ago, the remarks given above still apply. And notwithstanding the fact that thousands of plantations of Oranges have been made in Florida, there is still room for more, and a profitable income can be realised from Orange growing in Florida, provided the trees are carefully grown and fertilised. Many owners of Orange groves are totally ignorant of the culture of the Orange, consequently various methods of procedure are pursued by them. One cultivator hoes the ground between the trees to keep down weeds. Another sows Cow Peas (a kind of dwarf Bean used as fodder) to cover and shade the ground between the trees. Others mulch with straw or long grass for a distance of from 6 to 10 feet from the stem of the tree, while others allow the branches to grow low in order to shade the trunk of the individual trees from the sun, and cultivate close to the trees with the hoes. Others trim off the branches so that a horse-hoe can pass under the lowest branches, and thus allow the horse-hoe to be run very near the tree. Some use commercial fertilisers. Others use none, but dig out muck from the swampy parts of the woods, and dig this into the Orange groves. As this muck is a deposit of decayed vegetation which has been forming for ages, it is sometimes valuable as a manure, that is, when a good sample is obtained. There are millions of tons of this manure in the low-lying swampy parts of the woods, and after being made into a compost for a few months, it is found very useful for improving the sandy soils of which much of Florida consists, which are short of humus. The Orange, however it may be treated or illtreated, must feel pretty much at home, for it flourishes so long as it gets a little something besides the ordinary soil.

Budded trees are mostly planted now, consequently a certain approved variety of Orange can be depended upon from every tree, and not a number of varieties as when seedling Oranges are planted. In the latter case Oranges are of all sorts and sizes, and some have thick rinds, others thin; some are affected with the rust mite, while others are clear and bright. It is now the rule to plant budded trees, so that fruit of one variety, texture, &c., can be secured. Budded trees, however, are not so hardy as seedlings, the latter passing through the slight frosts of Florida winters almost uninjured, a slight scorching of the latest and most tender growths being the only damage sustained; but should an unusual frost visit that favoured country, as was the case in 1885—6, budded trees are liable to be greatly damaged by the freezing of all the young wood. The frost of 1885—6, however, did not kill many old or well established trees outright, and every grove affected by the frost of that winter has recovered, and the trees are now in luxuriant health, growing vigorously and bearing good crops. "I am not sure," writes a Florida Grape, Orange, and Strawberry grower, "whether the said frost was altogether a matter to be deplored, for a vast amount of insect life in the way of parasites must have been destroyed at the same time. Had not this been the case, we Florida Orange growers might now have had a serious task on our hands, fighting mealy-bug, rust-mite, red-spider, and other troublesome pests, which were most likely stamped out by that keen frost."

Unless some very decided and unlikely change in the climate of Florida occurs to cause the temperature to become much lower than it is at present, Orange culture in Florida can be counted upon as a permanent and remunerative industry. All the tropical and semi-tropical parts of the world are being ransacked for varieties of the Orange as well as other fruits likely to succeed in Florida; and it is very probable, writes the same correspondent, that in the course of a few years a greater variety of tropical and semi-tropical fruits will be found growing in Florida than in any other piece of land of its size on the face of the globe.

The Orange trees are mostly planted 24 feet apart each way, and are cultivated in the way each cultivator considers best. Some groves (like English gardens and farms) are in better condition than others; but it often happens that two groves in different sections of the State do not succeed alike, although planted, cultivated, and manured alike, as the soil varies so much in a very short distance; and an Orange grower, like other growers of fruit and grain, finds his first task is to ascertain in what particular variety of plant food his land is deficient, and then to regulate his fertilisers accordingly.

From seedling trees twelve to fifteen years old now growing, writes my friend, in the grove in which I write, 1500 Oranges have been obtained from one tree for the year's crop. Budded trees bear at two years from the time of budding, but it is unwise to allow them to do so. And if Orange growers will only practise a little self-denial, and pick off all fruit as soon as formed for two or three years, with the sole object of first making a fine well-shaped tree, they would find that their acts of self-denial will be handsomely repaid in a grove of luxuriant trees, prepared to bear a very much greater quantity of fruit at the end of four years than they otherwise would have done had they been allowed to bear a few Oranges each year as soon as the trees commenced to bloom. It is no unusual thing in Florida to see an Orange tree one year old from the bud showing clusters of flowers, and in many cases they are allowed to bear an Orange or two "just to see what they will be," and each year the trees are more and more stunted in growth by this proceeding.

Fine large trees are produced at six years from the time of budding. Some trees at this age attain to a height of 12 feet, and as much through the crown, and bear heavy crops of fruit. But a grove of budded trees is a source of anxiety to the owner, since the keen frosts referred to above, and a constant run to the thermometer, is kept up during the duration of cold spell in winter.

The frosts usually are three in number during the winter, namely, November, December, and January—one each month, and usually lasting three or four nights; but any one not used to a Florida winter, my esteemed correspondent avers, would say at noon on a day during the prevalence of the "cool spell," "that no such thing as a frost could come here." However, it is the north-west wind which is responsible for any damage done to the trees, the freezing air being brought down by it from the north-western States; and if the wind continue long in that quarter in winter, it is sure to affect the trees much or little. The heat of the sun during this time completely neutralises the effect of the cold, the day being somewhat like a warm day in early autumn in England; but when the sun sets, then the air rapidly becomes cooler, and about 9 or 10 o'clock, P.M., the frosts usually occur.

As to profits of Orange growing there is great diversity of opinion. If the business is conducted as it is conducted by a good many men owning small and moderate-sized groves, there are none. Orange growers receive by mail all the year round circulars and printed post-cards, as well as business cards in envelopes, containing requests for shipments of fruit from commission merchants in all the Northern large cities, and it has been recently found out that some of these so-called commission men are mere kerbstone brokers, whose furniture and office fixtures are not worth half-a-crown. Of course substantial respectable business men doing a large trade with retail fruit stores as well as street vendors, also communicate in the manner indicated with the growers. But many a hard-working cultivator who has bought or budded his trees, and grown them on for five or six years, working early and late, watching his trees with the greatest anxiety and interest, and delighted to see them covered with bloom, and still more so to see them perfect a good crop of fine fruit, and who sorts and packs and ships it to some of these commission men, who have so mysteriously procured his Christian and surname and address with such exactness, finds himself, as the Yankees say, "badly left." Perhaps he gets a post-card saying the fruit was received in bad condition, and was sold to pay freight; or perhaps he gets 1*s.* per box, containing from 198 to 250 Oranges, with the advice to be sure and send his Oranges all the way by rail in future, remarking that those received "heated on steamer," having been put on steamer at Savanah for New York. Honest commission merchants—and there are such—do not do this kind of unprincipled work, they usually return 7*s.* 6*d.* per box clear, after all expenses are paid.

Some Oranges of course sell better, and fetch better net prices than others, notably the Tangierines, but any Orange grower in Florida who gets an average of 7*s.* 6*d.* to 8*s.* per box clear is perfectly satisfied, and there is money in the business at these prices. An Orange grower who anticipates shipping a crop of Oranges should make enquiries months previously respecting the commission house he purposes to ship his fruit to; and it is much the best policy to make exhaustive inquiries at first to try and find a good reliable man, and having found such a man, to stick to him altogether, even if first returns are not so good as might be expected.

Oranges require careful picking, sorting, and packing. A careless man in packing the fruit allows the long thorns on the tree to penetrate the small sack usually worn over the shoulder and hanging under the opposite shoulder; and when this occurs, and is not detected in packing, the Oranges so pricked usually rot; and if the box or boxes containing these and other Oranges happens to be in the commission man's store for some time, the previously sound ones soon become affected by reason of their contact with the rotten fruit. Sufficient care is not generally exercised in this respect.

Orange growers are now agitating for two things—one is to ship fruit to the Florida Fruit Exchange at Jacksonville, which is endeavouring to ship fruit, and place it in distant markets, with a view to preventing a glut, and ultimately this Florida Fruit Exchange aims at establishing an Orange Auction

at Jacksonville, so that the fruit can be sold there, and paid for, without further risk by the growers. The hard nut to crack is how to get Northern fruit merchants to attend the sales. The other question agitated is to sell the fruit on the trees when ripe. If the Orange auction with the Northern buyers on the spot can be accomplished, the second is a certainty. Florida Orange growers have such confidence in the quality, juiciness, and flavour of their Oranges, that they quite believe that the time is not far distant when buyers will call to purchase their fruit at the groves, and I think their confidence is not by any means misplaced.

Grapes, Strawberries, and Peaches, about which I shall have something to say in another paper, also flourish, and pay well for growing in Florida. It is very certain that when Florida becomes better known there will be a greater rush of immigrants thither than has taken place to any of the other States of the Union, and land now selling at from 2 dols. to 25 dols. an acre will be worth ten times more. I may say, in conclusion, that any reader of these notes who contemplates trying his fortune in Florida, and is, therefore, desirous of gaining further additional information, can obtain it by addressing a letter to Box, 147, Waldo, Alachua County, Florida, and that such information will be cheerfully and truthfully given. *W.*

Plants and Their Culture.

Forced Roses.—Plants of these which were put into a gentle heat a few weeks ago are now in bloom. These were put into a small brick pit and kept close, very little fire-heat being required; the plants being well set with flower-buds when placed in the pit, are now making nice growth, and will soon require watering with liquid manure, so as to set their successional blooms. A few more Tea Roses should be brought on to form a succession to these, and given a dusting of flowers-of-sulphur if affected at all with mildew, and a top-dressing of some good kind of fertiliser before starting them into growth. Avoid syringing or watering the plants too much at first—indeed, very little moisture is required before growth re-commences.

Stocks.—These, if wanted early, will take weak liquid manure at frequent intervals when the pots are filled with roots, and should be kept close to the glass, and ventilated freely. Succession plants of these in thumb-pots should not be starved for want of root-space, but should be shifted into 48's. If the foliage suffers from damp, a sprinkling of the soil with dry wood ashes once or twice a week will do good.

The plants of Schizanthus raised a few weeks ago should be thinned out, leaving only three plants in each pot to grow on. If the sowing of seed of this annual was overlooked, it may be sown now, the plant being of great service in the spring.

Francoa ramosa is a pretty decorative plant, good for cuttings. It requires but little heat, and lasts for a long time in good bloom. Francoas grow freely from seed, and may also be divided in the spring. Turfy loam will grow them well, and the flowers will be found useful for filling vases and flower-baskets.

Auriculas in frames will now stand in need of careful watering and ventilation on very fine days. Violets may be similarly treated, and to be covered with mats or litter in hard weather.

Lachenalias growing freely in cold frames in positions close to the glass should be well supplied with water, and as the plants grow and fill the soil with roots, liquid manure may be afforded them, but taking care to keep it out of the centre of the bulbs and tops. Lachenalias are much better if grown in a frame than in a heated house, their flower-spikes and foliage not becoming drawn.

Useful Winter-blooming Plants.—Peristrophes, better known under the name of Justicia, are excellent plants for winter blooming, and of easy culture. P. lanceolaria is not so much grown as the more showy P. speciosa, but both are good decorative subjects, deserving to be more commonly grown, their bright purplish flowers being always attractive in winter. Propagation is by cuttings taken in the spring, and which should be put into a close hot-bed frame, three in a pot, they then strike more readily than when placed singly in a pot. A good compost for them is turfy loam, peat, leaf-mould, and a small quantity of coarse sand; and the plants should be grown in the intermediate-house until the final potting, keeping them stopped to encourage bushy growth; and during the summer a cold frame is a suitable place for them. A portion of the stock of these plants may be put into a temperature of 60°; early in the autumn they will produce a quantity of flowers; and the rest may be brought on at intervals during the winter. The flower-spikes are showy when cut, and the plants themselves decorative objects, especially P. speciosa. When the plants are in bloom, syringing overhead must not be practised, the flowers soon decaying when wetted. *G. Wythes, Syon Gardens.*

Fruits Under Glass.

Pine-apples.—If suckers of fair size may be found on stools of Smooth Cayenne or Charlotte Rothschild, they should be potted and plunged in a close, light pit near the glass, and in a bottom-heat of from 90° to 95°, with a moist atmosphere, and a temperature of 60° to 65° at night, a few degrees more being afforded them by day. Rooted suckers and others in small pots, and which are in danger of suffering from a cramped state of the roots, may be repotted, care being taken not to give the plants a check by employing cold soil, pots, &c. The soil for potting should be in a state of moderate dryness, and the plants in a moist condition. In removing the crocks the roots should not be broken, or, in fact, much disturbed, the soil being pricked out or just loosened between them; and after the potting, which should be firmly done, the plants must be replunged in the hotbed without loss of time.

Succession Fruiters.—It will now be time to look to those which are intended to fruit at an early period next year, picking out those that look the more likely to fruit without growing much more. It requires practice to do this, but if there is any difference in the plants, those with thick, well-developed stems, and which are filled up the most in the centre, should be chosen, and with the treatment advised in previous calendars the majority of these plants should be in a position to fruit. Plunge them in a pit or house in bottom heat of 90° to 95°, and maintain a genial atmosphere and a temperature of from 65° to 70° at night, with a small rise for the present by day, watering them if dry with tepid water before plunging, withholding water afterwards till signs of fruiting are visible. A batch to come on later may be treated as previously advised.

Fruiting Plants.—These should have a moist, warm temperature of 65° to 70° at night, and 75° to 80° by day in sunny, mild weather, and manure water when it is required, withholding the latter as the fruit begins to change colour. Support the fruit in an erect position, and if any crown is growing too large its central tuft of leaves should be twisted out. The whole stock should be examined at least once a week, especially during weather which demands much artificial heat, as some are sure to require to be watered. *W. Bennett, Rangemore, Burton-on-Trent.*

The Hardy Fruit Garden.

Orchard Trees.—To avoid the over-crowding of their branches, trees should have their crowns pruned annually, and dressed as may seem to be required. In pruning large trees, all interlacing branches should be removed and others thinned, so that light may be admitted to all parts, and this will aid materially the ripening of the wood and the fruit in due season. If the trees have been neglected in this matter, it will not be advisable to prune and thin out the branches very severely at once, but to do it in two or more years.

When pruning is completed, the stems and thick branches, if moss-grown, should be scraped with a blunt tool, and a dressing of lime wash given them, newly slaked lime being strewn over the smaller branches and small trees, doing this work in still weather. For most kinds of insect pests, soap suds and paraffin well mixed together we have repeatedly proved to be an effectual dressing for fruit trees, and this may, at this season of the year, be applied much stronger with safety than when the buds are on the move.

Young Standards.—Assuming that the shoots have been selected which are to form the head, and which should be about five in number, their points may be cut off long or short, according to the strength of the shoots, and the laterals spurred back to two buds, one of which should be directed outwards, excepting any of these that may be required to grow into fruiting branches as the heads increase in size. Care should be taken to spare the shoots of those varieties that produce much of their fruit at the points—for instance, Cornish Gilliflowers and Yorkshire Beauty.

Stunted old trees should be top-dressed with cow-manure and loam, after removing the surface soil over their roots, and doses of liquid manure supplied to the soil about the roots at this season—a proceeding that will often renovate old trees, especially on soils which are light or sandy. *H. Markham, Mereworth Castle, Maidstone.*

The Kitchen Garden.

Forced French Beans.—Afford any of these in pod weak dung-water and clear soot-water each alternate watering. All watering of Beans must be done with care at this season, and the quantity required should be in accordance with the temperature maintained; 55° to 65° is the heat best suited to French Beans. Plants in bloom do not receive manure-water, and if it be afforded them there is danger of a miss crop. Pick the pods before they get large, and thus prevent the exhaustion of the plants. Sow seeds once a fortnight, using 6 or 7-inch pots for the present, and which should be half filled with a mixture of loam, leaf-mould, and old spent Mushroom-bed dung, and if the soil be in a medium state of moistness, the seeds may be placed in it at once; if, on the other hand, it is considered too dry, water the pots and sow afterwards. It is a good plan to soak the seeds in tepid water for twenty-four hours and then place them in the pots, which may be stood on a board placed on the hot-water pipes. A good plan, and one which can be carried out with great success, is to sow three seeds in a 3-inch pot, keeping them close to the edge of the pots, and plunge the pots in cocoa-nut fibre or leaf-mould or coal ashes finely sifted, on a brisk bottom-heat, and when the pots are well filled with roots a sufficient number of 6-inch pots should be got in readiness, half-filled with soil, and made as warm or warmer than the hotbed, and into these pots the plants may be turned out, keeping them as deep in the pots as is practicable, being careful not to bruise the tender stems. The stems will be buried at this shift to a considerable depth, and in a short time fresh roots will form in the fresh compost. A portion of the plunging material will have to be removed from the frame and the plants returned, and the precaution taken by raising the frame not to let the leaves touch the glass. As soon as the plants show signs of blooming, remove them to a forcing-house, air being admitted every fine day.

Tomatos.—A steady heat of 55° to 60° should be afforded these plants, at the same time avoiding a sloppy state of soil, if the plants are grown in beds. In pots Tomatos are much more easily managed, and there is less liability that they will suffer from excess of moisture at the root. Remove lateral growths, and confine each plant to a single stem. Do not allow them to carry very many fruit at the present time, but when sunlight is longer and brighter the plants will acquire strength, and may be allowed to carry a greater number of fruits. It will be necessary artificially to fertilize the blooms, especially in foggy localities; and prior to operating, the atmosphere of the house, should be made as dry as it is safe to be. After the fruit is set, select the best of them, removing all the others from that setting. Succession plants should be kept quiet for the present, unless they are required owing to the failure of fruiting plants. In that case introduce them to a moist atmosphere, at a temperature of 55°, keeping them near the glass. If the plants are spindly, the tops may be cut off and used as cuttings.

Seeds of Tomatos may be sown, and after they have germinated place the seedlings close to the light, preferably on a shelf; and when the first rough leaf is visible the seedlings should be potted deeply in thumb-pots, using for these, as for other forced plants, a warmed soil. *W. M. Baillie, Luton Hoo.*

The Electric Light.—It may not be generally known that the fine wire-like thread seen coiled up in the "Swan" burners consists of the cortical fibres of the Bamboo. These are chosen by reason of their compact and nearly uniform structure. An ordinary strip of wood is composed of various tissues of different hardness and consistency, and is therefore ill suited for the purpose.

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APPOINTMENT FOR THE ENSUING WEEK.

SALE.

MONDAY, DEC. 23 { Lilies, Dutch Bulbs, &c., at Protheroe & Morris' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—38°.4.

*** OUR ALMANAC.—Secretaries of societies will greatly oblige by forwarding, as soon as possible, to the Editor, for insertion in the Almanac, any information respecting the dates fixed for horticultural and botanical meetings and shows in 1890. The Almanac will be issued with the first Number of the New Year.

☞ THE CHRISTMAS WEEK.—Correspondents are kindly requested to note that the Editorial duties proper to Thursday must, in the ensuing week, be performed on Tuesday, and are, in consequence, solicited to send in their communications for next week's issue as early as possible.

Christmas Trees and Flowers.

WILL some reader conversant with the vegetation of the Holy Land kindly tell us what plant is likely to be in flower in that country during the winter? Our Christmas Rose, Helleborus niger, is not found in Syria, though other less ornamental species of the same genus do occur in that country. The old Italian painters represent the Angel Gabriel with a spray of Olive or a spike of white Lilies; but it is doubtful whether Lilies or the Star of Bethlehem, Ornithogalum, would be in bloom at the time of the Nativity—at least, under ordinary circumstances. When the Infant was lying in the manger, says Mr. FOLKARD, the red Sainfoin was found among the grass and herbs which composed His bed. But suddenly it opened its pretty blossom that it might form a wreath around His head. Hence the practice in Italy of decking mangers at Christmas time with Moss, Sowthistle, Cypress, or Holly.

Inula oculus Christi probably owes its name to its beautiful disc-florets, but why the Hart's-tongue Fern should be called "Christ's-hair" is not very obvious. Still less so is the significance of "Christ's-herb," "Christ's-ladder," Erythrea Centaurium, "Our Lord's Flannel," and other names, not intentionally profane, perhaps, but little in accordance with our modern sense of reverence. They were adapted, in the opinion of mediæval monks, to bring home to the minds of the common people the incidents of New Testament history.

Poets, artists, sentimentalists, and lovers of popular names, often rise superior to considerations of accuracy, and at the Christmas season anachronisms are pardoned, and no one criticises too harshly the appropriateness of metaphorical allusions, however much "mixed" they may be. And so it comes about that, in all countries where Christmas associations are cherished, there are one or more plants specially associated in the minds of the populace with Christmas. For a list of these the reader may be referred to Messrs. BRITTEN and HOLLAND'S *Dictionary of English Plant-Names*. At home we have the Christmas Rose, Helleborus, and the Mistleto, about which so much is repeated, season after season, that we refrain from wearying our readers with an oft-told tale. The Holly, with its gleaming leaves and brilliant berries, uplifts the flag of hope through the dreary winter, and has, by lovers, says the Rev. T. F. THISELTON DYER, in his *Folk Lore of Plants*, long been supposed to have mystic virtues as a dream-plant, when used on the eve of certain festivals, Christmas being one. "The anxious maiden, before retiring to rest, places three pailfuls of water in her bedroom, and then pins to her night-dress three leaves of green Holly opposite to her heart, after which she goes to sleep," . . . persuading herself "that she will be roused from her first slumber [probably as a consequence of the pungency of the Holly spines!] by three yells, as if from the throats of three bears, succeeded by as many hoarse laughs. When these have died away, the form of her future husband will appear, who will show his attachment to her by changing the position of the water-pails; whereas, if he have no particular affection, he will disappear without even touching them."

A new and not altogether inappropriate term, "Christmas Cherry," has, we may incidentally say, to be added to the "common" names of exotic plants. A correspondent recently heard a costermonger apply the term to Solanum capsicastrum; although, perhaps, even a more noteworthy fact about this was, that the plants—well-grown stuff—were offered at 3*d*. each; the cost of the pot alone must have been 1*d*. If these plants can be grown, sent to market, and then retailed at 3*d*. each, where does the "grinding monopoly" of that much-abused person the "middleman" come in?

The Christmas tree of New Zealand is a red-flowered Myrtle-like plant, akin to the "Bottle-brushes," which used to form such ornaments to our greenhouses. Botanists know it as Metrosideros tomentosa. This is, says Mr. KIRK, in the *Forest Flora of New Zealand*, perhaps the most magnificent plant in the New Zealand flora. It attains a height of upwards of 70 feet, with a comparatively short trunk, and numerous large, tortuous arms clothed with bold foliage, green above, but white and silvery beneath. From the beginning of December to the middle of January its branches are crowned, from base to summit with large panicles of glittering red flowers, affording a pleasing contrast with the white under surface of the leaves as the branches are from time to time uplifted by the breeze. On the mountains, diminutive specimens 1—3 feet high may be seen growing from the face of the basaltic rock, and notwithstanding the unfavourable nature of the habitat, exhibiting the utmost luxuriance of foliage and extremely brilliant flowers.

The tree adopted by the Tasmanian settlers is Bursaria spinosa, whose thorns possibly recall the Holly of the old country.

In New South Wales, the colonists have settled that their Christmas tree shall be the Ceratopetalum gummiferum; we are afraid the name does not sound very "Christmassy." This is a plant frequently grown in our greenhouses, and the chief peculiarity in which resides the fact that the calyx, which usually comes to a standstill in the matter of growth after the flower is fully developed, in this plant goes on growing, so that the ripe seed vessel is surmounted by three or more sepals of a rosy-pink colour resembling petals.

In Jamaica, Ipomœa sidifolia is called Christmas Rose, Christmas Gambol, and Christmas Pride, because, as Mr. MORRIS tells us, it covers the banks and bushes with its beautifully white tresses of flowers at Christmas time. It is used by the negroes to adorn themselves withal at their festivities. Ruellia paniculata is similarly called Christmas Pride, and is used for like purposes.

The Christmas Fern of Canada is Aspidium acrostichoides, mentioned by Mrs. TRAILL in her *Studies of Plant Life in Canada* as one of the Ferns worth cultivating in England. It is described as a dark, handsome Fern, of a deep, full green; a very desirable species, hardy, and easy of culture, and having a very effective appearance among other more delicate Ferns. It has somewhat the appearance of the Holly Fern, A. Lonchitis, but is more showy.

What the plant selected may be is of relatively little moment; the detail may be different, but the underlying principle of good will is the same in all climates and under all circumstances.

The Journal of the Royal Horticultural Society.

ONE of the most prominent features attending the reconstruction of the Royal Horticultural Society is the publication at more regular intervals of the *Journal* of the Society. We cannot say that its contents are on the whole superior to what they have been in former years but they are at least equal, and that is saying a great deal, whilst their more systematic and regular production is an unquestionable sign of progress. Those Fellows living at a distance, and who cannot avail themselves fully of the resources of Chiswick, or of the Lindley Library, and who cannot attend the meetings, now at least get value for their money. We are assured that the annual money value, so far as it can be calculated, of the privileges accorded to each of the newly instituted class of Guinea Fellows amounts to forty-nine shillings! assuming, of course, that full use be made of such privileges. There are also advantages which cannot be estimated by a money standard. This being so, we may fairly hope to see a continued influx of new Fellows, and to learn that the advantages offered by Chiswick are appreciated on the one side and correspondingly developed on the other. The "Drill Hall" meetings are generally very interesting, but they have not yet succeeded in attracting the attention, to any large extent, of the Fellows, other than the members of the several committees, who always muster well, still less of the general public. This is probably owing to the situation of the hall in a side-street, though, in truth, it is only a few steps from one of the busiest and most important thoroughfares in London, and within five minutes walk of three railway stations. Spacious and commodious as the building is, the light is too often defective, so that, no doubt, the Council will consider the question of site as one deserving their serious attention.

It is not, however, our intention on this occasion to discuss the proceedings of the Royal



Fig. 101.—Silver-leaf trees near Table Mountain, Cape of Good Hope: from a photograph. (see p. 714.)

Horticultural Society, but simply to call attention to the recently issued number of the journal now before us. This opens with Professor Foster's paper on Irises, which comprises the substance of what was spoken by this enthusiastic cultivator on his favourite hobby. The paper is an excellent illustration of the advantages that may accrue, not from mere empirical routine, but from the point of view of the intelligent application of the hints to be derived from the study of vegetable anatomy and physiology.

Mr. Barron's paper on Strawberries should be acceptable to most of the guinea Fellows, and to the owners of suburban villa-gardens, who should be, in their own interests, such warm supporters of the Society. We have not space now to summarise Mr. Barron's remarks, but we may mention the names of what this experienced cultivator considers the twelve best varieties proceeding from the early, through the mid-season, to the late varieties:—1, Noble; 2, King of the Earlies; 3, Vicomtesse Héricart de Thury; 4, President; 5, Sir Joseph Paxton; 6, Sir Charles Napier; 7, Countess; 8, Lucas; 9, British Queen, "the finest Strawberry in cultivation;" 10, Dr. Hogg; 11, Waterloo; 12, Elton Pine.

Mr. Bunyard's paper on the market culture of Strawberries teems with valuable information, and should be carefully studied by those who are concerned in the development of fruit culture. For many reasons, we think the prospects of small fruit culture in this country are much better than those pertaining to orchards.

Following Mr. Bunyard's paper, comes the record of the proceedings of the Rose Conference at Chiswick, which even the specialists admit to have been "the most noteworthy event of the year." As an exhibition it was unquestionably one of the most interesting, a fit successor to the Primula Conference, and others which have conferred so much honour on the Society. Honour does not always coincide with profit, however, and it is a matter of regret that so excellent and interesting a meeting as the Rose conference was, should have been so poorly supported by the Fellows and the public.

The exhibition was, as we have said, of a unique unique character, and more likely to promote the development of Rose culture in new and improved directions than any number of competitive exhibitions, where the chief object seems to be, not the advance of horticulture, but the glorification of him who shall most effectually succeed in beating his neighbour!

The co-operation of the National Rose Society, and of its excellent Secretary, Mr. Mawley, is a thing to be noted with great satisfaction, as it is obvious that if the several special societies will co-operate with the parent society, they may further their own interests and manage their affairs in their own way at less cost to themselves, at the same time that they lend support to a society which has wider aims, a less restricted purpose, and a more generally important mission to fulfil. The value of the co-operation of the two societies is manifest in the present number, wherein the hon. secretary, of the Royal, the Rev. W. Wilks, has collected statistics relating to the best Roses in the various sections in different localities. By means of a rather forbidding system of abbreviations, the Editor has, with an amount of industry and patience that cannot be too highly eulogised, succeeded in laying before the public a body of information relating to the Rose never before equalled. We shall probably avail ourselves on another occasion of Mr. Wilks' digest of the huge mass of statistics that he has got together, meanwhile we should be ungracious to defer for a moment longer than is unavoidable, our sense of appreciation of the value of the services so freely rendered to the Society by its Honorary Secretary, and by his cooadjutor of the Rose Society.

Following the account of the Rose Conference, comes Mr. Shirley Hibberd's essay on the origin of the florists' Carnation, which affords a good illustration of the variations possible in a pure-bred species as contrasted with the Rose or the tuberous Begonias, which are of very mixed descent.

In his essay on the history of the Peach, Mr. T. F. Rivers appears not to have consulted M. A. de Candolle's article on the subject, nor to have been familiar with Dr. Aitchison's discoveries in Affghanistan. But these historical researches are, to most Peach-lovers, of little moment, as compared with the modern development of Peaches and Nectarines, and the improvements manifest in flavour and in the prolongation of the season of consumption, points on which there is much reason to hold the name of Rivers in grateful esteem, and points also on which the reader will find much valuable information in the present paper. Mr. Rivers' observations on outdoor cultivation, and wall training, and on culture under glass, will be read with the attention they deserve.

Mr. Coleman's essay on Conifers teems with points of interest, and should be followed up by a paper emphasizing the probable value for economic purposes in this country of such trees as Abies Nordmanniana, Thuiopsis borealis, Thuia gigantea, the Lawson Cypress, and others. Mr. Coleman does not indiscriminately condemn grafting as a quick means of propagation, but he very properly insists on the selection of suitable stocks. With reference to nomenclature, Mr. Coleman, in suggesting a conference to simplify and regulate the nomenclature, seems not to have remarked that such a Conference has already been assembled (not in this country, it is true), and that one outcome of that Conference is Mr. Beissner's *Handbuch der Coniferen Benennung* (published in 1887. Although the preface and observations are written in German, the list of species, with their synonyms, is given in Latin, so that for catalogue purposes the little book is available in all countries. We have called attention to this little book on more than one occasion, but as it is still unknown to many, it might be of advantage if the Royal Horticultural Society would reprint the list, together with such additions and modifications as may be necessary for English readers.

Mr. Wildsmith's essay on Pears succeeds that of Mr. Coleman. In it he deals with the questions relating to soils and their preparation, stocks, planting, pruning, manures, selection of sorts, and gathering the produce. No recommendation is needed to commend to the gardening public what Mr. Wildsmith may have to say about Pears.

This completes the list of papers read up to October 22. The remainder of the part is composed of brief summaries of the proceedings at the several meetings from March 12 to June 25.

In the following part, we may look for the publication of the results of the great and most valuable Vegetable Conference, to which we look forward with keen interest.

Some complaints have arisen that the gardening journals are precluded from publishing in their weekly issues the papers read at the several meetings. Now that the *Journal* is published at more regular intervals, and that in future, as we hope, it will be still more frequently issued, we do not think that anyone can reasonably complain of the Society for reserving for its own *Journal* the papers submitted to it. The reports of the Chiswick trials should, however, be made known immediately, through the Press, as they lose the greater part of their usefulness if their publication is delayed.

The meetings are public, so that there is nothing to prevent the members of the press from employing a short-hand reporter to take down the speaker's words; and this, indeed, has been done by ourselves on several occasions without let or hindrance. As a compromise, we would suggest that the authors of papers be requested to furnish the Secretary of the Society with an abstract of their papers, and that a certain number of these abstracts be circulated in slips at, or even before, the meetings among those likely to be able to contribute to the discussions, and that they should also be forwarded for publication to each of the gardening journals. The public would then not have to wait an indefinite time for information as to what takes place at "the 3 o'clock" meetings, and would, from the slight indications thus afforded, learn to expect with the more interest the publication of the full text with illustrations in the *Journal* of the Society. Be all this as it may, the *Journal* now bears ample testimony to the amount of work done, to the interest and good-will of those who take part in the proceedings of the Society, and now that it is freely circulated all over the country, it will, we hope, be the means of largely increasing the number of Fellows.

The Botanical Magazine.—The one hundred and fifteenth volume has been dedicated by its editor, Sir Joseph Hooker, to Dr. Isaac Bayley Balfour, Professor of Botany in the University of Edinburgh. Professor Balfour is well known for his researches into the Natural History of Socotra and Rodriguez, and many will share the hope expressed in the dedication that the duties of his present office may leave him leisure to continue as he began, to reap laurels in the field of original research.

A New Catalogue of Chrysanthemums.—It is proposed that a new edition of the National Chrysanthemum Society's Catalogue be issued as early as convenient in the coming year. The preparation of this work will be aided materially if catalogues containing the enumeration of the novelties for the select lists, with all corrections and additions, be forwarded at once to Mr. Lewis Castle, Hotham House, Merton, Surrey; or to Mr. George Gordon, 1, Stile Villas, Wellesley Road, Gunnersbury.

"The Flora of Suffolk."—The Rev. Dr. Hind has published through Messrs. Gurney & Jackson, successors to Van Voorst, a detailed *Flora of Suffolk*, with interesting introductory matter concerning the geology and meteorology of the county. Equally interesting is the appendix containing a comparison of the floras of Suffolk and of Holland, and a chapter on the progress of botany in Suffolk. The labours of Sir John and of Sir Thomas Cullum, of the poet Crabbe, of Dawson Turner, Sir James Paget, Mr. D. Stock, Professor Henslow, Mr. Skepper, Sir Charles Bunbury, Dr. Churchill Babington, and others are alluded to. Altogether Suffolk has been fortunate in its naturalists, and whilst the Ipswich Museum remains a model of what such an institution ought to be, the present *Flora* in its way will prove an indispensable guide to those interested in Suffolk botany.

New Chrysanthemums in Philadelphia.—According to a correspondent of *Garden and Forest*, the recent show of Chrysanthemums in Philadelphia was the best in quality yet seen in that city. Of flowers for the first time shown, Harry E. Weidener, a bright lemon-yellow, of the grandiflorum type, and perfectly incurved, took the Blanc prize; it was raised by William Jamison, and shown by Hugh Graham's Sons. The same firm gained

an award for a white seedling, incurved, and also of perfect form and immense size. Crown Prince, grown by James Monahan, gardener to Mr. Charles Trotter, is an evident improvement on Mrs. Wheeler, much larger, and of freer growth. J. T. Emler is in the way of Mrs. Carnegie, and has a better form than that fine flower; Molly Bawn is a white sport from the well-known Syringa—a novel form in a white flower; Thomas A. Edison is very large, and valuable for its colour—a creamy lilac, and quite new; Eldorado is of the deepest yellow, a yellow flushed with orange; and Mrs. Trotter is a beautiful flower, of a novel lilac shade. John Hughes, gardener to George W. Childs, showed several fine seedlings, a firm white and a delicate rose, with pale reverse, both being especially good. Mr. W. H. Graham showed one large incurved blush-white, with broad florets, and another of pure white. The flower which won the premium as the best single bloom was Mrs. W. K. Harris, to which the plant prize went last year; it is a large, rich yellow, incurved, very deep, and carrying as many florets, perhaps, as any Chrysanthemum in cultivation. Mr. Peter Henderson's new Louis Bœhmer would have caused a sensation two years ago, since it is almost an exact reproduction of Mrs. Hardy, except in colour, which is called by some a silver-rose, and by others a rosy-lilac. It is not a lively tint, and the pubescence, which is quite as dense as that on Mrs. Hardy, rather dulls than brightens it.

The Post Office and Newspapers.—The general public, accustomed to the regularity with which, in spite of its enormous extent, the letter-post is conducted, and grateful for the many facilities offered, will be surprised to hear of the vexatious obstructions which are often thrown in the way of newspapers by the Post Office, obstructions which, as we know, cause much loss of time, much unnecessary harass, and often pecuniary loss. The following extract, which we condense from the *Pall Mall Gazette* of November 28, affords an illustration of what we have stated:—"A great victory was obtained over the red-tape-bound officialism of the General Post Office the other day. The conqueror is Mr. T. G. Bowles, who owns a newspaper called the *Lady*, and the fight came about in this wise. Last year the Post Office surcharged his Christmas number, because, being big with advertisements, they said it was not a newspaper. This meant over £300 to Mr. Bowles, and more delay to his subscribers. So he resisted the impost, and has spent a year in hopeless correspondence, he contending that the *Lady* is not a book, nor a parcel, nor a MS., nor a letter; they maintaining that it is not a newspaper. Lately, another Christmas number being in the press, Mr. Bowles asked if the Post Office was going to surcharge him again? The reply came that they were. The same afternoon his counsel moved for an injunction restraining the Postmaster-General from carrying out his expressed intentions. And then the Post Office counsel suddenly said the *Lady* would be allowed to pass through the post for a half-penny, required no payment of the difference between the newspaper rate and the book rate into court, and asked for no deposit whatever.!"

A New Musa.—M. Franchet has lately described, says *Le Jardin*, a new species of Banana from Yun Nan which is less than 2 feet in height, and produces its hairy dry fruits on the surface of the soil.

How do Leguminous Plants get their Nitrogen?—The roots of Peas, Beans, Clover, and other Leguminosæ are provided with little nodules, the explanation of which has given rise to much speculation. M. Bréal has recently shown that the culture of these plants is possible in an absolutely sterile soil, provided the plants be watered with water which has previously been in contact with earth in which leguminous plants have grown. The nodules on the rootlets contain an organism or bacterium, which is supposed to absorb nitrogen from the atmosphere, and render it available for the use of the leguminous plants, which, as is well known, are not specially benefited by nitrogenous manure, although they contain so large a proportion of nitrogen. There is in fact a co-operation between the leguminous plant and the bacterium to the reciprocal advantage. Relations of this sort have now been established in many cases.

Nicotiana colossea.—An annual plant (perennial when grown under glass), attaining a height of 2 to 3 yards, with leaves a yard long and half as much in breadth. It was introduced accidentally with some Brazilian Orchids. It is well adapted for subtropical gardening, and is propagated by cuttings in autumn. Latterly a little seed has been collected, which has been placed in the hands of M. Godefroy, of Argenteuil, for distribution. A woodcut of the plant is given in the last number of *Le Jardin*.

Hybrid Odontoglossums.—None of the artificially raised forms of this genus, writes Mr. Sander, have yet flowered, except the one named Miltoniopsis Bleui, a cross between Odontoglossum (Miltonia) vexillaria and O. (Miltonia) Roezlii. At Lord Rothschild's place at Tring Park, one such seedling is in existence, while at Armainvillers, the seat of Baron Edmund de Rothschild, there are several which have as yet not flowered, among them crosses between O. Rossi and O. Cervantesii, and between O. crispum and O. luteo-purpureum. These have been raised by M. Jacob.

"**Onions and Cress.**"—From a little book with the above title, by Mr. H. Valentine Knaggs, we learn that, "In London alone the street-hawkers are said to dispose of about ten thousand pounds' worth of watercresses annually, and the greengrocers are credited with selling about half as much as well! If the use of cress can do half the good to the human constitution which various writers declare it does, these figures, large as they may seem, could be profitably exceeded; and it will be a great favourite with our fair friends, if they find the words of Gerard true, 'that it will restore the wonted bloom to the cheeks of young ladies.'" Although we do not dispute the facts, it would be interesting to know how the author arrived at them. Of the Onion, Mr. Knaggs gives quite an exhaustive history, from the time the ancient Egyptian regarded it as a Divinity, and had the bad taste to swear by it, down to the vegetable as we now see it—developed and modified of course. The uses, as food, and medicinally, of this tear-provoking bulb are given fully and methodically. Numerous allusions in literature to onions and leeks, *et hoc genus omne* are given, as well as directions for culture. The medicinal effects of the use of onions appear to be chiefly due to a volatile oil, which is a combination of sulphur with a hydro-carbon body, *allyl;* as this forms sulphides with certain metals, consequently onions and garlic are in a measure antidotes for poisons such as arsenic, mercury, and antimony.

"**The Good Time Coming.**"—William Morris informed the members of the Fellowship of the New Life the other night, how we shall live then—that is, when the social millennium comes. In the earthly paradise foreshadowed by the poet-painter, there will be no private property, profit, rent, or interest, and except for drudgery, no machinery. Every man would take his part in healthy outdoor occupation and exercise, or, if he cannot, will be regarded as a diseased human being, as something less than a man; while indoor work which we now call art and science, and imaginative literature, will be pursued for pleasure, not for profit, and not to the exclusion of outdoor work. Mr. Morris gave an original classification of the arts, including agriculture and such kindred arts as butchering, under the head of outdoor arts. Indoor arts, building and decorative arts, workshop arts, and disagreeable arts, were the remaining heads, the latter being divided into rough and smooth disagreeable arts. Quill-driving and official sauntering—smooth disagreeable arts—are to be done by machinery, if they must be done, and buying and selling is to be left to those in whom the taste for such occupation survives from the present age. Among other details of the scheme evoked by subsequent discussion and criticism was the disappearance of gaols, workhouses, and the crime caused by the present conditions of society. Mr. Morris prudently declined to launch into the discussions on theology or the currency, which some present attempted to raise.

Vilmorin, Andrieux & Co.—To celebrate the great success obtained by the firm at the recent Paris Exhibition, where they were awarded three Grand Prizes, three Gold, and one Silver Medal, Messrs. Vilmorin, Andrieux & Co., invited the whole of their *employés* to a banquet, which was held at the "Salon des Familles," Avenue de St. Mande, on the 15th inst., when 410 were present, the remainder being prevented by circumstances from attending. Before the banquet a most interesting ceremony took place, viz., the presentation of a bronze statue ("David and Goliath") to M. Henry L. de Vilmorin, on the occasion of his promotion to the grade of "Officier de la Légion d'Honneur." This *objet d'Art* was accompanied by an address signed by 448 *employés* of the firm, congratulating him on the honour recently conferred upon him, also expressing the sincere respect and high esteem in which he was held by everyone. M. de Vilmorin appropriately acknowledged the compliment paid him, and expressed the pleasure that his partners and he experienced in having around them so large an assemblage of their *employés*.

The Clyde Disaster Fund.—The honorary secretary, Mr. F. Horsman, reports that the fund has now reached the sum of £450, which includes the receipt of £21 from G. N. Stevens, Esq., Springfield, Tulse Hill; Messrs. Hurst & Son, £3 3*s*.; Mr. Methven, gardener to the Baroness A. Rothschild, Geneva, £1 1*s*., and various smaller sums. The committee met again on Friday last, when the mode to be adopted for the distribution of the money was arranged, and of which notice will be given in these columns.

Mr. James Anderson.—We always associate the name of Anderson with that of Meadowbank, the scene of many of his cultural triumphs, but Manchester is in future to be his headquarters. Mr. Anderson has turned his attention for some years to valuation and similar business, and is connected with the *Northern Gardener*, a weekly journal, published at 1*d*., and devoted to the interests of gardening in the northern counties.

Orchids.—Mr. Watson's work on these plants, issued in parts by Upcott Gill, 170, Strand, has now reached its seventh part, which is occupied by the account of the cultivated Masdevallias, and the commencement of the history of the Odontoglossums.

Second Census of Australian Plants, 1889.—Baron Sir Ferdinand von Mueller has prepared a second census of the plants of Australia, from which it appears that the total number of orders of Vasculars plants is 156; of genera, 1409; and of species, 8839. Of these 3560 occur in Western Australia, 1892 in South Australia, 1029 in Tasmania, 1894 in Victoria, 3251 in New South Wales, 3753 in Queensland, 1956 in North Australia, 7837 were described in *Flora Australiensis*, additional species recorded in census amounting to 1002. The proportion of distribution through the respective colonial territories is as follows:—In Western Australia, 40·3 per cent.; in South Australia, 21·4 per cent.; in Tasmania, 11·6 per cent.; in Victoria 21·4 per cent.; in New South Wales, 36·8 per cent.; in Queensland, 42·5 per cent.; in North Australia, 21·1 per cent. Of the total number, 7501 are endemic in Continental Australia and Tasmania; 1338, or 15·1 per cent., extending to other countries. Of these latter 160 are found in Europe, 1032 in Asia, 515 in Africa, 315 in America, 558 in Polynesia, 291 in

New Zealand. The number of species added since the publication of the first census in 1882 is 193, irrespective of some systematic reductions. The census contains the names of all the orders, genera, and species, with references to authorities, dates, and place of publication, references to MUELLER'S *Fragmenta* and to the *Flora Australiensis*, with indications of the distribution through the various colonies—a most useful piece of work.

ATTAR OF ROSES IN GERMANY AND CYPRUS.—The cultivation of Roses for their oil is extending in the vicinity of Leipzig, and the magistracy of Berlin is endeavouring to establish an experimental station for the culture of the Rose in the irrigation fields of Osdorff. Dr. DIECK, of Merseburgh, is obtaining Roses for the like purpose from North America, Spain, Japan, and other countries. Rosa triquetipetala [?] is, he tells us, cultivated in Cyprus, Transcaucasus, the Crimea, and northern Persia for the sake of the attar. In Cyprus the Rose, called *τριανδά φυλλα*, is chiefly grown in the Marathassa valley on a small scale, and without much care; one villager in every ten, for instance, planting a few bushes on the border of his vineyard. From this Rose the villagers extract the essence, either by distillation or by boiling. Enough is made for domestic use, but not for purposes of trade.

GARDENERS' ROYAL BENEVOLENT.—The fifty-first annual general meeting will be held on January 16, when fifteen pensioners will be placed on the books like that issued by the *Illustrated London News*, and previously noticed in these columns. Somewhat equal to this one in size, but necessarily differing in the contents, is the *Live Stock Journal*, published by VINTON & Co., 2, Bridge Street, E.C., which is filled with matter of interest to the farmer, the grazier, and the breeder of domestic animals of all kinds. CALVERT'S *Mechanics' Almanack* is a publication of value to others besides those to whom it is ostensibly addressed. Messrs. PEARSON & SON, Beeston, Nottinghamshire, issue a Calendar for each month, and much useful information about garden buildings and their mode of heating.

CARNATION AND PICOTEE UNION.—The annual report announces a flourishing state of affairs, and corresponding enthusiasm on the part of the promoters. Mr. J. MCINTOSH is the President, Mr. SAMUEL BARLOW and Mr. THOS. A. WELTON are Vice-Presidents, while Mr. DODWELL acts, not only as Hon. Sec. and Treasurer, but as garden director and plant distributor.

HORTICULTURAL CLUB.—The usual monthly dinner and *conversazione* was held at the rooms, Hotel Windsor, on Tuesday evening, the 10th inst., Mr. John Lee in the chair. There were present also Messrs. J. H. Veitch, Philip Crowley, H. J. Pearson, C. E. Pearson, A. J. Pearson, H. Veitch, W. Herbert Fowkes, James Walker, George Bunyard, J. H. Stott. The subject for discussion was Insecticides, and the best method of applying them. It was opened by Mr. C. E. Pearson, who gave a very interesting account of experiments tried with various insecticides; and afterwards Mr. J. H. Stott exhibited in operation his very ingenious invention for the distribution of insecticides, which was considered by those present as likely to be extremely useful.

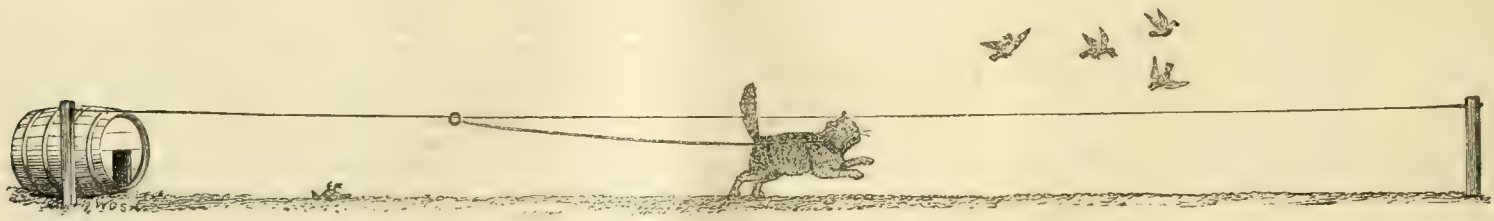


FIG. 102.—HOW TO PROTECT THE PEAS. (SEE P. 729.)

und—six by right, nine by election. In all there are twenty-five candidates, all approved by the committee of selection, but only nine can be elected. Gardeners of all degrees might think of this at Christmas, and do something towards adjusting the balance.

THE RECENT CHRYSANTHEMUM CONFERENCE.—We have had submitted to our notice two photographic views of the conservatory at Chiswick on the occasion of the conference, one is a general view of the groups of plants taken from the west end at which visitors entered. The other represents the fine collection of cut blooms staged by Mr. MOLYNEUX. The photos, which are the work of Mr. W. MOUNTAIN, 211, Clapham Road, S.W., are excellent pieces of work, showing great depth of tone and detail in the shadows. The characteristics of the flowers are also well represented, and the views afford useful hints both as to what should, and as to what should not, be done in the way of Chrysanthemum showing and grouping.

ANTISEPTIC TREATMENT OF TIMBER.—Enquiries having been made in these columns upon this subject, we are glad to call attention to a paper published by Mr. S. B. BOULTON, and to be had at the Institution of Civil Engineers, 25, Great George Street, Westminster. The paper contains the fullest details on the subject, and should be studied by all interested in the matter.

ALMANACKS.—These reminders of the lapse of time have arrived in considerable numbers, and of varied bulk, from the mere sheet which the gardener may hang on his fruit-room or office-wall, to portly books like that issued by the *Illustrated London News*, and previously noticed in these columns. Somewhat equal to this one in size, but necessarily differing in the contents, is the *Live Stock Journal*, published by VINTON & Co., 2, Bridge Street, E.C., which is filled with matter of interest to the farmer, the grazier, and the breeder of domestic animals of all kinds. CALVERT'S *Mechanics' Almanack* is a publication of value to others besides those to whom it is ostensibly addressed. Messrs. PEARSON & SON, Beeston, Nottinghamshire, issue a Calendar for each month, and much useful information about garden buildings and their mode of heating.

THE "GARDENERS' MAGAZINE."—Our contemporary generally manages to afford its readers at Christmas time a little diversion from their everyday thought and work. This year it contains stories by GEORGE MANVILLE FENN (headed by a charming woodcut of Ightham Mote), by JAMES STANLEY LITTLE, by ARTHUR PASK, and Dr. GORDON STABLES. We shall not reveal the plot of these stories, but leave the reader to find it out for himself. Of course Chrysanthemums are so much to the fore just now, that even in the Christmas week an echo may be heard sounding very like "mum"! while the floral decoration of the Almanac is composed entirely of Chrysanthemums, and is suggestive of one method of arranging Chrysanthemums for effect which the managers of shows would do well to consider.

LADY DOWNES' SEEDLING.—We have received from Mr. THOMSON, of Clovenfords, N.B., a photograph by Mr. MACNAIR, of Galashiels, of the celebrated vinery of Lady Downes' Grape, which, when taken, must have been an astonishing sight. The house, a lofty span-roofed one, contains, so far as the photograph enables us to distinguish them, about two dozen Vines of either one or two rods each, which are loaded with fine large bunches of Grapes from wall plate to summit. The house is heated by four rows of pipes on either side, is destitute of all staging or pits, the border occupying the entire area, and three plank gangways run from one end of it to the other. It is a market vinery of the first class, and one in which the Vines alone are studied, speaking well for the success attending the methods pursued, and the virtues of the soil, and the famous Vine manure with which they are fed.

GARDEN NOTES:—

LUTON HOO.—The Prince and Princess of WALES have been on a visit to the Danish Minister and Madame DE FALBE. Illustrations of the gardens under the charge of Mr. Baillie were given as Supplements May 11 and July 20, 1889.

IGHTHAM MOTE.—This famous old house, figured in these columns, Supplement February 2, 1889, is to be the residence of Mr. T. C. FERGUSON, the grandson of the celebrated surgeon, and his bride elect, a daughter of Prof. MAX MÜLLER.

"MOOR PARK, FARNHAM," says the *Daily Telegraph*, "famous for its association with the names of Sir WILLIAM TEMPLE, JONATHAN SWIFT, and STELLA, has been sold to Sir WILLIAM ROSE, who will take possession of it in spring. Sir WILLIAM TEMPLE, who had a keen appreciation of the beautiful in Nature and in Art, declared Moor Park to be 'the sweetest place, I think, that I have seen in my life at home or abroad,' 'the perfectest figure of a garden I ever saw;' although Walpole cynically observed that 'any man might design and build as sweet a garden who had been born in, and never stirred out of, Holborn.' Near the east end of the house stands the sundial under which, according to his own request, Temple's heart was buried. SWIFT spent many of his pleasantest days in the extensive library which his patron had collected in all countries, varying this employment with making love to HESTER JOHNSON. He was half secretary, half amanuensis to Temple, and less than half contented with his position, although it was here he did some of his best work."

WELBECK.—The Duke and Duchess of PORTLAND are in residence.

PANSHANGER.—Earl and Countess COWPER are entertaining guests.

LATIMER.—Lord and Lady CHESHAM are at their seat in Bucks.

OSBORNE.—The QUEEN is at her Isle of Wight residence. There are no fruit houses there, the royal tables being supplied from Frogmore.

LIST OF FAMOUS HORTICULTURISTS.—We extract the following from the *Journal of Botany* for October and November:—

"MACKAY, JOHN (d. before 1803): d. Edinburgh, before 1803. Of Edinburgh, Nurseryman. Contributed largely to Eng. Bot., 1793—1802: Eng. Bot., tt. 311, 1123, &c.

"MACKAY, JOHN (1795—1888): b. Echt, Aberdeensh., 5th Feb., 1795; d. Totteridge, Herts, 9th Aug., 1888. Nurseryman at Clapton. F.L.S., 1824. Jacks., 410. Garden, xxiv., 287.

"M'KEN, MARK JOHNSTON (1823—1872): b. Maxwelltown, Dumfries, 1823; d. Pietermaritzburg, Natal, 20th April, 1872. Collected in Jamaica. Curator, Natal Bot. Gard. 1851—53 and 1860—1872. 'Ferns of Natal,' 1869. 'Synopsis Filicum Capensium' (with Mr. W. T. Gerrard), 1870. Pritz., 200; Jacks, 350, 351; Gard. Chron., 1872, 806; Journ. Bot., 1872, 223. *Mackenia*, Harv. = *Schizoglossum*.

"Macleay, Alexander (1767—1848): b. Rossshire, 24th June, 1767; d. Sydney, N.S.W., 19th July, 1848. F.L.S., 1794; Sec., 1798—1825. F.R.S., 1809. Colonial Sec., N.S.W., 1825—1836. Entomologist. 'A practical botanist,' R. Brown. Proc. Linn. Soc., ii., 45. Oil Portr. by Lawrence at Linn. Soc. *Macleaya*, Br. *Narcissus Macleaii*, Lind.

"McNab, James (1810—1878): b. Richmond, Surrey, 25th April, 1810; d. Edinburgh, 19th Nov., 1878; bur. Warriston Cemetery, Edinburgh. Son of Wm. McNab. Curator, Bot. Gard. Edinburgh, 1849—1878. Orig. Memb. Bot. Soc. Edinb.; President, 1872. Contributed to Bot. Mag., Sweets' Brit. Flower Garden, Edin. Philosoph. Journ., Trans. Bot. Soc. Edinb., Garden, &c. R.S.C., iv., 170; viii., 300; Journ. Bot., xvi., 382; Trans. Bot. Soc. Edinb., xiii., 381; Gard. Chron., 1871, 1033; and with portr., 1878, ii., 661. Life, portr., in 'Garden,' xii., (1877).

Notices of Books.

Our Cats, and all about them. By Harrison Weir, President of the National Cat Club Tunbridge Wells. R. Clements & Co.

Elegance of figure, grace of motion, soft harmonious colouring, all these are possessed in more or less degree by the domestic cat. So long and so universally, indeed, has the cat been treated as a domestic pet, that it is to be wondered at that the establishment of a cat show should have been reserved for our own times. Given a cat show, the delimitation of breeds, the establishment of a series of "properties," and of an ideal standard of perfection, become necessary consequences.



Fig. 103.—One of Mr. Weir's friends, a finely marked tortoiseshell cat.

All this being granted, there will be no difficulty, among those who know, in hailing Mr. Harrison Weir as the apostle of the new cult, or shall we say the revived cult, for the dwellers by the Nile were before us. We cannot say how much they knew, but we are safe in saying that Mr. Weir has unrivalled experience in similar cases, his knowledge is varied, his sympathy with living creatures is even greater, if possible, than his knowledge, and he has the enviable power of eliciting the sympathy of others by his admirably life-like representations. Whether this facility with the pencil, joined to this sympathy with both man and beast, does not lead the artist to endow the faces of his feline friends with too human an aspect is a question. In any case, there is no difficulty in finding resemblances to human types of character, if not of individuals, in the illustrations to the present volume. Mr. Weir discourses pleasantly and learnedly about the several breeds of cats and their characteristics, but here and there the proofs would have been better for further revision. The geniality and sense of humour of the artist-author are manifest in every page; sometimes, as we presume, undesignedly so, for in one place we are told that "In confinement, Mr. Bartlett, the skilful and experienced manager of the Zoological Society's gardens at Regent's Park, finds that one meal a day is sufficient, and this is thought also to be the case with a full-grown cat!" The illustrations are delicious renderings, alike of furry investment and mental complacency.

The Egyptians had cats—held them sacred, embalmed them when they died, but with that exception the civilisation or domestication of cats seems to be comparatively recent. The erudite Hehn contends that neither Greeks nor Romans knew of the domestic cat. In those days mice were caught by weasels, or by wild cats or owls; so that in the fables of those early days, wherein, had it existed, the cat, it would seem, must have been mentioned, no notice is taken of the animal as the inmate of the house and the associate of man. No remains of cats have been disinterred at Pompeii, though the bones of other domestic animals are not uncommon. Six hundred years after Christ, the domestic cat (we are citing from Hehn) first made its appearance in Western Europe. Its appearance is associated by him with the first appearance of the rat, which, introduced from Asia, speedily overran the granaries of the western world.

As the book is one which every lover of natural history will desire to possess, or at least to read, we shall not occupy space with extracts. We may say, however, that it abounds in curious observations, which will interest many besides those interested in cat shows. The action of "sharpening of the claws," for instance, is attributed, and with reason, to another cause—the desire to stretch the muscles. The account of the wild cat of Britain, and the chapters relating to proverbs and superstitions, to cat-races as practised in Belgium, to various games and other miscellaneous subjects, may be read in this holiday-time with much profit and amusement. Strangely enough, we do not find any more than passing allusion to the utility of cats in the garden, and this omission leads us to reproduce the portrait of an old friend of former days (see fig. 102), and which will serve to show how Pussy may be made useful in the garden, and both Peas and birds preserved. Provided the hours of work be not too long, the restraint is trifling.

Floral Art in Christmas Cards.

The journalist who, for a special purpose, lightly undertakes to "have a look" over even a small section of any leading fine art publisher's stock of Christmas cards, will return to his office a wiser, but certainly a dejected man. As portfolio after portfolio is carefully heaped up around him, and after various frantic efforts to keep his notes up to within a reasonable distance of the never-failing supply of subjects, he begins very quickly to think that it is possible to have a surfeit even of good things. This the present writer found to be particularly the case, a few days since, when Messrs. Raphael Tuck & Sons permitted him to glance over their endless store—or, to speak more correctly—their wonderful assortment of nearly 10,000 distinct and new designs.

It is almost needless to state that flowers and plants of all sorts form a conspicuous—in fact, a principal—part in the greater number of the cards. The strides which have been made during the past few years in floral art is only, perhaps, in proportion to the advances made in other and widely different subjects. But those who remember the crudities in art of forty and fifty years [and less] ago, will best appreciate the extraordinary superiority of the work of to-day in, at all events, the question of Christmas cards. Except in botanical treatises, expensive floras, and costly monographs, floral accuracy was a matter of sublime unimportance. If the British Public mistook the painting of a Rose for that of a Dahlia, or a sprig of Hawthorn for one of a Pear tree, it mattered little, for the British public has always been a long-suffering one. Such an inference from such a proposition may not be entirely in harmony with principles of logic as demonstrated by the late Professor Jevons, but we can assure the reader that the facts are perfectly true. The one great ambition of the amateur floral "artist" of half a century ago was apparently the same as that which animated gardening and many other things: it was not so much a question of Nature, as it was a matter of what a thing ought to look like according to the most approved rules of correct outline and precision.

Quite within recent years improvements have been effected in what we may term art in its minor phases. In no respect has so great a change for the better been effected than in the art of delineating flowers. It is, however, only one of the many results of the higher education, which has fostered and encouraged the latent and universal taste for art. The great advances which have been made are the result of a great variety of circumstances, the most important being, first commercial, and secondly, the natural craving for novelty. Where this insatiable demand for something new will lead us, it is impossible to hazard even the wildest of guesses. If that phase of it which most nearly affects us is answerable for no greater outrages upon fidelity than are to be seen in the Christmas cards of various leading firms, we shall not have much occasion to find fault.

To indicate the great extent to which this traffic is now carried on, Messrs. Raphael Tuck & Sons boast of employing nearly sixty lady artists "on the premises," so to speak; besides this, they have correspondents in nearly all parts of the world who submit the work of their pencil or brush to the manager, just as authors submit their articles to periodicals. "Declined with thanks," it is a relief to know, is not, therefore, a literary monopoly. Formerly, the Holly, the Ivy, and the Mistleto played the principal parts in the floral embellishments of Christmas cards, but of late years a wise innovation has gradually worked itself into prominence. Anything and everything is now considered appropriate in this respect. To an unsophisticated lover of Nature and the eternal fitness of things, the anachronisms are sometimes sufficiently pronounced to make the hair stand on end. But has not "le divin Williams," as a Frenchman once called the author of *Hamlet*, also committed anachronisms equally marked? And in these days artists are like politicians—they do not stick at trifles. But Nature herself is erratic, and "the last Rose of summer" is not easily distinguished from the first Rose of spring—they often overlap each other, as it were. Snow at midsummer, and Roses in midwinter, are not by any means unknown. The artist, therefore, who commits floral vagaries can plead justification.

Among the bewildering variety of designs shown us by Messrs. Tuck, the "Art Gem Panel Series" is one of the prettiest; the "Jewel Cards," also, would be very pretty but for the peculiar ornamentation whence its name is derived—the bejewelled stamens of the Narcissus, Forget-me-not, and others, do not look well in their acquired plumes. In other series of cards it was somewhat refreshing to come upon moderate-sized flowers of various sorts of Chrysanthemums, recent exhibitions having done their level best to obliterate all traces of other than enormous

blooms. Certain examples of the Orchid family do not appear to be accurate in several minor particulars, and the general execution is apparently the result of too much haste. Many of the folding cards contain some charming and accurately depicted bits of Holly or Ivy; and in other instances some highly artistic effects are produced with a flower or two of Azalea, Maidenhair Fern, and white and blue Marguerites, Honeysuckle, and spikes of grass. But is it beyond the art of the artist to give a faithful picture of the peculiar tints of the Maidenhair Fern? These often appear as if troubled with "rust."

Beyond these few faults, each of which may be easily rectified, we have nothing but praise for the general fidelity to Nature of the floral part of Christmas cards obligingly submitted for our inspection. To the keen competition of the day we owe much, but this is as a mere trifle when compared with the high standard at which the leading fine art publishers aim. *W. R.*

PLANT PORTRAITS.

Amorphophallus Eichleri, *Bot. Mag.*, t. 7091.—A curious little Aroid, much resembling the huge A. titanum, but a pigmy in comparison, the leaf-stalk being only 18 inches high, and the entire spadix only 6 inches, encircled by a spathe of 1½ inch.

Angræcum hyaloides, *Orchidophile*, November.—A pretty illustration of a pretty plant.

Cabomba aquatica, *Bot. Mag.*, t. 7090.—A very curious and interesting stove aquatic, with small yellow flowers, and leaves deeply cut like those of the Water Buttercup, the floating leaves being peltate and entire.

Chrysanthemum Stanstead Surprise, *Revue de l'Horticulture Belge*, December.

Clintonia Andrewsiana, *Bot. Mag.*, t. 7092.—A Liliaceous plant, with a creeping root-stalk, erect stem, 18 inches high, broad acute ribbed leaves and umbels of claret-purple, bell-shaped flowers, each about half an inch long.

Elæagnus argentia, *Gartenflora*, p. 626.

Fuchsia triphylla, *Revue de l'Horticulture Belge*, December.

Masdevallia chimæra, Rchb. f., *Gartenflora*, t. 1311.

Shepherdia argentea, *Gartenflora*, p. 626.

Thrinax excelsa, *Bot. Mag.*, t. 7088.—A handsome Fan Palm, supposed to be from Jamaica, which flowered in the Palm-house of the Royal Gardens, Kew.

Tigridia Pringlei, S. Watson, see *Gard. Chron.*, 1888, ii., p. 322, *Bot. Mag.*, t. 7089.—The outer segments are brilliant scarlet, otherwise it is very similar to the old T. pavonia. It is of Mexican origin, and very gorgeous in colouring. Kew.

Tulipa vitellina, *Garden*, December 7.

THE SMITHFIELD CLUB CATTLE SHOW.

On the occasion of the show of cattle of the above Society at Islington, and which commenced on the 9th inst., the various large seed houses throughout the country put in an appearance in great strength, as is usual on these occasions.

Gigantic Mangolds, Swedes, Kohl rabi, Cabbage, Carrots, and Turnips were displayed in daring devices over or alongside the stands containing farm and garden seeds and light goods generally. Some day London will be "startled," if that be possible any more, by hearing of a dozen of weakly Londoners being swept away by an avalanche of Mangold Wurzel, or a torrent of monstrous Champion Swedes, descending from the heights above Messrs. So and So's glass case.

There was much that would interest the farming mind, but little that appealed to the gardener, if we except Peas, and the collections of Potatos specially got up for view by careful selection and much face washing.

The great display of Messrs. Webb & Sons, of Stourbridge, was made very imposing with roots; and Swedes were shown whose produce per acre was 49½ tons, and Mangolds over 60 tons per acre. Some fine strains of old and new varieties of Peas for garden use were noted. We will specify these no further than to say that they were indicated by names which largely appeal to the imagination of the visitor—such were Monarch, Queen, Glory, Pride, Discovery, Renown, Benefactor, &c. Excellent work is done by this firm in raising new Potatos, Wheats, Barleys, and Oats, and in selecting improved forms of older varieties of roots, cereals, &c., many of which have become famous in the country.

A stand similar in extent, and in the number of articles displayed thereon, was that of Messrs. Sutton & Sons, Reading; and of special interest in it were the farm grasses shown as dried specimens in fruit, and also growing. An imposing base was given the stand by a row of 3 feet square iron tanks, such as are made use of in exporting seeds to hot climates.

Messrs. J. Carter & Co., High Holborn, London, had a very extensive show of farm roots, seeds, and growing grasses. Their White Cluster Oat appeared to be an acquisition, and the Prize Mammoth Wurzel deserves recording.

A good display, as regards bulk, was that of Messrs. Harrison, of Leicester. Their selected Intermediate Carrots and Beetroots were of great excellence.

In Mr. King's (Coggeshall) stand, which was smaller than those already named, was a very fine strain of garden Parsley, besides Gourds and Potatos.

Messrs. Oakshott & Millard have come out as large exhibitors, and their exhibit rivalled the best in the hall in the goodness of the subjects shown, and in its extent. In this stand, large grey wrinkled field Peas was shown, which had yielded last season 8 quarters per acre. In the dried state, the flavour of the pea was milder than that of any other field pea known to us. The origin of the pea is not known.

In the stand of Messrs. Dickson, Chester, we noted some local varieties of Apples, and samples of forest stuff of the usual planting size.

Mr. W. Ker, Dumfries, had a large show of Potatos, remarkable for being deficient in old established Scotch varieties. The Red Fluke shown by him is a likely looking tuber, and we assume from its name that it is a late variety; Bobbie Burns is another nice-looking tuber.

The Agricultural and Horticultural Company had their accustomed small stand in a corner of the gallery, showing largely feeding stuffs, artificial manures, and specimens of farm produce.

In looking through the dairy utensils exhibits, many cream separators were noted, but we failed to find any utensil for separating the water from the milk, and that it is which greatly interests the town dweller. Something of this kind, *in terrorem* to the milkman, is much required.

FORCING ASPARAGUS.

Where much of this vegetable is demanded, a large amount of time and labour is spent in producing it by the ordinary methods, that is, lifting the roots and forcing them on hotbeds or over hotwater-pipes. I have observed that this plan is the best, if only a moderate amount is required; but where a supply is asked for during half the year, I would not advocate the plan, it being too costly. Where space is the first consideration, and as is often the case a large supply of vegetables is always required, the length of time required by Asparagus beds before the plants are large enough to force, and the preparation of the ground and other details make it an expensive one. I have for some time adopted the old but economical plan of forcing the permanent beds, and get a supply of Asparagus from December till the time when beds in the open come in. I find the heads much finer and better flavoured than when lifted and forced in frames. We usually get a few very early dishes in December, by placing in a pit the roots of an old bed no longer wanted; but the daily supply is obtained from the forced beds, which are specially grown for that purpose. The beds are 4 feet wide, and the alleys between them, 2 feet 6 inches wide, and 4 feet deep, with pigeon-holed walls 4½ inch thick. Two rows of Asparagus are planted in each bed, which are in an open part devoted to forcing uses, and not in the part where other vegetables grow; straw, leaves, and other litter being unsightly in the garden proper.

We have very little manure at our command, and if it were otherwise, I would still not use it largely, but depend on tree leaves, of which we have a large supply. Stable manure heats much quicker than the leaves, but it does not retain the heat so long as is necessary for this purpose. We collect Beech and Oak leaves as early as possible after they have fallen, and commence to fill the alleys between the beds intended to be forced, ramming them as firmly as possible. As the leaves go down, we keep adding more, and making firm. The beds are a few inches lower than the top course of bricks forming the walls, and this method should be always followed out as if very early forcing is done. Some few inches of warm litter is advantageous on the beds. When the alleys are filled, we put sliding shutters over the beds, and cover these with long litter or bracken during frosty weather. Our early beds are got ready as soon as possible after the leaves fall, and the succession beds at the end of November. These beds have not been forced the previous year, but all have had new linings of fresh leaves as the longitudinal half of the beds not forced forms a succession to the forced bed, and come in a few weeks earlier than those in the open not covered in any way. We use no shutters for them, but only for the first and second lot of beds. All the plants in these beds are cut hard, and when in bearing they are cut over every day. The produce is of very good quality, and is large and abundant. Care is taken to cut off the seed before it ripens, so that the beds are kept free of self-sown plants; and after cutting is finished for the year, we mulch well with good rotten manure, and give the beds several times during the summer a thorough drenching with liquid manure. The alleys are not emptied of the old fermenting material till the new is ready to put into them, and this keeps the beds moist during the summer. The beds last under this treatment many years, and the first cost is the only serious one which has to be met. I have seen slates used, also large flat stones instead of bricks, and these answer well; and litter in the place of shutters, but whatever material is used, the quality of the Asparagus is much better than that obtained by lifting; and another advantage is that one gets rid of a lot of tree leaves that are useful when taken out, as they are then quite decayed, and the liquid manure which has reached them makes them useful manure for potting purposes. *Geo. Wythes, Syon House.*

THE JALAP PLANT.

This plant has been figured in several horticultural books under the name of Exogonium purga, but recent authorities have referred it to the genus Ipomœa. It is found growing wild in Mexico, particularly near Jalapa, and we learn from the *Kew Guide to the Museum of Economic Botany*, that about 180,000 lb. of Jalap are imported annually from Vera Cruz into the United Kingdom alone, statistics which show that the British public have a considerable demand for the drastic purgative. The medicinal properties of the plant are found in the large, fleshy, tuberous, perennial rootstock. The plant when grown out-of-doors, usually dies back to the root, and the growth is consequently late in forming, so that it rarely flowers well outside in this country. But when the plant is cultivated in a cool greenhouse it is not at all to be despised as a decorative subject, and its twining shoots render it very suitable for draping pillars, covering any bit of trellis-work, or as a rafter plant.

Like most other Ipomœas, it is of easy cultivation, but is most at home when planted out in a fairly rich well drained border, in a light position, and where it

can get plenty of air; under which conditions it will make sturdy floriferous growth, not liable to be affected with insect pests. The flowers produced on rather long peduncles, usually singly, are of a deep rosy purple colour, and midway in shape between a funnel and salver, the tube being about 2½ inches long, and the five-lobed limb about 2 inches across, and they are thrown well above the shiny, green, deeply cordate, acuminate foliage; and the only drawback which they have is, in common with other members of the genus, their short duration, lasting only from morning to night, but keeping up a good succession throughout the autumn months. After flowering has ceased, the plants should be trimmed back, and encouraged to make fresh growth early in the season. If grown in a too warm temperature, the plant has a tendency to become weedy. A cool airy greenhouse is the most suitable place. *F. R.*

ECCENTRIC BULBS.

There is a Latin proverb, circulated, if we remember aright, by one Horace, which tells us, that if we oust Nature with a pitchfork, she nevertheless takes the earliest opportunity to return. We were reminded of this by a bulb sent us by Mr. Jenkins, and which had accidentally been planted upside-down. Nothing baffled by this unusual state of things, the roots went up only just far enough to enable them to start fair on their downward course, while the shoot, in its turn, went down only till it was able to turn up (see fig. 104). In the case of the Scilla bulbs (fig. 105), a cut with the spade has induced the formation of a crowd of little bulbs. It will be remembered that Hyacinths are sometimes propagated in this way.

MORMODES BUCCINATOR.

Mormodes buccinator is described by Reichenbach as one of the most polymorphic Orchids of the whole world, and the statement appears to be a pretty correct one. No less than seven other species are referred to it as synonyms, including M. lentiginosa, Hook., *Bot. Mag.*, t. 4455. A fine specimen of one of the forms was recently sent to Kew, for determination, by T. B. White, Esq., of Arddarrock, N. B., and agrees with a drawing in Lindley's Herbarium called M. flavidum, Klotzsch, though the colour hardly agrees with that of the typical form. The segments were of a purplish-flesh colour, with longitudinal stripes of a darker shade, and the lip light green striped with purplish underneath. A specimen now in flower at Kew has the segments less acute, the flowers more crowded, and the colour more of a buff-yellow shade. The original type of the species had the segments pale green, and the lip ivory white. M. lentiginosa has the flowers speckled with purple on a paler ground. Between these forms there appears to be any number of intermediates. It is a native of the Venezuelan district, and appears to grow between 2,500 and 4,000 feet elevation, and possibly also at lower or higher altitudes. It appears to have been first introduced by Warscewicz. The species of Mormodes, like Catasetums, are rather difficult to grow satisfactorily, but several of them are well worthy of closer attention. *R. A. Rolfe.*

BARCOTE HOUSE.

This, the Berkshire home of T. West, Esq., is comparatively speaking, a new place, it being but fields some fourteen years ago, and was laid out under the direction of Lady Theodore Guest. The house is, unfortunately in some respects built in a hollow, the only good look-out being that to the north, which includes the Oxfordshire hills, and a view of the River Thames, which flows at the distance of about a mile from the mansion. The south side, looking towards the hill which is in close proximity to the house, is some 60 feet below the level of the kitchen garden. Since Mr. West bought the estate, he has, with the assistance of his gardener, Mr. Martin, very much added to its beauty.

Close to the old Bath coach road, stand the entrance gateway, and a lodge, the latter being occupied by Mr. Martin, who is gardener and bailiff. The ground around is prettily laid out with shrub and flower beds, and the lodge itself is covered with climbers. From this point a broad avenue with a row of Horse Chestnut trees on either hand, and

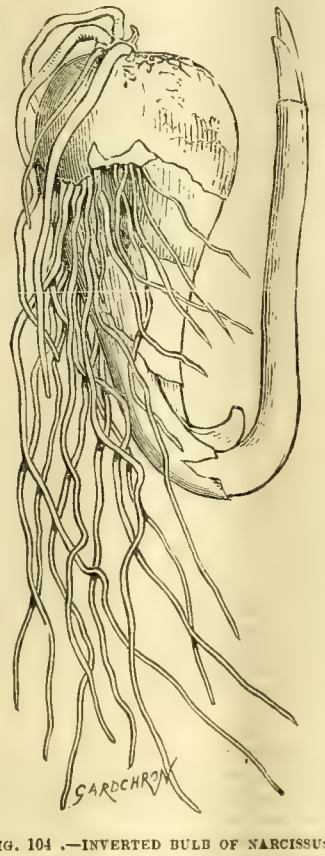


Fig. 104.—Inverted bulb of Narcissus.

about 20 feet high, leads to the residence. Clumps of forest adorn the grass land on both sides of the avenue, and some fine hedges are observed, which screen the outskirts of the kitchen garden, and are of ornament to the place, as well as being of great use as shelter. The glass-houses contained in one compartment some excellent specimens of Palms, Cycads,



Fig. 105.—Scilla bulb. Development of new bulbs as a consequence of injury.

and other foliage plants, used chiefly for decoration in the house. Another house contained a good batch of hybrid Rhododendrons, which were observed to be doing well, as also were many tuberous Begonias and Cinerarias. In the third house entered were specimen exhibition plants, including two fine ones of Dracæna Lindeni, and a few large pots of Eucharis amazonica in splendid condition.

Large Palms were noted in another house, the side stages being filled with flowering plants; and in this house was a grand pair of Blechnum corcovadense, a well-known species, but one that is seldom met with. A vinery contained Vines of Black Hamburgh, Black Alicante, and Lady Downes' Seedling, carrying a crop of useful bunches.

There is a small collection of well-grown hot-house Orchids, and a house is set apart for zonal Pelargoniums and tuberous Begonias. A collection of Cattleyas, Cypripediums, and other Orchids occupied a division to themselves. A fine batch of Pancratium fragrans was luxuriating in the early Cucumber-house. Some Dendrobium nobile, D. Wardianum, very good Vandas, Cœlogyne cristata, and the newer varieties and hybrids of Cypripedium are grown. A range of pits was well filled with Salvias, Primulas, Cyclamens, bedding plants, and Tomatos of which the last named were, at the time of my visit, carrying a good crop of fruit.

The kitchen garden—about 3 acres in extent—was well cropped with vegetables, and the walls are well furnished with trees. The south wall is well furnished with healthy Peach trees, which generally afford fair crops of fruit. On the east side of the garden is situated a large orchard, stocked with young trees, which should give good returns a few years hence. *J. H. Rose.*

HOME CORRESPONDENCE.

☞ *Correspondents will greatly oblige by sending to the Editor early intelligence of local events likely to be of interest to our readers, or of any matters which it is desirable to bring under the notice of horticulturists.*

Photographs or drawings, suitable for reproduction in these pages, of gardens, or of remarkable plants, flowers, trees, &c., are also solicited.

THE ROYAL HORTICULTURAL SOCIETY'S PROSPECTUS FOR 1890.—Whatever may be said now and then in relation to the management or other matters concerning the Royal Horticultural Society, it is certain that nothing which is at all disparaging can be said now with regard to its work. The prospectus for the coming year includes no fewer than sixteen ordinary meetings, one general meeting of Fellows, the great two days' show at the Temple, and three Conferences at Chiswick. Of course beyond these meetings, and hardly publishable, are the off meetings of the Fruit and Floral Committees at Chiswick through the year, so that there is enough work foreshadowed to satisfy the demands of the most exacting Whether the ordinary London meetings be held in the Drill Hall or not, seems now to be a matter of no considerable consequence. If the Society must have these gatherings in London, the Drill Hall, in spite of its bad light and somewhat ghastly structure, still answers very well; and as it is further certain that the ordinary meetings are not shows, and should not be regarded as such, the absence of the general public seems to be of less consequence. The chief display of the year is, of course, to be found at the Temple Gardens, and it is to be hoped that in the coming season the Fates will be propitious, and weather will be more pleasant and attractive. On such a site, right in the very midst of London, the show should attract 50,000 people at least whilst it is open. Somehow, so far the public attention has not been caught, and it may be worth asking whether it will not be possible to induce so distinguished a civic functionary as the Lord Mayor, or Lord Rosebery, failing any member of the Royal Family, to visit the show in state, and thus give to it some of that *éclat* which is so dear to the British people. If the tent space could be so expanded as to allow of the centre stages in the long tents being dispensed with, it would be a great gain, as, with so many floral attractions crowded close together, with even an ordinary attendance, locomotion soon becomes impossible. It is very well to desire a big attendance, but it is needful that ample room should be afforded for locomotion. The holding of three Conferences during the year at Chiswick is an ambitious effort. From a literary point of view, the prospect is almost appalling, as these three gatherings will probably produce some twenty-five to thirty papers, more or less; and it seems as if a score others would be furnished at the ordinary meetings; so that the Society's *Journal* will find no lack of copy for 1890. It is a pity the publication of these papers cannot follow more rapidly the reading, the issue of the

Journal being monthly, at least, as in that case the reading would not be so stale as it usually is to the Fellows. As we have no horticultural monthly in existence now, perhaps the Council may be encouraged to convert their very erratic *Journal* into a regular monthly magazine of horticulture, and thus establish it as not only a Society's but a recognised gardening publication. The present Hon. Secretary, the Rev. Mr. Wilks, seems to evidence such a capacity for work that to him the editing of a monthly magazine or journal would be but additional recreation. The alteration of the hour of meeting for the committees till 12 noon is a graceful concession to public opinion, and the further the Council follow in that track, the more thoroughly will it gain public confidence. In any case now, such is the energy shown in the direction of work, that it would be churlish to withhold a full expression of generous confidence and sympathy. *A. D.*

THE ROYAL HORTICULTURAL SOCIETY FLORAL COMMITTEES.—The vitality of the Society is undoubtedly centred in its committees, and therefore I greatly regret to see the latest improvement (?); a few more of such improvements will improve the Society out of existence altogether! I allude to the splitting up of the Floral Committee into two sections. This seems to me an entirely false move. An Orchid committee not only succeeds in greatly weakening, if not ruining the Floral Committee, but being in itself such a small body, and naturally tending therefore to cliqueism and exclusive dealing, or at any rate being open to the suspicion of such, is a very doubtful gain to Orchid lovers themselves. This alone would be a serious objection, even if the splitting-up ceased with the new Orchid Committee, but can we expect that it will do so? Certainly not. On the contrary, if it be necessary for Orchids to have a separate committee, a dozen other flowers immediately appear with equally strong claims to the same privilege. Roses, Dahlias, Hollyhocks, and many others, require further and further sub-divisions, until the unfortunate original committee will only be conspicuous by its absence. To take a parallel case, imagine what would become of the Fruit Committee if it began splitting itself into sections, one for Apples, another for Pears, a third for Melons, and so on. This sounds like a *reductio ad absurdum*, but it is a fair test. Were proof wanting, I could point to the deplorable condition of the Floral Committee on December 10, when at the Royal Horticultural Society meeting the Fruit Committee mustered in full force, while the emaciated floral one resembled nothing so much as Lady Butler's immortal "Roll Call!" This spirit of constant disintegration, if continued, will prove a source of endless trouble, and will end by entirely destroying the most useful part of the Royal Horticultural Society's work. *Charles Noble.* [This difficulty might be got over by considering the Orchid Committee as a section of the Floral Committee, and allowing it to assemble after the meeting of the general body. We believe the Orchid Committee was established by a complaisant Council entirely in deference to the wishes of the orchidists.]

CAMELLIA BUDS DROPPING.—Camellia plants which drop their buds cannot be healthy. It often happens, with healthy plants, that they not only produce a cluster of buds at the points of the shoots, but that the buds form in the axils of the leaves two or three tiers below the terminal buds. The best plan under such circumstances is to remove all the buds except the terminal one; particularly so, if fine flowers are a consideration. The terminal buds develop into much finer flowers when alone than when surrounded by a number of others. Camellia plants, when in hot dry positions, both indoors and out, are liable to be affected by scale, and in damp situations are subject to be coated with a glutinous black smut difficult to remove; but, if not washed off, stopping up the pores of the leaves. It is not surprising that under such conditions the plants should lose a portion of their leaves, that the scales of the buds should turn brown, and either drop off or produce very inferior flowers. I should consider such plants to be unhealthy, as all diseases affecting them are external, and the result of improper soil, situation, and treatment. It is a well-founded theory, that plants do not [?] absorb into their systems any element uncongenial to their growth, and that if plants are planted in improper soil, or placed in positions not adapted to them, they suffer accordingly. Plants are often under the care of persons who do not understand the treatment they require, or who, from lack of industry, neglect them. I ventured to say, when looking at a stock of plants in a lady's greenhouse, that they had suffered for want of water. I was immediately told, although the fact was very evident, that could not be the case, as she had attended to them herself! On another occasion, a professed gardener was planting Rose trees, and placing peat mould about their roots. I protested against such practice, but was immediately silenced by the man's rudeness. The questions were not worth discussing, but the results in both cases were very unsatisfactory. With Camellias, as with Roses and all other plants, proper soil, proper situations, and proper treatment are essential to success in their culture, and neither accident, incident, or circumstance carry any weight in argument to the contrary. *C. B. Saunders, Jersey.*

THE ORCHARD.—The time of year has now arrived when fruit trees in Orchards throughout the country should receive more or less attention — the matter of thinning out the branches of crowded trees and shortening back the strong-growing shoots of young trees, to promote a balance of growth in the same. Means should also be taken to rid the trees of moss and lichen, by scraping the stem and chief branches with a piece of wood, and dusting the smaller branches with quick-lime whilst damp. If the trees are too high to be reached in this way, they should be syringed with a solution of quick-lime in water; the liquid having been previously strained through a fine-meshed sieve. This done, the roots of any trees which have shown signs of debility during the last year or two should be seen to, opening a trench about 2 feet wide, and at from 2 to 3 feet deep, according to the nature of the soil, and at a like distance from the trunk, cutting all roots clean away at that distance, working some of the poor and, perhaps, sour soil from underneath with a five-tined fork and shovel, and replacing it with some the reverse of that indicated—such, for instance, as roadside parings and scrapings, mixed with decomposed vegetable matter from the rubbish-heap. Trees thus treated will amply repay for the trouble. *H. W. W.*

PEACH FUNGUS.—I am greatly obliged to Mr. Bishop for his kind offer of some of the composition he has found so effective against the fungus on his Peach trees, and which I would gladly accept, and hope that the same happy results may follow its application here, the fungus having been a source of great trouble. Judging, however, from his description, it appears to be a different species of parasite to that which each year shows itself on the foliage of Peaches and Nectarines under glass here, and which seems almost, if not quite, unknown to gardeners; and were it not so, I think we should have heard more about it ere this. The fungus that attacks the trees in these gardens does not appear before the leaves are fully grown, and then it begins to become evident in the form of brown specks on the under side of the leaf; these specks gradually increase in size till they form pustules which resemble the spores of Ferns, and they seem to ripen in the same way, and bursting and scattering their dust-like germs; and at about this period the leaves begin to fall, the wood and buds not having finished up. The fruit also shows spots and blotches, which show in the flesh also down to the stone; and most of the Peaches so stricken, fall before they are full grown. The trees remain otherwise healthy and all that one could wish. If we take up a tree out of the soil and plant it against an open wall, it does not become attacked, and if we lift another from the open to replace the one removed, that one takes the malady in the house in the first summer. Perhaps the Editor will be so good as to state how the sulphate of copper he mentioned some time ago may be used, whether syringed on, and if so, the proper strength to be safe. *J. Sheppard.* [See p. 50, Jan. 12, 1889. Ed.]

DAMPING OFF OF CHRYSANTHEMUMS.—Is this what is generally understood by damping? Or is it another disease to which the flower is subject? It has been very prevalent this year, and if a few growers would express their opinions, some good might result. This year I have experienced what damping, as it is called, means. I had about 500 plants in 10-inch pots, grown on the tall, large bloom system; the plants looked all through the summer most promising, and the buds were well-formed and large. They were housed about September 20, and for some time after that looked well and promising, but as the flowers began to expand, each petal began to shrivel and decay in both Japanese and incurved varieties alike, and this thing went on right through the house. My disappointment can be imagined. This liability of the flower seems to me to be a very serious drawback to Chrysanthemum growing. Growing fine strong plants is all very well, but to have rotten blooms for the finish is very disappointing. The difficulty with growers seems to me to be to know how to preserve the blooms until they are fully expanded. Mr. Molyneux in his book refers to this, and recommends several things, as plenty of air, also watering early in the morning, so as to keep the house as dry as possible, and fire-heat, should the weather be cold and damp. All these I have tried; but, as far as I can judge, they had no influence. I also let the plants become almost dry, but the flowers still damped, although air was given all round the sides of the house, and the top-lights stood open at all times when it was not raining. Now, it seems to me, if this disease is really damp [it is a fungus. Ed.], that these measures would have had some influence in checking its ravages. I believe the cause of this rotting, and of what is generally supposed to be damping, is that the plants are left out too long in the autumn, and that the buds are crippled long before they show colour. On September 17 last we had 7° of frost, and for several nights during the early part of September the glass stood at freezing-point. Some who have seen my plants think that overfeeding has spoilt the blooms. I generally grow a quantity of Madame C. Desgrange for indoor purposes; they are potted in the same soil, and have the same liquid manure; the buds are thinned, just the same as in the Exhibition Japanese and incurved, but never do the flowers damp, although the cultivation is the same, but that they are taken indoors in August, and therefore are quite uninjured by cold. *C. Cundy, Suffolk.*

SUTTON'S PERFECTION TOMATO.—This excellent Tomato has taken more prizes at exhibitions throughout the country during the last two years than any other. It is a strong grower and very productive, and the fruit is large, round, smooth, solid, of a rich crimson colour, and of excellent quality. Seed of Tomatos sown now in 60's, filled with light mould to within an inch of the top, covered lightly with fine soil and placed in beds, will germinate in about one week from time of sowing, when the pots may be placed on a shelf near the glass to ensure sturdy growth, and should be potted off singly into small pots as soon as they are furnished with a few true leaves, again placing them in heat. Shifting into large pots may be done as the plants require it, and using well crocked pots and a compost made up of three parts fibry loam and one of sifted horse-droppings and leaf-mould. The plants should be kept uniformly moist at the roots, and stood not too closely together, and in a house or pit where the temperature at night ranges from 50° to 55°, and 10° higher by day. Here the plants may remain till fruits are visible, when a higher day and night temperature may be afforded them. The side shoots should be pinched back to one joint, and the secondary growths stopped at the same point beyond each cluster of flowers. The latter should have a camel-hair pencil drawn over them about the middle of the day in order to secure a good "set," and a somewhat dry, warm, and airy atmosphere should be aimed at during the flowering season, but later in the season these conditions will not be necessary. Leaves and shoots should at all times, when in growth, be kept pinched in and thinned. *H. W. Ward.*

FIELD MICE.—In answer to the inquiry of your correspondent "W. E.," at page 704, on the above subject, I beg to offer a few remarks, and give him a description of a trap that is used beneficially on this estate. The trap is always set, and only requires to be examined once, or at most twice a week, and then only to take out the dead and bury them. On looking at my pocket-book, I find in one week of November, 1888, I destroyed 37 mice by one of these traps, and on one occasion as many as eight in one night. If a hundred traps of this kind were placed in parts where mice abound, the numbers of these troublesome vermin would be greatly lessened. The trap itself is a vessel of about a foot deep, and about the same width at the top, sunk in the ground to within an inch of the rim, and half filled with water, then two pieces of wood, each 8 inches long and 2 inches wide, with a sharp point for insertion in the ground, should be placed on each side of the vessel, and on the top of these a kind of wooden roller, with

sharp pointed skewers put through it and nearly touching the water, should be made—a kind of windlass. The bait should be put on the points of the skewers, and must be made of equal weight, so that at the least touch the roller will revolve, and throw any mouse attempting to eat the bait into the water. We place a piece of wire netting round the traps to keep cats and other animals from the baits. *A. Bishop, Westley Hall Gardens.*

—— In answer to "W. E." in your last issue, I would advise him first to find the whereabouts of the mice by laying dry peas about in wood, and then having discovered these, he should soak some peas in water till they are soft, and thread several on to a piece of tough thread; then drive into the soil two pegs about one foot apart, and to these tie the piece of thread at a height easily reached by the mice; lay a brick or two on the thread with its end touching the ground. The mice will nibble through the thread to devour the peas, and the brick will fall on them. Hundreds of such traps may be set in a day by a man. *W. Horne, Perry Hill, Cliffe.*

CHRYSANTHEMUM NOVELTIES.—It would be utterly useless to attempt exhibiting unless the old varieties (of no merit) are discarded each year, and the best of the new ones added. A careful selection of varieties, being in my opinion one of the most important points to be aimed at, if I send notes of some of the new varieties I saw recently at Mr. Owen's Nurseries, Maidenhead, and which are all worth a trial, the majority being what I call grand acquisitions to the exhibition tables. Japanese varieties: Mont Blanc (Waterer), Japanese incurved, with fine bold petal, the lower petals being deep lilac, with a nearly white centre, a very large flower. Violet Rose, fine large bold flower of a splendid shade of satiny rose; very promising. J. C. Price, florets very long and spreading, centre florets incurving, colour delicate flesh, plant of medium height. Gaspard Rozain, flowers very fine, of a pleasing shade of rosy lilac, centre white; a very promising show flower. Mrs. J. Clarke (syn. Volunteer), very fine variety, flesh coloured, with very large and spreading flowers. Mrs. E. W. Clark, this I consider one of the gems of the season, if not the very best, flowers of great size and substance, splendidly incurved, 10 inches across, colour same as Refulgence. W. W. Cowles, here we have another of the finest introductions of the season, and one all exhibitors should get, flowers very large, measuring over 9 inches across, of a beautiful Chestnut red colour. Countess Lytton, a sport from Meg Merrillies, primrose-yellow, lighter than R. Brocklebank, and quite distinct, seeming to be a little fuller flower. We Wa, an American seedling, a great improvement on Mrs. Wheeler, which flower it much resembles, but it has a stouter petal and much finer colour. Tusaka Takaki has very long wide spreading florets, colour a mixture of rosy-lilac and white, promises to make a good show variety. Robert Crawford has enormous flowers, quite a foot across, of a bright carmine-rose colour and splendid petal. Mrs. W. Clark, incurved Japanese, has enormous petals, some of them an inch in width, colour purple, silver reverse, fine dwarf grower. Thomas Cartledge, very fine indeed, colour a little lighter than Comte de Germiny, which it is much like; the outer petals are very long, wide, and spreading, the centre incurving exactly like that variety—this should make a grand flower for the show boards next year. Mrs. John Wannamaker is a large flower, fine silvery-pink, with broad petals, incurving beautifully. Sunset has flowers exceedingly fine and large, and is certainly one of the best varieties of the season; a free grower, its colour best described as resembling the setting sun, a very grand variety, and rightly named. Beauty of Castlewood possesses fine large flowers in the way of Mrs. Andrew Carnegie, colour not so dark, but finer in build and petal; this is a grand novelty. Gold, a large, very promising variety, heavy flowers, colour old gold. H. Waterer, a large flower, yellow, suffused with coppery-bronze in the centre. Magnet has large pendulous flowers, of a pleasing mixture of rose and lavender. Excellent is a beautiful soft pink, very large spreading flower; will make a grand show variety. Other Japanese of great promise are; Miss Esmeralda, fine crimson. Coronet, fine orange. Mrs. M. J. Thomas, sulphur-white. G. F. Moseman (syn. David Allan), chestnut red. Cythere, very rich purple. Mr. J. Brown, like Sunflower, but deeper in colour. Seduction, peach colour. George Atkinson, white, after the style of Condor. Mrs. Mencke, golden-yellow, with narrow petals. M. Razart, incurved amaranth, silvery reverse. Delie, bright cinnamon. Jean Bernat, chestnut-scarlet. Wm. Joice, purplish-rose. Mrs. J. C. Price, very fine yellow. L. Canning, pure large white; and General Jack, deep claret. There are several very fine seedlings (Japanese), here in various colours, which are about to be named after some of our best growers, and will probably be sent out next year. The best of the large Anemones are Mrs. Judge Benedict, white, with sulphur centre, flower very large and fine; E. C. Jukes, bright magenta shading off towards the centre to bright gold, very fine; and Mrs. C. Price, a fine large white variety. The best of the new incurved are Ada Spaulding, medium height, strong grower, flowers very large, larger even than any of the Queen family, colour light rose, lower petals much darker; should make a grand acqusition to the incurved class; Mrs. S. Coleman, a sport from Princess of Wales, and like it in all respects except colour, which is a lovely canary-yellow, beautifully flushed with bronze and rose, very fine; John Lambert, a sport from Lord Alcester, colour a creamy yellow, beautifully shaded rose, and much superior in all respects to Golden Queen or Emily Dale; and Hermes, a new incurved variety in the way of Lady Hardinge, colour silvery-lilac, and well worth a trial. *Visitor.*

DETERMINATION OF SEX.—In the *Gardeners' Chronicle* of April 24, 1886, p. 534, under the heading of "Oranges not Fruiting," it was stated that the Citrus trees in the Royal Kew Gardens bear mostly male flowers, with only a few hermaphrodite blooms, in which the ovary is well developed. In a recent publication, entitled the *Evolution of Sex*, by Professor Geddes and J. A. Thomson, it is emphatically asserted that underfeeding produces a preponderance of males, and over-feeding a preponderance of females, and that nutrition has a great deal to do with the determination of sex. I think there is in the Kew Gardens the opportunity of carrying on some very interesting biological experiments on Orange trees, to test this assertion. I do not know how the Citrus trees at Kew are treated, as to nourishment. If no particular attention is paid to them in this respect, the application of some of the modern fertilising manures, before the flowering season, might bring to light some interesting practical and useful hints, besides helping to clear a very important biological point. *E. Bonavia, M.D.*

[Melon and Cucumber growers might co-operate. Ed.]

EARLY FLOWERING CHRYSANTHEMUMS.—Certainly, in spite of Mr. Groom's assertion, I did read very carefully the valuable paper of Mr. Piercy, and also noticed the date of 1817. Just let us read it over again, it is well worth reading twice. "Some, says Mr. Piercy, were probably known and grown as early as 1817, for the London Horticultural Society offered a medal for early flowering Chrysanthemums in that year, but I do not know with what results." As to Mr. Affourtit, the formerly well-known nurseryman to whom I gave the credit of introducing the early Chrysanthemums, I said that he obtained them from France. But that Mr. Affourtit—alias Arc—was the first introducer of early Chrysanthemums into Holland, I believe. Perhaps Mr. Affourtit, who is a constant reader of the *Gardeners' Chronicle*, may be able to say a little more about this subject. *J. K. Budde, Edinburgh.*

A REMARKABLE EUCHARIS.—In the gardens of W. L. Barclay, Esq., at the Briars, Reigate, there is a fine specimen in flower of the popular Eucharis grandiflora. It has been grown from a single bulb during the course of the last ten years, and at present has a fine spread of foliage about 7½ feet through, and although the pot, an 18-inch one, is literally crammed with growth, yet the leaves are of very large size and good substance, the blade of most of them being over 7 inches broad. It has been flowering more or less since August, during which time many scapes and flowers have been cut, yet at present there are forty scapes, bearing six and seven flowers each of fine size and substance; indeed, so vigorous is the plant, that the natural order of things has been outgrown at least. On one fine flower, which we noted on an umbel of six, where instead of there being only the six perianth segments as usual, there are nine. Moreover, this duplication has not, as often is the case, been done at the expense of some other part of the flower. On the contrary, true to the original ternary character of the order, the stamens and corona are correspodingly increased. What a grand thing if a sport of this kind could be fixed! Mr. Bailey tells me that he never practices the enforced resting system by drying the plants off, as it is called, or subjecting them to extremes of heat and cold, but keeps them the whole year round in the same house, merely letting them have the usual fluctuation of temperature consequent on the different seasons of the year, and always practising a judicious system of feeding when the plants are in an actively growing state. The plant under notice has been growing for years in the same position, which is on the centre bed of a light, airy house, devoted chiefly to the cultivation of Lælias and Cattleyas, of which there are some very choice specimens, but so few of them at present are in flower, the Eucharis just now reigns supreme. *F. R.*

THORNS FOR SMOKY DISTRICTS.—In answer to a correspondent in your issue of the 7th inst., you state that the thorn is not to be recommended for planting in smoky districts, and as I think this to be a mistake, or at any rate a rather sweeping statement, and might do harm, I am the more anxious to direct your attention to it. The thorns are a very interesting tribe of shrubs or half-trees, and exhibit much variety in flower, fruit, and foliage, and as they are by no means particular as regards soil, providing it is well drained and pulverised previous to planting, they may be used either for ornament or utility in both town and country. I know of no city or town that suffers more from smoke than does Glasgow, yet there are many fine thorn bushes and trees to be found there, more especially at the western part of it and Kelvingrove Park, where some of the trees are remarkably fine specimens, and thrive admirably. It is a pity to see so many fine old thorn trees here and there throughout the country gradually dying off for want of a little timely cultural care. I know of no tree that responds more quickly to a good dressing of thoroughly decayed manure than the thorn, and as this is a good time for renovating such trees and applying the manure, planters and others should bestir themselves and save many an old veteran from decay that is at present rather an eyesore. *J. B. Webster.*

[The leaves are very apt to shrivel and wither, and are too often the prey of myriads of web-spinning caterpillars. We still are of opinion that the thorns are not suitable for the crowded part of towns. Ed.]

SOCIETIES.

ROYAL HORTICULTURAL.

Scientific Committee.

December 10.—D. Morris, Esq., in the chair. Present: Messrs. MacLachlan, Michael, Church, H. J. Veitch, Pascoe, Rev. W. Wilks, Drs. Müller and Masters.

Hybrid Rhododendron.—Mr. Veitch showed a hybrid Rhododendron between R. malayanum, a dwarf species, with the backs of the leaves densely scaly, and a hybrid form named Monarch. The new hybrid had luminous, orange-red flowers, and was almost exactly intermediate in all its characteristics between the two parents.

Deformed Carrots.—Mr. Veitch showed a large number of deformed Carrots, in which the crowns, instead of possessing a single central bud, had branched into several, while the ordinarily single tap root was also divided into several branches. The roots had been grown on a dry brashy soil, in which there was a large number of stones. During the hot dry weather in summer, the soil was so dry and hard that the roots had difficulty in penetrating it, and hence the energy of growth was directed rather to the formation of supernumerary crown buds and root branches than to the ordinary tap root. Professor Church corroborated the view that the branching of the roots was due to some mechanical obstacle in the soil. He had found not only that the relative quantity of nitrogenous compounds was in excess in such roots, but that the proportion of non-albuminoid nitrogen was greater, showing that the elaboration of nitrogen-compounds was less complete. Dr. Masters called attention to the presence of a slime fungus in some cases of this kind.

Seakale roots.—Some roots of Seakale, rotten in the centre and affected with fungus, were also exhibited. The Carrots and the Seakale were referred to Professor Marshall Ward for examination and report.

Effect of fog on Orchid blossoms.—Mr. Veitch showed flowers of Phalænopsis and Oncidium, showing how the fog affected blossoms which had not fully expanded, and arrested their further development, while those in a more fully developed condition were relatively uninjured. The specimens were referred to Dr. Scott for examination and report.

Insect Injurious to Sugar-cane in Barbados.—This was sent from the botanical station at Barbados, and was referred to Mr. Michael.

Production of Seedling Sugar-canes in Barbados.—Mention was made of the discovery of seedling Sugar-canes in Barbados, and to the interest attaching to them, as furnishing a possible means of obtaining new and improved varieties. It is singular that up to this time the variations in the Sugar-cane have been derived from sports or bud variations.

Dactylopius (Mealy Bug) in Egypt.—Mr. Morris read a letter addressed to the Director, Royal Gardens, Kew, by Mr. R. W. Blunfield:—

"I see in the August number of the *Kew Bulletin* an interesting account of the Icerya Purchasi, and its depredations in South Africa, California, &c. During the past four years our gardens at Alexandria have been invaded by a coccus, which threatens now to destroy all our trees, and is causing the greatest alarm here. I have taken the liberty of sending some specimens in a tin box. Our local savants do not seem satisfied as to its scientific name, though one has pronounced it to be the common mealy bug—D. adonidum—which I imagine to be a very much smaller insect. It first appeared about four years ago, when I noticed it in quantities on the under side of the leaves of a Banyan tree, but it has since spread with extraordinary rapidity, and one of our most beautiful gardens, full of tropical trees and shrubs, has been almost destroyed. A breeze sends the cottony bugs down in showers in all directions. It seems to attack almost any plant, but the leaves of the Ficus rubiginosa, and one or two other kinds of Fig seem too tough for it, and it will not touch them. It seems almost hopeless here for a few horticulturists to try to eradicate this formidable pest, while their indifferent neighbours are harbouring hotbeds of it, and there will have to be some strong measures taken by law to put it down."

The insect in question had been referred to Mr. Douglas, and was said to be an undescribed species of Dactylopius. Spraying with kerosene emulsion was recommended, but no remedy was likely to be effectual that was not carried out universally.

Excœcaria Fruits.—Mr. Morris exhibited fruit "shells" of this Euphorbiaceous plant received from Formosa, and which were tied together in necklace-like arrangements by silken strands, the work probably of the larva of some moth.

Canker in Apple Tree.—Mr. A. Dean exhibited a branch of Wellington Apple showing a well-marked illustration of canker in a tree grafted on the Crab stock, and planted on a subsoil of clay. The specimen was referred to Professor Marshall Ward for a report.

Action of Frost.—Mr. A. Dean sent a branch of Keddleston Pippin, showing the effect of frost in bursting the tissues and cracking the bark. The injury had probably been done some time previously, though only recently observed.

Fruit of Stephanotis.—From Mr. Denning came a seed-pod of this plant, and which is only occasionally produced in cultivation, owing probably to the absence of the insect adapted to fertilise its flowers.

Hæmanthus hirsutus.—A plant of this species producing flowers with the leaves, was exhibited by Mr. Froude, of the gardens, Chase Park, Enfield, who received a vote of thanks for the exhibit of this interesting plant. The flower-spike came from the apex of the bulb instead of, as usual, from the side.

Cone of Pinus Ayacuité.—Dr. Masters showed a fine cone of this Mexican species, grown in the Isle of Man, by Mr. Farrant, and made some comments on the species, which is somewhat tender in the neighbourhood of London. The committee was then dissolved, prior to reconstruction in the new year.

EDINBURGH BOTANICAL.

December 12.—The Society met this evening at 5, St. Andrew Square, when the President, Mr. R. Lindsay, gave his inaugural address on the genus Nepenthes. The subject, he said, had been suggested to him as being somewhat appropriate, from the fact that it is exactly a century since the first species was introduced into cultivation. There were at the present time in cultivation twenty species, and ten distinct and well-marked varieties that had been introduced from abroad, and at least thirty-eight named garden hybrids raised in this country and in America. The first species of Nepenthes introduced into this country was N. distillatoria, brought from Ceylon in 1789 by the Right Hon. Sir Joseph Banks. His (Mr. Lindsay's) recollections of Pitcher plants at the Edinburgh Botanic Garden was of two huge bushes trained in balloon fashion; one was N. phyllamphora, and the other N. lœvis; but they rarely produced pitchers. With improved means, however, of raising young plants from cuttings, and the advent of the earlier raised hybrids, there was no longer any lack of pitchers. After describing in detail the species at present in cultivation in the Royal Botanic Gardens, Edinburgh—eighteen in number, being only two short of the total number in this country—Mr. Lindsay mentioned the names of twenty not in cultivation. The improvements effected by hybridising were next noted, and a list of hybrid Nepenthes, with their parentage, was given. On this point, Mr. Lindsay made the remark that it would be interesting as an experiment to try whether pollen only of the unintroduced species would or would not prove fertile when sent home. The conclusion of the paper contained some practical remarks on the culture of Nepenthes.

The President referred to the loss the Society had sustained by the sudden death of Professor M'Nab, Dublin, and further mentioned that during the year the Society had lost several distinguished members, including the Rev. Miles Joseph Berkeley, one of the most eminent cryptogamic botanists; and the Rev. Mr. Leighton, the famous lichenologist. Eighteen new members had been added during the year, which was above the average. The Society now consisted of 442 members in all. Professor Balfour read the report of last year's excursion of the Scottish Alpine Botanic Club to the Braemar region. Dr. F. Buchanan White communicated a note on the occurrence of Salix lappnum (an Alpine Willow) in the neighbourhood of Edinburgh.

I. "On Temperature and Vegetation at the Royal Botanic Garden, Edinburgh," by Robert Lindsay, Curator.

The past month has been very favourable, having been mild for the season, and with extremely little rain or snow.

A good deal of frost occurred during the last week of the month, which checked the too rapid growth that was taking place on some plants. The thermometer was at or below the freezing point on nine mornings, indicating collectively 38° of frost for the month. The lowest readings were on the 17th, 24°; 26th, 26°; 27th, 26°; 28th, 24°; and 29th, 30°. The lowest day temperature was 36°, on the 27th; and the highest, 60°, on the 7th.

Rain fell on five days only during the month.

On the rock garden, eight species came into blossom, viz., Crocus Salzmanni, Crocus sp., Asia Minor; Iris Bakeriana, Androsace coronopifolia, Veronica ligustrifolia, Vinca acutiloba, Helleborus angustifolius, H. albicans.

Most outdoor plants are now in a resting state, still a few winter-flowering shrubs are in flower, such as Jasminum nudiflorum, Ivy, Laurustinus, and Veronica Andersoni. Fruit is remarkably scarce on shrubs generally.

II. "On Temperature and Vegetation at the Botanic Garden, Glasgow." By R. Bullen, Curator.

The mean temperature has been high for the month, considering that frost was registered on eleven nights. Of the 49° recorded as the total for the month, no less than 30° were registered on the nights of the 25th, 26th, and 27th; 19°, or 13° of frost, being the lowest reading during the night of the 26th. The day temperature was invariably high, the only low reading being 31° on the 26th, and after a light fall of snow. This cold wave came quite opportunely, for the buds of most hardy plants were far advanced for the season. It has been a splendid season for outdoor garden-work.

III. Exhibition by Mr. John Campbell, Ledaig, of plants growing there, in the vicinity of Oban, at this date, including Rhododendron Nobleanum, Hydrangea, Veronica Andersonii.

Exhibition of Tree Tomato Shrub, by Mr. Maxwell, of Munches, Dumfriesshire.

THE WEATHER.

THE PAST WEEK.

The following summary record of the weather for the week ending December 16, is furnished from the Meteorological Office:—

"The *weather* has been generally fairer than of late over the greater part of England and Scotland, but over Ireland and the western parts of Great Britain very unsettled conditions have prevailed, and frequent rain has fallen. Much mist or fog has been experienced at times in all parts of the kingdom.

"The *temperature* has been slightly above the mean in the 'Channel Islands' and 'England, S.W.,' and about equal to it in the east and west of Scotland, but in the other districts it has been 1° or 2° below. The highest of the maxima were recorded on the 16th, and ranged from 50° in the 'Midland Counties' to 55° in 'Scotland, N.,' and 56° in 'Scotland, E.' The lowest of the minima, which were registered either on the 12th or 13th, ranged from 16° to 22° in Scotland, from 22° to 24° in Ireland, and from 19° to 25° over England. In the 'Channel Islands' the lowest value was 32°.

"The *rainfall* has been less than the mean in all districts. Over all the more eastern parts of the kingdom the fall has been very slight.

"*Bright sunshine* has been more prevalent than it was last week in nearly all places, the percentage of the possible amount of duration having ranged from 10 in 'Scotland, N.,' and 17 in 'England, E.,' to 30 in 'Ireland, S.,' and to 48 in 'England, N.E.'"

[By the term "accumulated temperature" is meant a figure representing the aggregate amount, as well as the duration, of the excess or defect of temperature above or below 42° Fahr. for the period named; and this combined result is explained in Day-degrees—a "Day-degree" signifying 1° continued for twenty-four hours, or any other number of degrees for an inversely proportional number of hours.]

Districts.	Temperature. Above (+) or below (—) the Mean for the week ending December 16.	Temperature. Accumulated. Above 42°, for the Week.	Below 42°, for the Week.	Above 42° difference from Mean since Jan. 1, 1889.	Below 42° difference from Mean since Jan. 1, 1889.	Rainfall. More (+) or less (—) than Mean for Week.	No. of Rainy Days since Jan. 1, 1889.	Total fall since Jan. 1, 1889.	Bright Sun. Percentage of possible Duration for the week.	Percentage of possible Duration since Jan. 1, 1889.
		Day-deg.	Day-deg.	Day-deg.	Day-deg.	10ths Inch.		In.		
1	1 —	5	35	+ 218	— 46	4 —	234	40.1	10	22
2	0 av.	4	44	+ 15	— 40	5 —	189	25.1	28	28
3	1 —	0	37	— 15	— 42	5 —	176	23.7	48	26
4	2 —	1	38	— 37	+ 92	5 —	181	25.2	17	31
5	2 —	6	46	— 34	+ 34	5 —	168	25.9	24	28
6	2 —	9	38	+ 20	+ 52	4 —	167	24.9	21	30
7	0 av.	9	29	+ 56	— 96	4 —	199	40.1	22	30
8	2 —	6	31	+ 30	— 44	3 —	188	30.6	26	29
9	1 +	16	29	— 105	+ 100	4 —	188	34.1	27	34
10	1 —	11	30	+ 69	— 116	3 —	222	36.7	26	26
11	1 —	17	33	+ 11	— 54	1 —	199	35.2	30	32
12	1 +	32	2	+ 115	— 18	1 —	201	29.2	26	40

The districts indicated by number in the first column are the following:—

Principal Wheat-producing Districts—1, Scotland, N.; 2, Scotland, E.; 3, England, N.E.; 4, England, E.; 5, Midland Counties; 6, England, S.

Principal Grazing &c., Districts—7, Scotland, W.; 8, England, N.W.; 9, England, S.W.; 10, Ireland, N.; 11, Ireland, S.; 12, Channel Islands.

MARKETS.

COVENT GARDEN, December 19.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. Ed.]

Cut evergreens plentiful. Mistletoe plentiful, and well berried. Holly very scarce of berries. The price of cut flowers will be rather more next week, on account of Christmas decorations. *James Webber, Wholesale Apple Market.*

Fruit.—Average Wholesale Prices.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve ...	1 6-	7 0	Lemons, per case...	12 0-	25 0
— Nova Scotia, brl.	12 0-	25 0	Pine-apples, Eng., lb.	1 0-	1 6
Cobs, per 100 lb. ...	140 0-	...	— St. Michael, each	2 0-	6 0
Grapes, per lb. ...	1 0-	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0 9	—	Mushrooms, punnet	1 6	—
Beet, red, per dozen	1 0	2 0	Onions, per bunch	0 5	—
Carrots, per bunch	0 6	—	Parsley, per bunch	0 4	—
Cauliflowers, each	0 3	—	Rhubarb, per bundle	0 6	—
Celery, per bundle	1 6	2 0	Seakale, punnet	2 6	—
Cucumbers, each	1 0	1 6	Shallots, per lb.	0 6	—
Endive, per dozen	1 6	—	Spinach, per bushel	3 6	—
Herbs, per bunch	0 4	—	Sprue, per bundle	1 6	—
Leeks, per bunch	0 3	—	Brussel Sprouts, pr lb.	0 3	—
Lettuces, per dozen	1 6	—	Tomatos, per lb.	1 0	—
Mustard and Cress, punnet	0 4	—	Turnips, per bunch, new	0 5	—

POTATOS: — Market firm. For best samples, 90s. to 100s.; medium, 60s. to 70s.; and ordinary to inferior, 40s. to 50s. per ton.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ericas, various, doz.	8 0	24 0
Aspidistria, doz.	18 0	42 0	Evergreens, in var., per dozen	6 0	24 0
— specimen plants, each	7 6	10 6	Ferns, in var., per dozen	4 0	18 0
Azaleas, various, each	2 6	3 6	Ficus elastica, each	1 6	7 0
Begonias, dozen	4 0	12 0	Foliage plants, various, each	2 0	10 0
Christmas trees, doz.	4 0	24 0	Hyacinths, p. doz	9 0	12 0
— — extra size, each	5 0	21 0	Lily of the Valley, p. doz. pots	24 0	42 0
Chrysanth, dozen	6 0	15 0	Marguerites, doz.	6 0	12 0
— extra large, each	2 0	5 0	Palms in var., each	2 6	21 0
Cyclamen, dozen	15 0	24 0	Pelargoniums, scarlet, per dozen	6 0	8 0
Cyperus, per dozen	4 0	12 0	Roman Hyacinths, per dozen pots	9 0	12 0
Dracæna terminalis, per dozen	30 0	60 0	Solanums, per dozen	6 0	12 0
— viridis, per doz.	12 0	24 0	Tulips, doz. pots	8 0	10 0
Epiphyllum, per doz.	12 0	18 0			
Euonymus, in var., per dozen	6 0	18 0			

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Narciss., paper-white,		
Azaleas, doz. sprays	0 9	1 6	French, doz. bun.	4 0	8 0
Bouvardias, per bun.	0 8	1 0	— Eng., doz. sprays	1 0	1 6
Calla æthiopica, 12 bl.	4 0	8 0	Pelargoniums, 12 spr.	0 9	1 6
Camellias, white, doz.	2 0	4 0	— scarlet, 12 spr.	0 9	1 3
— various, per doz.	1 0	2 0	Primulas, double, 12 sprays	1 0	1 6
Carnations, 12 blms.	1 0	2 0	Roman Hyacinths,		
Chrysanth., 12 bun.	4 0	12 0	Eng., doz. sprays	0 9	1 6
Chrysanth., 12 blms.	0 6	3 0	Roses, Tea, per doz.	1 0	3 0
Cyclamens, 12 blms.	0 4	0 9	— coloured, dozen.	2 0	4 0
Eucharis, per dozen	3 0	4 0	— French, dozen	1 0	2 0
Gardenias, 12 blooms	6 0	12 0	— red, per dozen	1 0	2 0
Heliotropes, 12 spr.	0 6	1 0	— Safrano, dozen	1 0	1 6
Lilac, white, Fr., bun.	6 0	8 0	Spirea, doz. sprays	1 0	1 6
Lilium, var., 12 bl.	2 0	6 0	Stephanotis, 12 spr.	9 0	12 0
Lily of the Valley, doz. sprays	6 0	9 0	Tuberoses, 12 blms.	1 6	2 0
Maiden Hair Fern, 12 bun.	4 0	9 0	Tulips, doz. blooms	1 0	2 0
Mignonette, 12 bun.	2 0	4 0	Violets, 12 bun	1 0	2 0
— French, per bun.	1 6	2 0	— French, bunch	1 6	2 6
Marguerites, 12 bun.	3 0	6 0	— Parma, 12 bun.	4 0	6 0

ORCHID-BLOOM in variety.

SEEDS.

LONDON: *Dec.* 18.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report to-day's market thinly attended, with scarcely any business doing. Red Cloverseed for the moment is dull and drooping. Alsike, White Clover, and Trefoil are devoid of interest. The same must be said of grasses. Winter Tares keep firm. Full prices are asked for blue Peas. For Mustard and Rapeseed the market is steady. Birdseeds, though very cheap, attract but little attention. Feeding Linseed tends downwards.

CORN.

Averages.—Official statement showing the average price of British corn, imperial measure, for the week ended December 14:—Wheat, 30*s.* 2*d.*; Barley, 29*s.* 10*d.*; Oats, 17*s.* 11*d.* For the corresponding period in 1888:—Wheat, 30*s.* 10*d.*; Barley, 27*s.* 1*d.*; Oats, 16*s.* 10*d.*

CHRISTMAS FAT CATTLE.

The show of prime stock at Monday's market, though smaller than in some previous years, was all that could be expected in merit and magnitude; all the points of merit were well represented throughout the pure breeds and crosses. The Scotch were to the front in strength of numbers, and nothing behind in merit. The English senders held a good position. Compared with last year, the numbers showed a falling off of 1420 head—the supplies comprising a total of 5080 head, of which 2500 head were from Scotland, and the remainder from the various English districts, excepting about 200 head from Ireland. Trade was dull and dragging, the tone depressed. The best Scots sold currently at 5*s.*, and in some exceptional cases at 5*s.* 2*d.* per 8 lb.; primest Devons about the same; Norfolks at 4*s.* 8*d.* to 4*s.* 10*d.*; Shorthorns generally at 4*s.* 6*d.* to 4*s.* 8*d.*; sheep supplies more powerfully the Down breeds, and as to condition and quality the supply generally was good. Trade was not fast, but prices ruled higher—10 to 9 stone Downs 6*s.* 4*d.* to 6*s.* 8*d.*; Hampshire 5*s.* 10*d.* to 6*s.*; white-faced wethers, 5*s.* 8*d.* to 5*s.* 10*d.*; ewes, 5*s.* to 5*s.* 6*d.* per 8lb., sinking the offal. Doubtless, had the weather been better the show all round would have been more effective, and prices somewhat enhanced thereby.

FRUITS AND VEGETABLES.

SPITALFIELDS: *Dec.* 18.—American Apples, 15*s.* to 21*s.* per barrel; English Apples, 3*s.* to 7*s.* per bushel; Savoys, 2*s.* to 4*s.* per tally; Cabbages, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Greens, bunch, 3*s.* to 5*s.* do.; Curly Kale, 9*d.* to 1*s.* per bushel: Seakale, 1*s.* to 1*s.* 6*d.* per punnet; Spinach, 1*s.* to 1*s.* 6*d.* per bushel; Brussels Sprouts, 9*d.* to 1*s.* 6*d.* per half-sieve; Turnip-tops, 1*s.* to 1*s.* 6*d.* per sack; Turnips, 20*s.* to 37*s.* per ton; Carrots, household, 30*s.* to 38*s.* do.; Mangels, 16*s.* to 18*s.* do.; Sprouting Brocoli, 1*s.* to 1*s.* 6*d.* per sack; ditto, 6*d.* to 9*d.* per sieve; Cauliflowers, 5*s.* to 7*s.* 6*d.* per tally; Parsnips, 4*d.* to 8*d.* per score; forced Rhubarb, 3*s.* to 5*s.* per dozen bunches; Celery, 4*s.* to 8*s.* do.; Horseradish, 13*s.* to 16*s.* do.; mixed herbs, 2*s.* to 2*s.* 6*d.* do.; Parsley, 1*s.* 6*d.* to 2*s.* 6*d.* do.; Beetroots, 3*d.* to 5*d.* per dozen; Endive, 1*s.* to 1*s.* 6*d.* do.; Leeks, 1*s.* to 1*s.* 6*d.* do.; Mustard and Cress, 1*s.* to 2*s.* per dozen baskets; English Onions, 9*s.* to 10*s.* per cwt.; Spanish Onions, 7*s.* to 8*s.* per box; Dutch Onions, 6*s.* 6*d.* to 7*s.* per bag of 110 lb.; Belgian Onions, 6*s.* to 6*s.* 6*d.* do.

STRATFORD: *Dec.* 17.—Cabbages, 1*s.* to 2*s.* 6*d.* per tally; Savoys, 2*s.* 6*d.* to 4*s.* do.; Greens, 3*s.* to 6*s.* do.; Cauliflowers, 3*s.* to 7*s.* do.; Turnips, 20*s.* to 30*s.* per ton; Carrots (household), 30*s.* to 40*s.* do.; do. (cattle feeding), 20*s.* to 24*s.* do.; Mangels, 14*s.* to 17*s.* do.; Swedes, 16*s.* to 21*s.* do.; Onions, English, 170*s.* to 190*s.* do.; do. Dutch, 6*s.* to 7*s.* per bag; Apples, English, 3*s.* 6*d.* to 7*s.* per bushel; Brussels Sprouts, 9*d.* to 1*s.* 3*d.* per half-sieve; ditto, 2*s.* to 2*s.* 5*d.* per flat; Celery, 3*s.* to 8*s.* per dozen bundles; Chestnuts, 10*s.* to 14*s.* per sack.

POTATOS.

BOROUGH AND SPITALFIELDS: *Dec.* 17.—Supplies continue large, but the bulk of them not up to good selling quality, and to move these easier rates have to be conceded; the small portion of the best samples continue to sell steadily. Regents, 40*s.* to 85*s.*; Hebrons, 45*s.* to 105*s.*; Magnum Bonums, 45*s.* to 90*s.*; Imperators, 40*s.* to 70*s.* per ton.

SPITALFIELDS: *Dec.* 18.—Quotations; Magnums, 45*s.* to 60*s.*; Regents, 60*s.* to 70*s.*; Imperators, 50*s.* to 65*s.*; Hebrons, 50*s.* to 65*s.*; Early Rose, 40*s.* to 50*s.* per ton.

STRATFORD: *Dec.* 17.—Quotations: Scotch Magnums, 53*s.* to 70*s.*; Scotch Regents, 60*s.* to 70*s.*; English do., light, 50*s.* to 65*s.*; do., dark, 45*s.* to 58*s.* per ton.

HAY.

Averages.—The following are the averages of the prices obtained at the various metropolitan markets during the past week:—Clover, prime 78*s.* to 88*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 94*s.*; inferior, 26*s.* to 50*s.* Straw, 20*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

☞ CORRESPONDENTS sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect in all cases to obtain an answer to their enquiries in the current week.

CATTLEYA GROWTHS DYING OFF: *Nil Desperandum.* The injury to Cattleya bulbs might have been caused by condensed moisture falling on them by sudden lowering of the temperature, probably during the night. This would be more likely to affect them if they stand on a close stage, and not on an open wood-work one. It is, however, just possible that the injury might have been commenced by atmospheric influence during a thunderstorm. Your treatment seems correct in all points.

CRUDE SEWAGE FOR VINE BORDER: *J. P.* By no means put this stuff on your Vine border at once, but make a compost heap of the 4 tons of slush, using absorbent materials like dryish loam, burnt earth, charcoal dust, but not fresh lime, as that substance would dissipate, by rapid decomposition, the little amount of ammonia there is in the sewage. After this heap has laid untouched for twelve months, turn it over once or twice, and it will then be ready for the Vines, or anything else you may have requiring stimulation.

DESFONTAINIA SPINOSA: *J. H.*—Cuttings of ripe young growth, with a heel of old wood, may be taken in September and placed in pots of sandy loam, with a layer of sand on the top, watered, and when dry, covered with a bell-glass and put into a cold pit, or the greenhouse, and in part where the air is still and warm, placing something before the pot to shade the cuttings from the sun. These cuttings will make a callus, or even small roots, by the winter, if watering and airing have been carefully done, and they may be put into a very mild, declining warm bed, in March, to hasten rooting. When sufficiently rooted pot them off singly into 60's, keeping them in pots for the first year. Cuttings may be taken in the spring just as growth commences on plants outside, or better still, from a plant which has been in a pot from the previous year, and which has started early in the greenhouse. Such cuttings may be treated like the others, excepting that they may be put at once into a mild warm bed, and need no bell-glass if the frame is not much ventilated. Camellias, Fabiana imbricata, Deutzias, and many other hardy and and half hardy shrubs will strike readily in either of the above methods.

GRAFTING CLEMATIS, &C: *C. B.* The information you seek is obtainable in *The Clematis as a Garden Flower*, by T. Moore (published by G. Jackman & Son, Nurseries, Woking, Surrey).

INSECTS—CATTLEYA: *J. W.* The object represented in your sketch is the Cocoon of a Brazilian moth, figured in Newman's *Entomological Mayazine. I. O. W.*

LAPAGERIA, PROPAGATION OF: *X.* Prepare deep pans, or boxes, with sandy peat and loam, and do not over-drain these. Make the soil level and firm, and peg down some long shoots in straight lines, and at each alternate joint, the wood being slightly cut through and slit, as in layering Carnations. Soil may then be placed to a depth of 1 inch over the parts pegged down, but not over other parts of the shoot, and every leaf possible should be preserved. This work may be done early in the spring, and the layers will take root during the summer. The temperature may be that of the house in which the parent plant stands. Watering, and keeping the soil in a healthy condition, are the only essential operations until rooting takes place; but as soon as a good mass of roots has formed at the layered joints, the shoot may be cut into pieces, the now rooted plants taken up with a trowel and potted, keeping them close for a week or ten days. Lapagerias grow well from seed, and excellent forms are sometimes obtained in this way.

NAMES OF PLANTS: *E. J. P.* 8, Cheilanthes micromera; 9, C. alabamensis. The Nephrolepis rufescens tripinnatifida, the Selaginella, all the Adiantums, and Asplenium fœniculaceum, are safest in a cool stove temperature; Cyrtomium caryotideum, and Aspidium (not Asplenium) mucronatum, do well in a cold greenhouse. None of the varieties you mention are British, except Adiantum capillus veneris.—*W. W.* 1, Juniperus excelsa; 2, Daphne odorata; 3, Illicium (send flowers).—*H. M.* 1, Forsythia viridissima, so far as can be told without flowers; 2, next week; 3, Juniperus sp., next week; 4, Thuiopsis borealis *alias* Nutkaensis; 5, Taxodium distichum; 6, Cupressus Lawsoniana var.—*W. L.* Cattleya Gaskelliana—so far as can be judged from the flower sent.—*A. Streeter.* Cymbidium ensifolium.—*Camjee.* Dendrobium aureum, Adiantum cuneatum var.; one of the many seedling forms of Thuia (Biota) orientalis.

PIT HEATED WITH EIGHT ROWS OF PIPES: *Thomas Houghin.* The proposed mode of heating the pit would fit it admirably for Melons, Cucumbers, &c., if you have the pipes at the eaves made of smaller diameter than the rest, for these being so much higher than the others they will get unduly warm, and would certainly favour the production of red-spider on those portions of the plants near them. A bed of rubble over the bottom heat-pipes would be better than a tank, the soil over it being kept in a moister, healthier state. The expense of a

tank is considerable, besides its liability to become leaky. If the space under the bed be not filled up either rubble or a tank, the soil of the bed would still get sufficiently warmed; moreover, there is an advantage in having the space unoccupied, as, by having one or two small iron doors in the wall, the excess of heat can be allowed to escape into house, which is an advantage in very hard weather; besides, the plan admits of water being thrown in under the bed, so as to secure moist air in the chamber. There ought to be a valve easily reached placed in the flow-pipe for bottom-heat, and in that for top-heat, so that the circulation may be regulated in any desired manner.

Primrose Roots: *C. W. D.* Our suggestion is, that this is a case of "Root-pruning." The simple fibrous root has been injured by insects, or in some other way, and has produced a tuft of fine fibrils in consequence.

Seedling Apple shown at the Royal Horticultural Society Meeting on December 10, by Mr. C. Ross: *C. R.*. The exhibitor desires us to state that the Apple shown by him was from a tree which is a seedling of the Scarlet Nonpareil, and was named Atalanta. The Fruit Committee considered it to be worthy of a first class certificate, but decided to wait till it could be shown next year before awarding it.

CATALOGUES RECEIVED.

C. Fidler, Royal Berkshire Seed Stores, Reading—Vegetable Seeds and Potatos.
Pietz & Roes, Erfurt, Prussia—Trade Seed List.
C. Platz & Son, Erfurt, Prussia—Trade Seed List.
Little & Ballantyne, Carlisle—Trees.
Wm. Fell & Co., Hexham—Forest Trees.
Sutton & Sons, Reading—Amateurs' Guide.
J. Carter & Co., 237, 238, High Holborn, London, W.C.—Seeds.

Communications Received.—J. C. (next week).—P. N.—H. Correvon, Geneva.—S. B. B.—T. G. R.—Professor Sargent, Brookline.—T. M., Philadelphia.—C. W. D.—Professor Church.—F. H. F.—A. D. F. C.—E. S. D.—M. Paillet.—J. B.—P. Niel Frazer.—T. Coomber.—Secretary Board of Agriculture.—G. Hansen, Jackson, California.—Dr. Deck, Merseburgh.—Dr. D., Berlin.—Ch. de B. Lierre.—Professor Church.—J. W.—E. A. M.—J. Middeton.—E. Lazenby.—T. I. R. C.—J. F. Mould.—E. Mawley (thanks).—W. S.—E. M.—Royal Horticultural Society, Ireland.—J. B.—Sir C. Strickland.—T. C.—J. G. B.—A. K.—A. E.—J. Webster.—W. T.—J. O'B.—Rev. W. Tuckwell.—A. B. S.—Ed. Gilman.—E. W.—R. D.—W. C.—T. W.

San Francisco.—The parks in this city are, under the direction of Mr. McLaren, assuming an importance proportionate to that of the city, and have gained the approval of so competent a judge as Mr. Olmsled. The entrance to Golden Gate Park, which comprises 1040 acres, is 2 miles from the New City Hall. In 1870 the State Legislature passed an Act authorising the issue of bonds for the purchase of outside city lands, and provided for the construction and maintenance of this park. The work was pushed on with vigour, though under many difficulties. Where the park now exists was originally a series of sand dunes, apparently impossible of reclamation, and scattered here and there, small growths of Scrub Oak, a few Willow trees, and occasionally a patch of grass or a few shrubs of Lupin. The transformation has been almost wonderful, and is worthy of observation. The Sand Hills in the park are in a fair way to be entirely reclaimed by the free use of Arundo arenaria and wild Lupin. The former is a sea bent grass, being a native of Holland and other coast countries of Europe, though a large quantity of it is propagated in the park; and the Lupin is indigenous to the Californian coast. The grass is raised in the park, both from roots and seed, the former principally. The grass, having a strong, creeping perennial root, soon prepares the way for the promiscuous planting of the Lupin; and the sand, having been thus controlled, enough of the salt having been absorbed, the planting of Pinus insignis and P. maritima Tamarix, and other hardy trees, the Leptospermum and like shrubs, completes the reclamation. As this work is being steadily prosecuted, it is only a question of time when the west end of the park, adjoining the ocean, will be in the same state of ornamentation as that portion towards the east, which is now so attractive.

Notice to Advertisers.

THE GARDENERS' CHRONICLE

FOR

JANUARY 4, 1890,

WILL CONTAIN AS A

SUPPLEMENT

A

Sheet Almanac.

As a large EXTRA circulation of this Number is guaranteed, it will be a very valuable medium for Advertisements.

Advertisers desirous of securing space in this number are requested to communicate not later than JANUARY 1, *with the Publisher.*

W. RICHARDS,

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LONDON, W.C.

PROTECT YOUR PLANTS.

"Frigi Domo"

REGISTERED TRADE MARK

CANVAS.

From Damp, Frost, and Cold Winds. A perfect Non-Conductor of heat, keeping wherever it is applied an even temperature.

To be obtained of all Nurserymen and Seedsmen.

NOTICE.

The words "Frigi Domo" are registered as a Trade Mark, and in two recent actions of Benjamin Edgington, Limited, Plaintiffs, *v.* John Edgington & Co., Defendants, and Benjamin Edgington, Limited, Plaintiffs, *v.* Osman & Co., Defendants, judgments have been obtained against the Defendants for a Perpetual Injunction, restraining them from using the words "Frigi Domo" as a Trade Mark for any material intended to be used for Horticultural or similar purposes not manufactured by or for the Plaintiffs or selected by them, and the Defendants, John Edgington & Co., and Osman & Co., were ordered to pay Damages and Costs.

BENJAMIN EDGINGTON
(LIMITED),

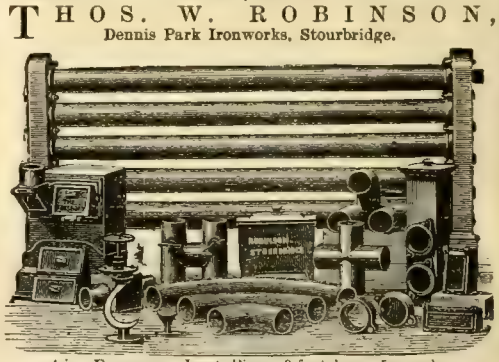
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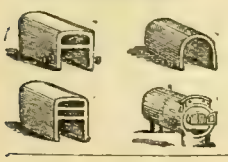
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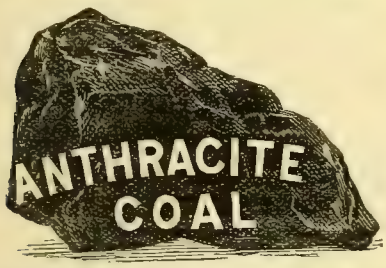
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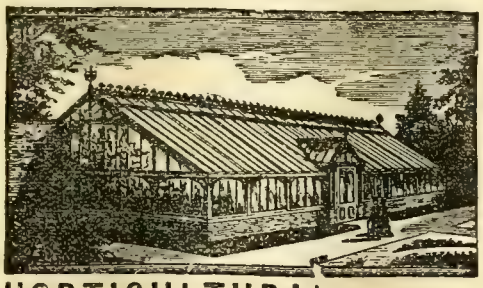
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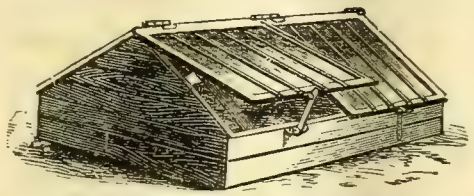
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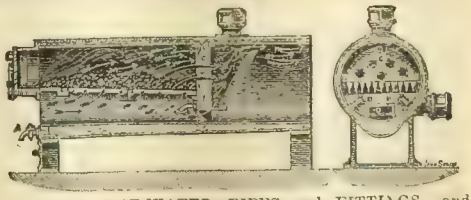


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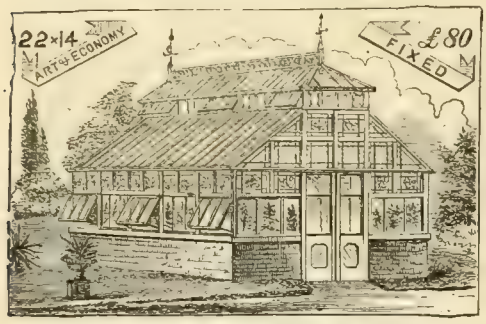
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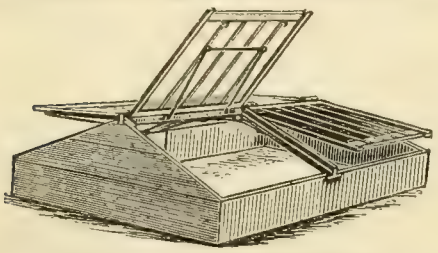
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Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 21, 1889. Agent for Manchester—JOHN HEYWOOD.

The Gardeners' Chronicle

ESTABLISHED 1841.
No. 2557.

No. 157.—Vol. VI. {Third Series.} SATURDAY, DECEMBER 28, 1889. [Regt. as a Newspaper. {Price 3d. Post-Free, 3½d.

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Also 5000 LILIUM SPECIOSUM ALBUM RUBRUM, EXIMIUM, BATEMANIÆ, KRAMERI, and ELEGANS.

MESSRS. PROTHEROE AND MORRIS will SELL the above by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on WEDNESDAY NEXT, January 1, at half-past 12 o'Clock.

On view morning of Sale, and Catalogues had.

Friday Next.

Important Sale of Established and other ORCHIDS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at their Central Sale Rooms, 67 and 68, Cheapside, London, E.C., on FRIDAY NEXT, January 3, at half-past 12 o'Clock precisely, 100 lots of CATTLEYAS and other ORCHIDS, mostly unflowered, from Mr. G. White, for Sale without reserve. Also a large quantity of various ESTABLISHED ORCHIDS, MEXICAN ORCHIDS, &c.

On view morning of Sale, and Catalogues had.

Friday Next.

ODONTOGLOSSUM ALEXANDRÆ, beautiful variety, heavily blotched with deep claret markings.

For sale without reserve.

MESSRS. PROTHEROE AND MORRIS will include the above plant in their SALE of ORCHIDS on FRIDAY NEXT, January 3, 1890.

On view morning of Sale, and Catalogues had.

Nursery Stock Sales from Sample.

MESSRS. PROTHEROE AND MORRIS desire to announce that they purpose re-commencing their SAMPLE SALES on THURSDAY, January 9, for which they will be glad to RECEIVE NOTICE OF ENTRIES AS EARLY AS POSSIBLE.

Auction and Estate Offices, 67 and 68, Cheapside, E.C.

Mount View, Sheffield.

The VALUABLE COLLECTION of upwards of 1500 ESTABLISHED ORCHIDS formed by the late David Ward, Esq., J.P. The plants are in the best possible condition, and the collection is one of the finest in the district, and includes Specimens from several well-known Collections.

MESSRS. WILLIAM BUSH AND SON, respectfully give notice that they are favoured with instructions from the executors to SELL by AUCTION on the Premises as above, about the MIDDLE of JANUARY NEXT.

Further particulars will be given in future advertisements. Catalogues are in preparation. May be viewed by order from the Auctioneers. Auctioneers' Offices and Sale Rooms, 2 and 3, East Parade, Sheffield.

WANTED, in a good Market Town, a thorough genuine SEED BUSINESS.

Address, with full particulars, to E. S., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

Cirencester, Gloucestershire.

FOR SALE, by Private Treaty, the BUSINESS of a FLORIST, which has been carried on by the same Proprietor for the last twenty years in the above thriving Market Town, together with two Freehold Gardens, with Greenhouses, Forcing Pits, Potting Sheds, &c., thereon, in close proximity to the Market Place. Retiring from business sole cause of leaving. For price and particulars apply to JOB SAUNDERS, Park Street.

Florida.

SMALL ESTATE for SALE.
Apply, CURATOR, Botanic Garden, Glasgow.

To Nurserymen and Others.

TO LET, on a Yearly Tenancy, or on Lease, the PRIORY NURSERY, Warwick; Dwelling-house, six Glasshouses, Frames, and about 3 acres of Land.
Apply to ROBT. GREENFIELD, Priory Road, Warwick.

ORCHIDS.

THE LIVERPOOL HORTICULTURAL CO.

(JOHN COWAN), Limited,

Have an immense stock, to which they are constantly adding, and all are offered at the lowest possible prices. LISTS with Prices and particulars post-free on application to the Company,

THE VINEYARD AND NURSERIES,
GARSTON, near LIVERPOOL.

CHEAP TO CLEAR.—HYACINTHS, mixed bedders, 5*s.* per 100; TULIPS, Double, Duc Van Thol, 15*s.*; Duke of York, 25*s.*; Blanc Border, 25*s.*; Yellow Rose, 25*s.*; Gesneriana, 25*s.*; Parrot, mixed, 25*s.*; Parrot, Constantine, 25*s.*; Parrot, Perfecta, 25*s.*; Imperator Alexander, 25*s.*; Rose de Peloyne, 25*s.*; Bonaparte, 25*s.*; Single and Double, mixed, 15*s.*; Bizarres Byblœum, 25*s.*; Isabella, 25*s.* per 1000. NARCISS, Paper White, 25*s.*; Double Roman, 25*s.* per 1000. LILY OF THE VALLEY CROWNS, first size, 26*s.* per 1000. TUBEROSES, Excelsior Pearl, 70*s.*; ditto, Double, 70*s.* per 1000. Above are subject to being unsold.

MICHAEL RAINS AND CO., Dutch Bulb Warehouses, 34, Mansell Street, Aldgate, City, London. Established 1856.

NEW CHRYSANTHEMUMS.
Awarded Silver Medal and twenty Certificates, 1889.
The finest collection in Europe.

MRS. S. COLEMAN, awarded six First-class Certificates; golden-bronze sport, shaded rose; from Princess of Wales. 5*s.* each, 3 for 12*s.* 6*d.*

ADA SPAULDING, the largest incurved variety ever raised; colour deep rose, with lighter centre. Won Harrison and four other Cups and Prizes in America as the best seedling. 5*s.* each.

JOHN LAMBERT, sport from Lord Alcester; colour, creamy-yellow, shaded rose; distinct, and superior to Emily Dale or Golden Queen in build and colour; considered the best of the Queen family. 3*s.* 6*d.* each.

Orders executed in rotation early in March. I hold the stock of these three grand novelties; no exhibitor can win in future without them.

CATALOGUE of over 100 splendid novelties and general stock in Press, price 6*d.*, gratis to customers. Culture, by E. Molyneux, W. Tunnington, and C. Orchard.

ROBERT OWEN, Floral Nursery, Maidenhead.

SMALL SHRUBS, &c.—Araucaria imbricata, 10 inches, 50*s.* per 100; Abies orientalis, 2 yr., 30*s.* per 1000; Aralia Sieboldii transplanted, 8*s.* per 100; Japan Box, Bushy, 6*s.* per 100; Sweet Bays, 2 yr., 30*s.* per 1000; Cupressus macrocarpa, 6 to 8 inches, 30*s.* per 1000; do., 9 to 10 inches, pots, 10*s.* per 100; Cupressus erecta viridis, 6 to 8 inches, 60*s.* per 1000; C. striata, 1 foot, 12*s.* per 100; C. Allionii, 9 inches, 8*s.* per 100; Escallonia macrantha, pots, 12*s.* per 100; Laurustinus, 8 inches, 8*s.* per 100; Oak, Evergreen, 1 year, 35*s.* per 1000; Pampas Grass, 9 inches, 50*s.* per 1000; Rhododendron ponticum, 1 yr. transplanted, 25*s.* per 1000; Yucca gloriosa, potted, 14*s.* per 100; Dracæna australis, potted, 14*s.* per 100; Pinus Cembra, 3-yr., 20*s.* per 1000; Pinus insignis, 1-yr. transplanted, 30*s.* per 1000; P. excelsa, 1-yr., 4*s.* per 100; Picea pinsapo, 1-yr., 4*s.* per 100; P. Nordmanniana, 1-yr., 1-yr. transplanted, 40*s.* per 1000; Thuia Lobbii, 10 to 12 inches, 50*s.* per 1000; Yews, English, 1-yr., 2-yr. transplanted, 35*s.* per 1000.

GARLIES MITCHELL, Nurseryman, Stranraer.

Planting Season.

JOHN PERKINS AND SON hold large stocks of the following, which they are offering at very low prices. Special offers on application.

BIRCH, 1½ to 2, 2 to 3, and 3 to 4 feet.
PINUS AUSTRIACA, 1½ to 2, and 2 to 2½ feet.
,, LARICIO, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
BERBERIS AQUIFOLIA, 1 to 1½ feet.
COTONEASTER SIMMONSII, 1½ to 2, and 2 to 3 feet.
HAZEL, 2 to 3, and 3 to 4 feet.
HORNBEAM, 1½ to 2, and 2 to 3 feet.
LAURELS, Common, 1½ to 2, 2 to 3, and 3 to 4 feet.
,, CAUCASICA, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
,, ROTUNDIFOLIA, 1½ to 2, 2 to 2½, and 2½ to 3 feet.
SNOWBERRY, 1½ to 2, 2 to 3, and 3 to 4 feet.
YEWS, English, 1½ to 2, 2 to 3, and 3 to 4 feet.
QUICK, on Whitethorn, strong transplanted.

Samples on application; inspection of our stock invited.
Billing Road Nurseries, Northampton.
Postal Address—52, Market Square, Northampton.
Telegraphic Address—"Quick, Northampton."

CARNATION, GLOIRE DE NANCY.—We are sending out our own strain, the grandest white, clove-scented flower in cultivation; flowers from 6 to 9 inches round; for cutting, border, or conservatory decorations, it has no equal; good strong rooted layers, ready to pot up or plant out, 30*s.* for 100, 15*s.* for 50, 8*s.* for 25. We have also a grand lot of the true OLD RED CLOVE layers (we never had better) at 20*s.* for 100, 10*s.* for 50, 6*s.* for 25; also a fine lot of the COUNTESS, bright terra cotta, and ROSY MORN, striped pink, at 20*s.* for 100. And a grand lot of double white PRIMULA, in 5-inch pots, in flower and bud, at 10*s.* per doz.—COLLINS AND SONS, Cumberland Park Nurseries, Willesden Junction, W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

NOTICE IS HEREBY GIVEN, that the FIFTY-FIRST ANNUAL GENERAL MEETING of the Members of this Institution will be held at "SIMPSON'S," 101, STRAND, W.C., on THURSDAY, the 16th of January next, for the purpose of receiving the Report of the Committee and the Accounts of the Institution for the present year, and electing Officers for the ensuing year, and other affairs, and also for the ELECTION of NINE PENSIONERS on the Funds. The Chair will be taken at 3 o'Clock. The Ballot will close at 5 o'Clock precisely.—By order, E. R. CUTLER, Sec.
50, Parliament Street, London, S.W.—Dec. 16, 1889.

P.S.—The Voting Papers have all been delivered, any Subscriber who may not have received one is requested to make immediate application to the Secretary.

CONIFERS and SHRUBS.—Abies Douglasii, 4 to 5 ft., 50*s.* per 100; 6 to 7 ft., 70*s.* per 100; Araucaria imbricata, 2 to 2½ ft., 20*s.* per doz.; 3 to 3½ ft. 36*s.* per doz.; 4 ft., 48*s.* per doz.; Cupressus Lawsoniana, 2 ft., 25*s.* per 100; 3 to 3½ ft., 32*s.* per 100; 5 ft., 50*s.* per 100; Cupressus erecta viridis, 1½ to 2 ft., 30*s.* per 100; 3 ft., 40*s.* per 100; Picea Nordmanniana, 2 to 2½ ft., 50*s.* per 100; 3 ft., 12*s.* per doz.; Retinospora plumosa, 1½ ft., 25*s.* per 100; 3 to 3½ ft., fine, 50*s.* per 100; R. squarrosa, 1½ to 2 ft., 32*s.* per 100; Thuia Lobbii, 3 to 4 ft., 30*s.* per 100; 4 to 5 ft., 50*s.* per 100; T. dolabrata, 2 ft., 20*s.* per 100; 4 ft., extra, 36*s.* per doz.; Berberis Aquifolium, 2 ft., 12*s.* per 100; Box trees, 2 to 3 ft., 20*s.* per 100; Japan Box, 12 inch, 12*s.* per 100; Cotoneaster Simonsii, 3 to 4 ft., 16*s.* per 100; Sea Buckthorn, 12 to 15 inch, 8*s.* per 100; 2 to 3 ft., 16*s.* per 100; Dogwood, 2 to 3 ft., 12*s.* per 100; Escallonia macrantha, pots, strong, 24*s.* per 100; Laurels, common, 2 to 3 ft., 12*s.* per 100; L. Colchiaca, 3 to 3½ ft., 20*s.* per 100; L. caucasicum, 3 to 3½ ft., 20*s.* per 100; L. rotundifolia, 2 ft., 16*s.* per 100; Rhododendron ponticum, 1½ to 2 ft., 30*s.* per 100; 2 to 2½ ft., 40*s.* per 100; 4 ft. buds, 100*s.* per 100; R. hybrida, 2 to 2½ ft., 60*s.* per 100; 4 ft., 120*s.* per 100. Special prices per 1000.

GARLIES MITCHELL, Nurseryman, Stranraer.

LILIES and ORCHIDS.—An immense stock of recently imported Plants, compels a sale of the Established Plants to make room. They have not yet flowered, but are all flowering plants, and must be sold at a great sacrifice. Very valuable varieties are certainly to be obtained, and great bargains; see public journals for high prices recently obtained. The special offer affords a paying investment to anyone with glass at command, which should not be overlooked. Such plants may never again be offered to the public and trade.

My first consignments of LILIUM AURATUM have arrived, prices 4*d.*, 6*d.*, 9*d.*, 1*s.*, and 1*s.* 6*d.* each; per 100, 30*s.*, 35*s.*, 45*s.*, 55*s.*, and 70*s.* Liberal allowance to the Trade.

Apply for CATALOGUE to
W. GORDON, The Nurseries, Amyand Park Road, Twickenham.

Special Offer of Large Well-grown Evergreens and CONIFERS, frequently transplanted, standing singly, and every plant a specimen, offered by

WILLIAM WOOD AND SON,
The Nurseries, Maresfield, Uckfield, Sussex.
Single plants supplied if required at the dozen price.

Coniferæ.

ABIES DOUGLASII, 5 to 6 ft., 18*s.*; 6 to 7 ft., 24*s.* per dozen.
,, ,, GLAUCA, very fine, 5 to 6 feet, 24*s.* per dozen.
AMERICAN ARBOR-VITÆ, 4 to 5 feet, 15*s.*; 5 to 6 feet, 18*s.*; 6 to 7 feet, 24*s.* per dozen.
CUPRESSUS LAWSONIANA, 6 feet, 18*s.*; 6 to 7 feet, 24*s.*; 7 to 8 feet, 30*s.*; 8 to 10 feet, 40*s.* per dozen.
,, LAWSONIANA ERECTA VIRIDIS, extra fine, 4 feet, 42*s.*; 5 feet, 60*s.* per dozen.
PICEA PINSAPO, 2½ to 3 feet, 30*s.*; 3 to 4 feet, 42*s.* per dozen.
,, PECTINATA (Silver Fir), 3 to 4 feet, 18*s.*; 4 to 5 feet, 22*s.* per dozen.
PINUS AUSTRIACA, 3 to 4 feet, 20*s.*; 4 to 5 feet, 28*s.* per doz.
,, LARICIO, 4 to 5 feet, 28*s.*; 5 to 6 feet, 36*s.* per dozen.
,, SYLVESTRIS (Scotch Fir.), 4 to 5 feet, 20*s.*; 5 to 6 feet, 25*s.* per dozen. From nursery rows, 2 to 3 feet, 35*s.*; 3 to 3½ feet, 50*s.* per 1000.
,, INSIGNIS, 5 to 7 feet, 30*s.* per dozen.
,, CEMBRA, 3 to 4 feet, 15*s.* per dozen.
CRYPTOMERIA ELEGANS, 3 to 4 feet, 12*s.* per dozen.
RETINOSPORA PLUMOSA, 5 feet, 20*s.*; 6 feet, 24*s.* per dozen.
,, ,, AUREA, 3 feet, fine, 20*s.* per dozen.
THUJOPSIS DOLABRATA, 2 to 3 ft., 18*s.*; 3 to 4 ft., 24*s.* doz.
,, BOREALIS, 4 to 5 feet, very fine, 30*s.* per dozen.
TAXUS ELEGANTISSIMA, 1½ to 2 feet, 20*s.* per dozen.
THUIA LOBBII, 4 to 5 ft., 20*s.*; 5 to 6 ft., 30*s.*; 6 to 7 ft., 36*s.*

Large Evergreens.

LAURELS, Common, colchicum, caucasicum, and rotundifolium, 3 to 4 feet, 12*s.*; 4 to 5 feet, 18*s.*; 5 to 6 feet, 24*s.* per dozen.
,, Portugal, 2½ to 3 feet, 24*s.* per dozen.
TREE BOX, green and variegated, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* per dozen.
BERBERIS DARWINII, 2 to 3 feet, 9*s.*; 3 to 4 feet, 15*s.* doz.
LAURUSTINUS, 1½ to 2 feet, 10*s.*; 2 to 2½ feet, 15*s.* per dozen.
GRISLINIA LITTORALIS, 1 to 1½ ft., 10*s.*; 1½ to 2 ft., 15*s.* doz.
OLEARIA HAASTII, 1½ to 2 feet, 9*s.* per dozen, 60*s.* per 100.
COTONEASTER SIMMONSII, 3 to 4 feet, 8*s.* per dozen.
GORSE, double, fine, in pots, 8*s.* per dozen, 50*s.* per 100.
DECIDUOUS FLOWERING SHRUBS, consisting of Althæa frutex, Deutzias, Forsythias, Guelder Rose, Rhus, Ribes, Sambucus, Spiræas, Syringas, &c., at 4*s.* per dozen, 22*s.* 6*d.* per 100.
WEIGELAS, a fine collection, 6*s.* per dozen, 40*s.* per 100.

CATALOGUES Gratis on application.

FOREST TREES.—Ash, 1 to 2 feet, 13*s.* per 1000; do., 2 to 3 feet, 17*s.* per 1000; Beech, 1½ foot, 14*s.* per 1000; 2 feet, 16*s.*; 2½ feet, 18*s.*; 2½ to 3 feet, 20*s.*; 3 to 4 feet, 24*s.* per 1000; Horse Chestnuts, 2 feet, 20*s.* per 1000; Sweet Chestnuts, 1½ to 2½ feet, 18*s.* per 1000; 3 to 4 feet, 24*s.* per 1000; Larch, 15 to 24 inches, 18*s.* per 1000; 1½ to 2 feet, 20*s.* per 1000; 2 to 2½ feet, 26*s.* per 1000; Spruce Fir, 1 to 1½ feet, 12*s.* per 1000; 1½ to 2 feet, 14*s.*; 2½ to 3 feet, 16*s.* per 1000; Scotch Fir, 2-yr. transplanted, 12*s.* per 1000; 2 to 2½ feet, 15*s.*; 2½ to 3 feet, 20*s.* per 1000; Hazels, 1½ feet, 20*s.* per 1000; Pinus austriaca, 2-yr., 3-yr. transplanted, 15*s.* per 1000; Black Thorns, 2 feet, 22*s.* per 1000; Sycamore, 1 to 2 feet, 13*s.* per 1000; 2 to 2½ feet, 16*s.* per 1000; 7 to 8 feet, fine, 12*s.* per 100; Elm, Wych, 5 to 6 feet, 8*s.* per 100.

GARLIES MITCHELL, Nurseryman, Stranraer.

WEM, SALOP.—HENRY ECKFORD

IN again offering his **NOVELTIES in CULINARY and SWEET PEAS,** begs to thank his numerous Patrons for their support, and for the spontaneous expressions of approval of varieties offered in former years, and ventures to hope for a continuance of their favours. The **SWEET PEAS** have been greatly admired, and were awarded a CERTIFICATE OF MERIT by the Floral Committee of the R.H.S., in July last, and H. E. has since received many letters expressing approval of their great merit. Mr. CHARLES PENNY, Gardener to H.R.H. the Prince of Wales, who has grown them at Sandringham, writes:—"I cannot speak too highly of your Sweet Peas; in regard to novelty in colour they are unique, and in size and substance a great advance on varieties hitherto offered, and cannot fail to please every lover of the Sweet Pea." The season having been unfavourable for the ripening of seed, the stocks of several of the choice kinds are very limited. The **CULINARY PEAS** selected after years of careful trial, are all varieties of first-rate excellence, and will be found great acquisitions; being dwarf kinds and heavy croppers, they are well adapted for Field Culture, and well worth the attention of Market Growers.

ECKFORD'S NOVELTIES IN SWEET PEAS FOR 1890.

THE YELLOW SWEET PEA.

PRIMROSE—a near approach to a *Yellow Sweet Pea*, quite *novel* and distinct in colour; the standards and wings pale *primrose-yellow*. *Awarded First-class Certificate by the Floral Committee of the R.H.S., in* 1887. In sealed packets of 20 seeds, 2*s.* 6*d.*; 10 seeds, 1*s.* 6*d.*—Stock very limited.

COUNTESS OF RADNOR — pale mauve standards, with a deeper shading of mauve; wings pale lilac or delicate mauve. In sealed packets of 20 seeds, 2*s.* 6*d.*; 10 seeds, 1*s.* 6*d.*—Stock very limited.

MRS. GLADSTONE—delicate pink standards; the wings blush, edged with delicate pink; a singularly pretty and pleasing variety. Per packet of 25 seeds, 1*s.* 6*d.*

CAPTAIN OF THE BLUES—the standards bright purple-blue, with pale blue wings; a very striking and fine variety. Per packet of 25 seeds, 1*s.* 6*d.*

PURPLE PRINCE—maroon standards, shaded with bronze, and purple blue wings; very fine and distinct. Per packet of 25 seeds, 1*s.* 6*d.*

MISS HUNT—pale carmine, salmon standards, with soft pink wings; very pretty indeed. Per packet of 20 seeds, 1*s.* 6*d.*—Stock very limited.

MRS. SANKEY—pure white, a large bold flower; a fine improvement on all other *Whites;* very grand. Per packet of 20 seeds, 1*s.* 6*d.*—Stock very limited.

EIGHT DISTINCT VARIETIES, TO NAME—3 seeds of each, in sealed packets, 2*s.*

SPECIAL MIXTURE — consisting of the most recent crosses and selections, very choice and varied; highly recommended. This mixture can only be obtained from H. E. In sealed packets of 25 seeds, 1*s.* each.

VARIETIES SENT OUT IN PREVIOUS YEARS.

"QUEEN OF ENGLAND"—white, of large size and good substance. In sealed packets of 25 seeds, 1*s.* each.

"DELIGHT"—wings white, standards white, beautifully crested with crimson; small, very pretty, dwarf habit. In sealed packets of 25 seeds, 1*s.* each.

"SPLENDOUR"—*Awarded a First-class Certificate by the Royal Horticultural Society.* Colour rich bright pinkish-rose, shaded with crimson; flowers large, and of the finest form; a superbly distinct variety. Per packet, 1*s.*

"APPLE BLOSSOM"—the standards bright pinkish-rose, the wings blush, a beautiful shade of Apple Blossom; very pretty and distinct. Per packet, 1*s.*

ECKFORD'S LARGE-FLOWERED, MIXED, per packet, 6*d.*

NOVELTIES IN CULINARY PEAS FOR 1890.

ECKFORD'S NEW CULINARY PEA "RENOWN"—a green wrinkled marrow of robust growth; a very fine main-crop variety, producing abundantly deep green, square, well-filled pods; flavour first-rate. Height, 2½ feet. In sealed half-pint packets, 2*s.* 6*d.* each.

ECKFORD'S NEW CULINARY PEA "THE ECHO"—a most prolific dwarf wrinkled marrow, coming in ten days before *Renown*, of very superior quality. Height, 2 feet. In sealed half-pint packets, 2*s.* 6*d.* each.

ECKFORD'S NEW CULINARY PEA "JUNO"—a most prolific, and in every way a wonderfully fine dwarf late Pea—may be described as a dwarf *Ne Plus Ultra*. Height, 18 inches. In sealed half-pint packets, 2*s.* 6*d.* each.

ECKFORD'S NEW CULINARY PEA "THE DON."—*Awarded a First-class Certificate by the Royal Horticultural Society, under the name of Quality.* A wrinkled marrow, producing abundantly deep green, square ended, well-filled pods; a *Ne Plus Ultra* like Pea of exquisite flavour, coming into use earlier than *Fame*. Height, 4 feet. In sealed half-pint packets, 2*s.* each.

ECKFORD'S NEW CULINARY PEA "HEROINE"—a wrinkled marrow, of robust growth; second early, producing most abundantly long pointed, well-filled pods; flavour exquisite; fine for field culture. Height, 2½ feet. In sealed half-pint packets, 2*s.* each.

ECKFORD'S NEW CULINARY PEA "ESSENTIAL"—a wrinkled (the early) Marrow; produces abundantly square, handsome, well-filled, deep green pods, the Peas retaining their beautiful deep green colour when cooked; exquisite flavour; a great acquisition. If sown in pots in January and planted out in March, may be had very early. Height, 5 feet. In sealed half-pint packets, 2*s.* each.

ECKFORD'S NEW CULINARY PEA "FAME"—*Awarded a First-Class Certificate by the Royal Horticultural Society.* A main-crop wrinkled Pea, growing 4 feet, producing profusely deep green, square ended, well-filled pods; an improved *Ne Plus Ultra*, coming into use much earlier than the fine old variety of that name; flavour exquisite. In half-pint packets, 1*s.* each—per bushel to the Trade on application.

ECKFORD'S NEW CULINARY PEA "SHROPSHIRE HERO"—*Awarded a First-class Certificate by the Royal Horticultural Society.* A wrinkled Pea of robust growth; second early; produces abundantly long, square, handsome, well-filled pods; well adapted for Market Growers; flavour exquisite; a great acquisition. In half-pint packets, 1*s.* each—per bushel to the Trade, on application.

PANSY.

H. ECKFORD'S BOREATTON STRAIN, A1; *highly commended by the Royal Horticultural Society.* In 1*s.*, 2*s.* 6*d.* and 5*s.* packets. 2 to the Trade.

H. E.'S NEW STRIPED and FLAKED all the colours of the rainbow, very choice. In 1*s.*, 2*s.* 6*d.*, and 5*s.* per packet. 2 to the Trade.

PETUNIA —Variously striped in most vivid colours, beautiful strain, highly recommended. In 1*s.* packets. 2 to the Trade.

Cash with Order, or reference from unknown Correspondents.—The usual Discount to the Trade.

CANT'S
NEW ROSE CATALOGUE.

The Best and Most Reliable Descriptive List ever published.

Post-free on application to

BENJAMIN R. CANT,
COLCHESTER.

DEVERILL'S
PEDIGREE ONIONS,

THE BEST FOR

MAIN CROP and EXHIBITION.

Gardeners, Amateurs, and Cottagers should insist upon having the **True** Stock of each kind, in Deverill's Sealed Packets only.

The CATALOGUE giving instructions how to grow for Main Crop and Exhibition, may now be had gratis and post-free.

H. DEVERILL,
ROYAL FARM & GARDEN SEED STORES,
BANBURY.

PRIZE COB FILBERT TREES.
MR. COOPER, F.R.H.S., of Calcot Gardens, Reading, Berks, is the largest Grower of Prize Cob Filbert Trees for Sale in the Kingdom. No garden should be without one of these most prolific Trees.
Price LISTS, &c., on application.

CLIBRAN'S

CHRYSANTHEMUMS.—We offer one of the largest and richest collections ever grown; embracing, as it does, all the renowned English, American, Continental, and Japanese Novelties. Cuttings post-free, our selection, 2*s.* per dozen; 15*s.* per 100. Extra choice and new sorts, 4*s.* and 6*s.* per dozen. Plants ready about February. Orders booked now.

A FEW SPECIALTIES.—You should send for this Small List—gratis and post-free—as we feel sure it will interest you. In it will be found descriptions of several rare and desirable plants that are not to be found in any other list; also, such beautiful, little-known species as "THE FOAM FLOWER," "THE TREE ANEMONE," &c.; besides such Novelties as the Kelsey (Japan) Plum, &c.

CLIBRAN'S EUCHARIS MITE-KILLER.—All may now grow and flower the beautiful Eucharis if only cultivated with ordinary care, and according to directions. See Testimonials, gratis and post-free. Half-pints, 1*s.* 6*d.*; pints, 2*s.* 6*d.*; quarts, 4*s.* 6*d.*; half-gallon, 7*s.* 6*d.*; 1 gallon, 12*s.* 6*d.*

THE INSECTICIDE of INSECTICIDES.—"Lemon Oil" is steadily forcing its way to the very foremost position amongst all Insecticides. Nearly all the principal Gardeners and Nurserymen use it, as they find it to be the cheapest, most effective, and safest in the market. Pints, 1*s.* 6*d.*; quarts, 2*s.* 9*d.*; half-gallons, 5*s.*; gallons, 9*s.*; 4 gallon tins, 34*s.* May be procured from most Seedsmen and Nurserymen; or from

Clibrans,' Nurserymen, Altrincham;
Also, 10 and 12, Market Street, Manchester.

FRUIT TREES A SPECIALTY.

APPLES.—The largest stock in the county, Standards or Dwarfs. See my Collections at leading shows this autumn.

PEARS, Hardy, and all sorts, for **Fruit Trees,** in all forms usually grown.

STRAWBERRIES. — One of the best Collections in the Trade, including Laxton's new ones.

Abridged LIST free. Full Descriptive CATALOGUE, containing much useful information, 6*d.*; free to Purchasers.

JOHN WATKINS, Fruit Tree Grower,
POMONA NURSERIES, WITHINGTON, HEREFORD.

A VERY EXTENSIVE STOCK OF

ORNAMENTAL TREES

For AVENUE and STREET PLANTING,
offered by

WILLIAM WOOD & SON, The Nurseries,
Maresfield, Uckfield, Sussex.

Consisting of the following, from 6 to 8 and 10 to 12 feet.
Prices from 15*s.*, 18*s.*, 24*s.*, to 30*s.* per dozen.

Acacias, Ailantus, Ash in variety, Birch, Spanish and Horse Chestnuts, Elms, Chichester, English, and Cornish; Poplars, Black Italian, Improved Lombardy, White Dutch, Bolleana, and Balsam; Sycamores, Flowering Thorns, Maples of sorts, Acer negundo variegata, &c.

Strong QUICK, for hedges, at 25*s.*, 30*s.*, and 40*s.* per 1000.

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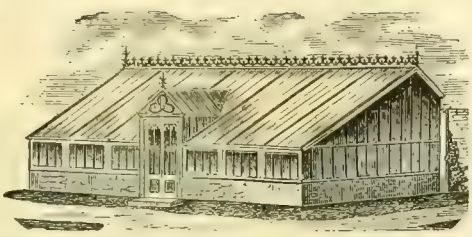
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_____ 1889.

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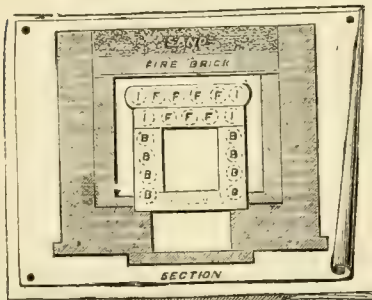
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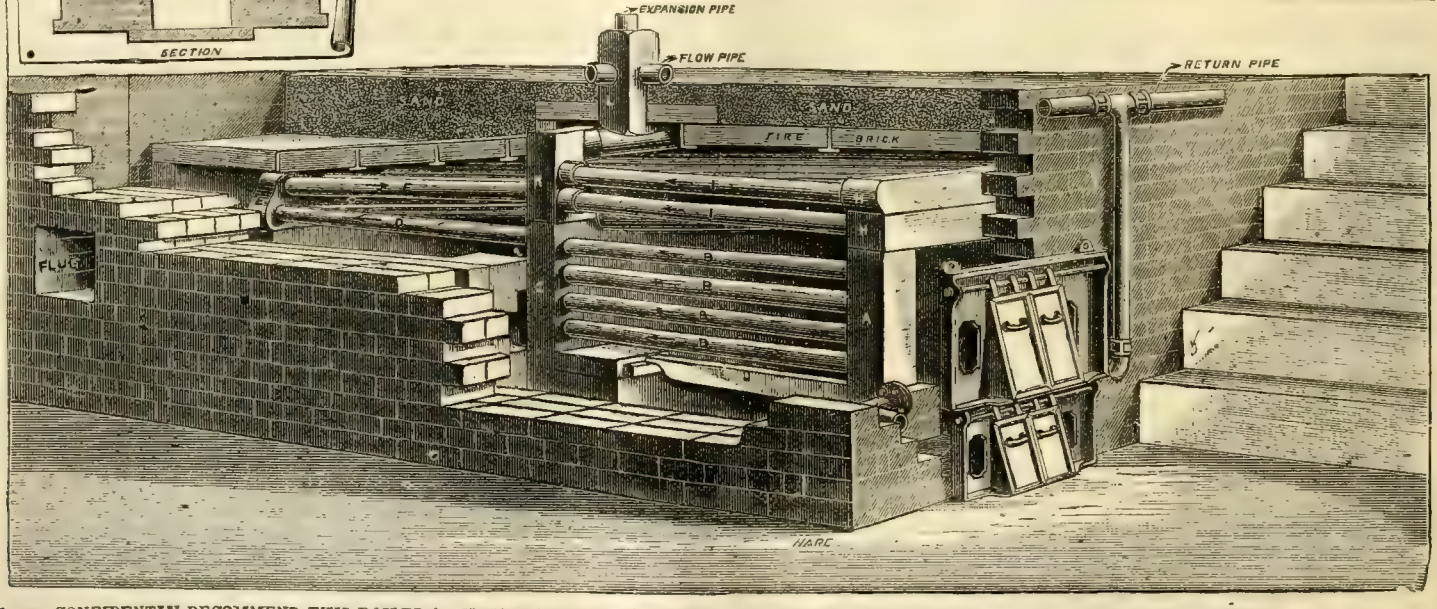
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THE

Gardeners' Chronicle.

SATURDAY, DECEMBER 28, 1889.

CORNISH GARDENS AND THEIR LESSONS.*

IN the medical papers, attention has of late been called to the mild climate of certain parts of Cornwall, and to the advantages those particular districts present to the invalid or to those happy enough to be able to absent themselves from the fogs and frosts of the metropolis and other parts of Britain. These advantages are summed up in a pamphlet now before us, of the general truth of the statements in which we can vouch, so far as vegetation is concerned, from the evidence so often submitted to us. From the tables quoted by Sir EDWARD SIEVEKING, in a recent number of the *British Medical Journal*, it appears that the monthly mean temperature as observed during eighteen years at Falmouth is (omitting fractions), as follows:—January, 43°; February, 44°; March, 44°; April, 47°; May, 51°; June, 57°; July, 60°; August, 60°; September, 56°; October 51°; November, 47°; December, 44°. The daily range of temperature is about 6° in the winter and spring months, extending to 10° in May, June and July.

The mean humidity ranges from 79° in May, to 86° in January; saturation being regarded as =100. The rainfall varies from less than 3 inches in April, May, and June respectively; to over 5 inches in October, December, and January, and to over 6 inches in November, the annual rainfall amounting to 49·3 inches.

On the average, there are seventeen days in each month on which rain, little or much, falls. The driest month is May, when thirteen days, on the average, are rainy; the wettest is November, when twenty-two rainy days may be expected. Fog is almost unknown; while the amount of

* Cornwall as a winter resort: Plymouth (W. Brendon & Son).

bright sunshine is greater than at almost any other place in the country. The mean number of hours per month during which bright sunshine has been registered varies from forty-six in January to 238 in June—a mean of 141 per month. The mean number of sunny days per month ranges from seventeen in January to twenty-nine in August—the mean of all the months being twenty-four.

But statistical records and figures may be so presented as to prove almost any case. Some hotels on the Riviera present a formidable array of figures, painted conspicuously on boards in their courtyards, and tending to show that the climate of that particular town—we had almost said hotel—during summer, is so delightfully cool that it is obviously foolish to go elsewhere in summer; while in what is known as winter elsewhere, there can be no more charming residence this side of Paradise.

The swelling or shrinkage of the column of mercury in the thermometer or barometer tubes, according to the degrees of heat or of pressure, the records of sunshine and of rainfall, may be—indeed, are—most valuable for purposes of abstract science, but it is evident that it is the combined influence of these several factors which has to be taken into account in considering the question of climate in its effects on vegetation or on animal life. More than that, the hereditary "constitution" of the individual plant or animal has to be considered, as well as the particular stage of growth and activity or of rest in which the plant or animal may happen to be at the particular time when it is subjected to climatal changes.

Physicians like our valued correspondent, Dr. Bennet, have long recognised this, and have shown how the vegetation of a country, if properly studied, affords more trustworthy and useful indications of what the effect of any particular climate on *living beings* may be than do the abstract registers afforded by meteorological instruments.

The wild plants of any particular district do not offer such valuable comparative indications of the effects of climate as do the exotic plants cultivated in the open air in gardens without special protection. The wild plants are natives, habituated to the climate by long-continued hereditary endowment. Those that could not maintain themselves in the struggle have disappeared, whilst those that now exist know, if we may be allowed the expression, what they have to expect, and are adapted to confront it. But the exotics are new-comers, derived from countries where different conditions prevail, and, if they are found able to resist the extremes and fluctuations of a particular place, the reason for their resistance may be found either in their own intrinsic hardihood and powers of resistance, or in the slight nature of the trials to which they are subjected. The question of hardihood is easily solved, a large proportion of the plants growing freely in the open air at Penjerrick, at Enys, at Tresco, are well known not to be hardy in the midland or eastern counties, or, indeed, anywhere in Britain save in south-western Ireland, some parts of the west coast of Scotland, and the Isle of Man.

Of the mild climate of Scilly and of certain parts of Cornwall, we have repeatedly given illustrations, and not long since gave a figure of an Agave flowering in the open air at Falmouth, the flower-spike of which had attained a height of 24 feet. Mr. Upcher has lately got together a list of the exotic plants flourishing in Western Cornwall, but he has weakened his case by including plants like Berberis Darwinii, Thuias, and Yuccas, which are hardy almost everywhere.

"The Bamboos do well in such localities as Tresco and Penzance. Bambusa mitis, the most tender, grows finely at Tresco; B. calcata does well in the garden of Mr. T. B. Bolitho, M.P., Penzance. The Cannas too, give a "most wonderful group," 12 yards round, at Trewidden; and with slight protection the most tender can be successfully grown. Clianthus puniceus often flourishes in exposed situations. At Tredarvah, the stem of one is 8 inches round. Chamærops, in three varieties, reaches 10 feet in height at Polwithen; and Desfontainea spinosa 7 feet at Falmouth. Dicksonias flourish exceedingly; D. antarctica has grown for twenty years out of doors; and D. squarrosa, brought from a greenhouse in Guernsey, has sprung up 9 feet high in the open at Penzance. Dracænas thrive so well that there is actually a native hybrid —scillonensis×—originally raised at Tresco. The Eucalypti do well. At Penmere, Falmouth, there is one [of what species?] over 60 feet high, producing seed annually. Escallonia macrantha is so luxuriant as to be almost a weed; and Fuchsias grow to bushes 10 to 15 feet in height, and in various parts of West Cornwall literally form hedges, which flower most lavishly. Hydrangeas flourish everywhere in the county; and at Tresco the woods are full of them, ranging up to 10 feet high. The Lapageria rosea, tender exotic though it is, has clothed a wall at Trewidden, Penzance; while the white variety grows magnificently at Carhayes. Another tender exotic which flourishes exceptionally in Cornwall is the Melianthus major. The Date Palm grows at Tresco. As to Veronicas, they grow to trees 15 feet in height; while Pelargoniums cover the fronts of houses at Penzance and Scilly, and flowering Myrtles abound.

"The climatic position of Falmouth, as that of the county generally, can be put most emphatically by citing the fact that, in January, 1881, a month of all but unprecedented cold, there were flowering in the neighbourhood, in the open air and unprotected, about 150 species of exotics, and over 100 wild flowers. Very few of the former were injured, and more than a score of species that were killed or injured at Kew were wholly untouched at Falmouth. Against this may also be set the fact that a temperature of—2° at Turin, in January, 1880, killed outright such plants as Araucaria imbricata, Cedrus deodara, &c. With such a climate to aid him, no wonder that the late Mr. R. W. Fox, F.R.S., obtained the Banksian Medal of the Royal Horticultural Society for acclimatising upwards of 200 species of foreign plants in his garden at Grove Hill; or that Citron and Orange trees grown against garden walls here should yield an abundant return of fruit."



FIG. 106.—PAULOWILHELMIA SPECIOSA: COLOUR OF FLOWERS, MAUVE-BLUE AND YELLOW. (SEE P. 749.)

From the neighbourhood of Penzance, which is even milder than Falmouth, come the Broccoli, and a very large proportion of the early Potatos which find their way into our markets in spring; while in Scilly a large and profitable industry has sprung up in the shape of the culture of Narcissus flowers for the London market. The mildness of the climate in particular parts of the county is due, of course, to local circumstances. Within a very short distance, the physical characteristics may vary, and the climate not be materially

different from that of southern or western England generally.

Frequent references and occasional illustrations of famous Cornish gardens, as of that of Lamorran, Enys-Penjerrick, have been given in our columns. A fine Agave, flowering in the open air at Falmouth, was figured in the early part of the present year. Illustrations of the wonderful gardens at Tresco in the Scilly Isles have also frequently been given.

other counties, and not often seen in bloom at this season of the year. The largest exhibition was that of Mr. Howard Fox, Rosehill, whose collection included a splendid Bamboo, Castor-oil plant, Acacia dealbata, from New Holland; flowering Holly, from Peru; Magnolia exoniensis×; Madras Citron in fruit; Palms, &c. From Carmino (Mr. W. L. Fox's) were sent, amongst other plants and flowers, Gentiana acaulis, Eschscholzia, including Clematis Jackmanni and Daphne neapolitanum. Mr. Patey set a fine collection from Flushing, near Falmouth, including Iris cristata, Cyclamen persicum, and Anemone papaver. There were also rare Ferns from Rosemundy, and plants and shrubs from Kimberley Park and Arwenack. The exhibits were arranged and named by Messrs. Sherring, Mitchell, Oatey, and H. C. Oakshott (Honorary Secretary).



Fig. 107.—View in the grounds, Penjerrick, near Falmouth. (see p 747.)

Market gardening in Cornwall formed the subject of an article so recently as on May 25, 1889.

In the matter of working up the information about the district, a very useful gathering has just been held by the Falmouth Naturalists' Association, in the way of an exhibition of flowers in bloom, and plants growing in the open air. In this exhibition there were shown over 200 specimens, many of them being plants never seen out of hot-houses in

white Lupin, Lavender, Dr. Hogg Strawberry in bloom, white Hollyhock, Gaillardia, &c. The Rev. W. Rogers, Mawnan, President of the Society, sent a bunch of eight different Roses. Mr. Sherring had a magnificent display of garden and wild flowers, embracing a hundred different kinds, collected at Carclew, Tremough, Marlborough, and other places; some rare specimens being contributed by Mr. Pullen. Mr. Sherring's collection included Agapanthus umbellatus. Mrs. Moxom sent some rare specimens,

New or Noteworthy Plants.

PAULOWILHELMIA SPECIOSA, *Hochst.**

This novelty (fig. 106) is a beautiful soft-wooded stove plant, as distinct as it is showy, and likely to become a very popular plant. It has opposite cordate leaves, irregularly toothed on the margin,

* *Paulowilhelmia speciosa*, Hochstetter, in *Flora*, 1844, Beilage, p. 4; De Candolle, *Prodromus*, vol. xi., p. 208. Rue lia sclerochiton, S. Moore, in *Journal of Botany*, 1880, p. 7.

and having rather long petioles; the showy mauve-blue flowers, marked with yellow on the disk, are disposed in large terminal panicles, made up of numerous opposite cymes. In general appearance it is like a Ruellia, but it is distinguished from that genus by having all the lobes of the corolla directed forwards, so that the flower looks as if it were one-lipped.

Very little seems to be known about the genus Paulowilhelmia, as it was founded on an Abyssinian plant, no example of which is in the Kew Herbarium, and two of the other plants mentioned under the genus in Bentham and Hooker's *Genera Plantarum* do not belong to it; the British Museum specimen I have not seen, but the plant here described is certainly a genuine Paulowilhelmia, and although it comes from the other side of the African continent, I cannot but think that it is the same species as the Abyssinian plant described as P. speciosa, since it agrees precisely with the description of that plant. It is also the same plant as that described by S. Moore, under the name of Ruellia sclerochiton, from Niam-niam in Central Africa, which bridges over the distance between Abyssinia and the Cameroons, whence the present plant came. It seems to vary considerably in the toothing of the leaves, and in the pubescence of the inflorescence. The Kew plants were raised last year from seeds, obtained from a dried specimen in fruit, collected in an expedition to the Cross River, Cameroons, by Vice-Consul H. H. Johnson, in the beginning of 1888. The inflorescence of this specimen is thickly clothed with long glandular hairs; the Kew plants raised from its seeds, or at least some of them, have the inflorescence comparatively glabrous, being clothed with a very short pubescence, mingled with a few short glandular hairs, most abundant on the calyx-lobes. The Niam-niam specimen, and another from the Gold Coast, lately presented to Kew by Mr. Holmes, of the Pharmaceutical Society, are still more nearly glabrous; and as the Kew plants, with their shorter and sparser hairs, were directly derived from one with an abundant covering of long hairs, there can be no possibility of doubting that this is a very variable character. As the plant is already scientifically described, and a figure of the inflorescence is here given, it is unnecessary to give any further description of it. I would remark, however, that the dried specimens show that the inflorescence represented in fig. 106 is exceedingly poor, in comparison to what it will become if the plant be treated so as to properly develop itself. The calyx-lobes, also, are not so acute, nor united into a tube so far up, as shown in the figure; they are linear, obtuse, and united for about one-third their length. *N. E. Brown, Herbarium, Kew.*

A New Type of Colchicum.

I am indebted to the indefatigable Mr. Barr for a couple of specimens that represent a type of Colchicum that is new to cultivation. This is the section Blastodes of Boissier, in which the rootstock is not a corm, but a horizontal or oblique rhizome, like that of Merendera sobolifera, with a thin membranous brown tunic. Only one species is described by Boissier, viz., Crocus Boissieri of Orphanides, a native of Mount Taygetus in Laconia, which was first brought into notice at the Horticultural Congress at Florence in 1876. Mr. Barr received his plant from a correspondent at Smyrna, and it will probably prove to be a new and undescribed species. It has a long cylindrical spathe like that of a Crocus, extending more than half way up the perianth tube. *J. G. Baker.*

Cypripedium Figaro ×.

In the nursery of Messrs. Seeger and Tropp, Lordship Lane, Dulwich, London, a very pretty hybrid Cypripedium has just flowered, and which is supposed to be the result of intercrossing C. Spicerianum with C. œnanthum superbum, but, as with many of our garden hybrids, the cross has not been certainly recorded. The appearance of the flower of the new hybrid, however, seems to bear out the conjecture as to the parentage pretty clearly, especially in the purplish crimson, flame-like rays which glow on the white background of the dorsal sepal much as in the favourite C. œnanthum.

In form C. Figaro follows closely C. Spicerianum, and its dorsal sepal has the same broad chocolate line up its middle as in that species. The base of the dorsal sepal is bright green, the edge and apex pure white. Staminode shining rose, with green spot in the centre; lower sepals green with a few faint brown lines. Petals curled upwards, and backwards at the tips, dull rose with brown lines, their cilate edges forming a narrow, green margin. Front of the pouch brownish-rose, the back yellowish, the whole surface of the flower shiny. Scape dull purple, hairy. Leaves as in C. Spicerianum, bright green, but exhibiting very obscurely a darker veining. A very compact and pretty variety. *James O'Brien.*

Roses.

Moss Roses.

The fact that Lord Courthope has offered a cup of the value of ten guineas to be competed for at the Provincial show of the National Rose Society at Birmingham, on July 16 next, will naturally draw attention to this class of Roses. At the same time, one cannot but feel that it is a great pity that the cup cannot be allocated to something else. It is, we believe, what is called "an open secret," that a very strenuous endeavour was made to get him to alter the conditions of his gift; but that he wishes that the cup should be given for this class, as his lordship considers that enough has not been done for that class, and it is argued that if encouragement were given, we might see as great improvement in them as in the Tea Roses. But surely this is a mistake, the French raisers have been for years at work at the Moss Roses; quite as long, indeed, as they have been at work on the Teas, and yet they have made no progress; they have not even succeeded in getting what they have tried very hard for—a "perpetual moss." One of our most experienced rosarians has lately said that a perpetual moss "is a delusion and a sham."

There are two things that have to be taken into consideration in looking at this subject: the first is, that the Moss Rose is not a separate section, like Teas, Noisettes, Chinas, Centifolias, &c.; it is in fact a mere accidental sport of the latter, for although it has been stated "by a traveller that it grew wild in the neighbourhood of Cintra in Portugal, it has never been authenticated; and even if so found, probably had strayed from some neighbouring garden." Mr. Rivers, in his *Rose Amateur's Guide*, says, "That it is merely an accidental sport of the common Provence Rose, is strengthened by the fact that plants produced by the seed of the Moss Rose do not always show moss, perhaps not more than two plants out of three will be mossy, and as I have often proved those that are not so are most evidently pure Provence Roses, possessing all the characters to show the singular propensity of the varieties of Rosa centifolia to vary. I may here mention that the common Moss Rose often produces shoots entirely destitute of moss." This being the case, I cannot see in what direction we could hope to obtain improvement; but the second point is in improved bearing. When we come to the hybrid perpetuals or Teas, we immediately recognise the fact that we want improvement; even now we are calling out for a yellow perpetual, not of the sort of that impostor, Gloire Lyonnaise; we want a white of the form and style of Charles Lefebvre or A. K. Williams, and so on; but then we look for expanded Roses. The whole beauty of a Moss Rose is gone when it has opened, and it is only in the bud state that we value it; the moment it expands the moss cannot be seen, and its peculiar charm is gone. We do not want to increase its size; imagine a mossy Paul Neyron—who would ever care to cut that for a bouquet? We hardly want any new colour in it, except it may be yellow; and, as I have already said, no amount of hybridising is likely to be successful with what is simply a sport [why not?]. The pretty little Moss de Meaux is another curious deviation, but how it originated seems to be unknown.

Taking these matters into consideration, I do not think that we can look for much improvement, and that therefore it is a pity that so valuable a prize should be offered for so limited a class; but as "he who pays the piper may call the tune," so the Society will thankfully accept the gift. There is another point which does not lead me to anticipate very hopefully the success of this special exhibit, and that is that at the date at which the Provincial Show of the National is fixed (July 16) all Moss Roses, as far as the South of England is concerned, will be past. I do not know how it may be in the North and Midlands, but in the South the Moss is essentially an early Rose. Let us hope, however, that the Northern men, for whom this show is specially intended, may be able to make some entries.

As there may be some enquirer as to the best varieties of the Moss Rose, I may notice the following:—

The Common Moss. I question if there is any of the varieties which holds a higher place in public estimation that this old favourite. It is too well known to need any description.

Lanei is one of the largest, if not the largest of the Moss Roses, but I question whether that is considered an advantage; the bud has not the elegance of form of the common Moss, as the mossy portion terminates somewhat abruptly.

Moss de Meaux.—A very pretty sport of that charming miniature Provence Rose, de Meaux.

Little Gem.—Somewhat like the above, but darker, and exceedingly pretty.

Baron de Wassenaer.—Bright red, large and fine.

White Bath.—This is, no doubt, a sport from the common Moss, and originated in a garden at Clifton about sixty years ago. It is not so free a grower as the old white, but is much prettier, and the form of the bud is more elegant.

Celina.—Very dark crimson, shaded with purple. The foliage is very dark, glossy, the flowers neat, quite full; but it is a very desirable variety on account of its brilliant colour.

Comtesse de Maurinais.—This is considered to be, by Mr. Rivers, a cross between the common Moss and the old Damask, partaking, as he says, of its foliage and general character.

Gloire des Mousseuses.—Very large, full, and one of the very best, being very fully mossed, colour blush, very pretty.

Crested Moss or Crested Provence.—A very peculiar Rose, the "moss" being quite distinct from any other—more massive, and giving the flowers a crested appearance.

Blanche Moreau.—A very vigorous and free flowering variety, an introduction of recent years. It blooms in clusters, the flowers are pure white, but not so graceful in form as the White Bath. These, I think, are the cream of the Mosses, and in fact, there are very few more in the nurserymen's catalogues.

With regard to the cultivation of the Moss Rose, it is very simple; when they are on their own roots they require a light or rich soil, and this is the best way of growing them; when they are budded or grafted, the character of the soil is not of so much importance. Probably the prettiest and best way of growing them, where there is space, is to grow them on beds pegged down. For this purpose they should be grown on their own roots, when they will make a very handsome bed; they should be severely pruned, and when the shoots are four or five feet in length they should be pegged down, and in the following spring there will be a great quantity of flower. There is one drawback to these being summer roses, their period of flowering is very short, and then the beds are flowerless for the rest of the season; this may be obviated by planting other things amongst them. This can easily be done without interfering with the roses, and it is a good opportunity of getting a display of brilliant flowers in the autumn, probably G. Brenchleyensis, as being hardy and brilliant, would be the best for the purpose. *Wild Rose.*

Cultural Memoranda.

KALANCHOE CARNEA.

This plant (see fig. 48, Feb. 12, 1887, p. 211) is certainly an acquisition, and seeing that it may be easily raised from seed, and blossoms during the winter months, it should be extensively grown. I sowed a packet of seed in February last, which germinated freely, and the plants, which were grown throughout the summer and autumn in an intermediate temperature, and were subsequently placed in a stove, are now beginning to flower. The flowers, which are fragrant, and of a delicate pink colour, are produced in corymbs similar to those of Kalosanthes coccinea, a well-known plant belonging to the same family. Seedling plants are not disposed to branch, but grow erect, and form one large cluster of flowers; if stopped, however, when about 5 inches in height, they break into four or five growths, each of which terminates in a flower-head. If young plants are cut back after the flowering season, and grown on a second year, it is probable that they will make compact bushy specimens, and thus prove to be of still greater decorative value. The compost which appears to suit the plant is turfy loam mixed with sand, and a moderate quantity of leaf-soil; and as its foliage is fleshy, water should not be afforded lavishly, and small pots used. Although I have grown Kalanchoes in a warm-house, I think they will succeed during the summer and early autumn in a greenhouse or a cool pit. *Thos. Coomber.*

Aralia leptophylla.

This Aralia, in a young state, is invaluable for table decoration, and for that purpose it compares favourably with some other species, including A. Veitchii and its slender variety gracillima. But it is as a large plant—in which stage it is not frequently met with—that I wish to draw attention to it, for when planted out, in a warm conservatory, and carefully treated, it grows to a large size, forming an elegant specimen, and affording effective contrast with Palms and other plants usually planted. Growing in this way it retains its foliage for a long time, and attains to 2 feet in diameter. The bed should be well drained, and consist of peat and turfy loam in about equal parts, mixed with coarse sand. It should be made quite firm whilst dry, and before the plants are transplanted. *Thos. Coomber.*

Plant Notes.

JATROPHA URENS.

This is a rare and curious South-American plant that is very seldom met with, and of which there are two plants in one of the hothouses at the Birmingham Botanical Gardens but which Mr. Latham keeps suspended out of reach, because of their poisonous properties, as the following examples prove. When at Kew about the year 1856, Mr. Latham was accidentally stung in the wrist by this plant, and immediately experienced a curious sensation, which led him to suck the spot stung, so as to eradicate any poisonous matter deposited therein, but the wrist became very much swollen, and remained so for some three or four days. On mentioning the subject to the late Mr. Smith, he remarked that he had been stung in the same way, but evidently more forcibly, as it led to his becoming insensible for about two hours, and his arm was very much swollen and in pain for a longer time. It belongs to Euphorbiaceæ, and has handsome, roundish, cordate, three to five-lobed leaves, the divisions toothed and pinnatifid. *W. Dean.*

Jasminum gracillimum.

Now that there are strong established plants of this useful white fragrant flowered introduction of Messrs. Jas. Veitch & Sons in gardens, its usefulness and beauty gets more appreciated every year. In the gardens of Edward Moon, Esq., at Cashio Bridge Watford, its dense heads of pretty flowers have decorated a back wall in a tolerably cool house for some months, the flower-heads keeping up a constant succession of blooms. It would be interesting to know how many hundreds of them the plant has borne in one season, but it would be a difficult thing to count them.

Adhatoda cydoniæfolia.

This, when well grown, is a showy plant flowering in the autumn, but it unfortunately belongs to an order of plants the majority of which produce flowers that are comparatively useless for decoration when cut from the plant. Nevertheless, many of the Acanthaceæ, viz., Thunbergia, Meyenia, Hexacentris, Ruellia, Aphelandra, Justicia, Mackaya, and many others, are beautiful and decorative when in flower; and the present plant is not lacking in this point. Being scandent in habit, it is better when grown on a wall, trellis, or best of all on a pillar. It is a free grower, and produces in one season long, much-branched shoots, which have axillary flowers profusely borne on their extremities. The flowers produced in long succession are large and brightly coloured. The tube of the corolla is white, and the upper lip is tipped with purple. The lower lip is much larger, three-lobed, and of a deep shade of rich purple, with a centre that is striped with white; the plant grows well in ordinary loam, one of its chief requirements being plenty of water at the root and overhead, but of course omitting the syringing when the plant is in flower. After flowering, the plant should be cut hard back, and the superfluous shoots entirely removed. The plant may also be successfully flowered by being spur-pruned like a Vine—the best method when it is grown as a rafter plant. When not in flower the foliage, which is of a very dark green colour, is well adapted for clothing pillars, as it is very luxuriant. Propagation is by cuttings, and these, if grown on, and the points stopped once or twice, become of decorative value within one year from the time of insertion. When this mode of culture is followed, they are very effective as basket plants, and can be removed to the conservatory when in flower—a matter that is sometimes of importance. But it should not be forgotten that the plant is a native of the warm parts of Brazil, and cannot be kept for any great length of time in a low temperature or draughty structure. An average temperature of 60° is, however, ample during the winter. *F. R.*

Plants and Their Culture.

Winter-flowering Plants.—*Plumbago rosea.*—The Plumbagos are often grown to train on pillars or as climbers, and for winter decoration. P. rosea is one of the most useful and beautiful species if grown near the light, so as to get plenty of colour in the flowers. The plant may be grown readily from cuttings taken early in the spring, and should get plenty of heat and moisture while making growth, removing it afterwards to a cooler house for a time. If dwarf plants are required, stopping the shoots whilst growing should be practised, and the plants kept near to the grass. Six-inch pots are large enough for the last re-potting, giving the plants at that time a compost consisting of equal parts peat and loam, with a few half-inch bones placed over the crocks, and sufficient sand should be mixed with the compost to keep it open. P. rosea requires to be carefully watered. I find it best to use old plants when long racemes of bloom for cut bloom are required, or to cover the front part of a house. For this purpose the plants are cut hard back, shaken out of the soil, and potted in 8-inch pots, and supplied liberally during growth with manure water. These old plants afford a large quantity of bloom from November to January, and when flowering is at an end they may be thrown away.

Impatiens Hawkeri Sultani.—This species of Balsam is grown for summer decoration mostly, but by sowing seed late in the summer and growing the seedlings in an intermediate temperature, useful blooming plants may be obtained. Cuttings also may be struck at any time, and these, if kept growing, soon make nice plants; but I prefer seedlings, the plants being well shaped, and requiring no pinching of the points. Cuttings are placed singly in rich compost in small 60's, and when rooted they are shifted into 48's for winter blooming, keeping the plants close to the light. I. Hawkeri is beautiful when in flower at this season, and if the plants are carefully attended to, a good return is obtained at small cost of space and time. Plants to bloom now may be got by cutting back the spring-sown plants, and giving them a shift into larger pots and a slightly higher temperature through the early autumn months; only the flowers will be smaller if this method be followed, and the plants take up much space. Impatiens require rich compost to enable them to grow satisfactorily, and a small amount of bone-dust should be added to the compost, as well as liquid manure when well rooted.

Thyrsacanthus rutilans.—This plant, once commonly cultivated, is rarely seen, which may be attributed to it being very liable to be over-run by a brown scale, which will often destroy the bloom when it is just protruding; but I have found that if it is treated in the same manner as the Gardenia, that is, constantly syringed with clear water, and occasionally with petroleum emulsion, the scale insect is soon got rid of. To grow it successfully small 48's are large enough pots, and cuttings may be struck early in the year singly in pots plunged in a brisk bottom heat, using a potting compost of good yellow loam, peat, and leaf mould in equal parts, and a small quantity of dung, and at the last shifting with less leaf mould. Pinch the shoots frequently so as to keep the plant dwarf, and grow it near the light in a stove till it is well rooted, when, if carefully managed in regard to ventilation and water, it may be removed to a frame, there to remain the summer through. By adopting this method of growing it, the plant soon comes into bloom after being put into its winter quarters, and the plant is dwarfer and less subject to be infested with scale.

Eranthemum pulchellum and E. Andersonianum.—E. pulchellum should be grown much in the same way as the Thyrsacanthus. It is readily propagated from cuttings of young wood in the early spring, and grows well if potted in a compost of loam, peat, and a small quantity of leaf mould and silver sand, finally shifted into 32's, and kept in a growing state near the glass, free from insects in stove, and with abundance of water and liquid manure when the pots become full of roots. The Eranthemums mentioned above are those that are the more useful in the winter; the plants being very profuse bloomers when managed skilfully, and easily grown to a large size; but for general purposes small plants are better. One year old plants, once cut back and repotted, and afforded cool frame treatment during the summer months, make short growths and bloom abundantly. *Geo. Wythes, Syon House, Brentford.*

The Kitchen Garden.

Cauliflowers.—Seeds of Cauliflower, Veitch's extra Early Forcing, Veitch's Pearl, and Early Snowball, should be sown now, and early in January Dickson Brown and Tait's Eclipse the finest variety extant, to succeed the earlier sorts. Sow thinly in shallow boxes, and when the plants have come up, keep them quite close to the glass, affording them as much air as possible, but retaining them in a gentle heat. When they are of a size fit to handle, fill some boxes with soil; and a few days after the soil has got warm in the house, prick the seedlings out at three inches apart. A pinch of Brussels Sprout seed should be sown, and similarly treated. The Rosebery and Dalkeith are the best for early use. At the same time sow a little cabbage seed, choosing Stuart and Mein's No. 1, Ellam's Early, Veitch's Earliest of All, Little Pixie, and a few of the best second earlies, according to taste. These, if treated in the same way as the Cauliflower, will come in close on autumn-sown plants, and prove tenderer and more succulent than those.

Forcing.—Continue to bring in Seakale roots, Witloof, Rhubarb, and other subjects at regular intervals into the forcing-house, so as to allow no break in the supplies. Sow warm frames with French Horn Carrots, Radishes, and Lettuces. Extra early Milan Turnips may also be sown, but the heat must be very mild, or the plants will bolt. See that the supply of Mint, Tarragon, and Chervil is kept up. A box or two put in at regular intervals will be sufficient. *Wm. M. Baillie, Luton Hoo.*

Advertisers are specially requested to note, that, under no circumstances whatever, can any particular position in the paper be guaranteed for advertisements occupying less space than an entire column.

GARDENERS' CHRONICLE OFFICE TELEGRAMS.
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THE GARDENERS' CHRONICLE,
Vol. V., Third Series, JAN. to JUNE, 1889.
W. RICHARDS, 41, Wellington Street, Strand, W.C.

APPOINTMENTS FOR THE ENSUING WEEK.

SALES.

WEDNESDAY,	JAN. 1	Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms. 20,000 Lilium auratum, and 5000 other Lilies, at Protheroe & Morris' Rooms.
THURSDAY,	JAN. 2	10,000 Lilium auratum, &c, from Japan, at Stevens' Rooms.
FRIDAY,	JAN. 3	Imported and Established Orchids, at Protheroe & Morris' Rooms.
SATURDAY,	JAN. 4	Roses, Fruit Trees, Shrubs, Border Plants, &c., at Stevens' Rooms.

CORRECTED AVERAGE TEMPERATURE FOR THE ENSUING WEEK, DEDUCED FROM THE OBSERVATIONS OF FORTY-THREE YEARS, AT CHISWICK—36°.9.

The Year's Work.

LOOKING back to the transactions of the year now at its close, it becomes evident that the period has been one of great activity in the horticultural world. Judging from indications, the year has also proved a prosperous one, and one that should inspire gratitude for the present, and confidence for the future. The weather, that stock subject for all of us, but which all will admit is of more than ordinary moment to the gardener, has not on the whole been very propitious; at one time, indeed, we seemed to be threatened with a repetition of the drenchings and disasters of 1879. Caterpillars destroyed the foliage, and something —or some things, we hardly can define precisely what—prevented the fruit crops from attaining a good average, but that is nothing unusual in this country. The mention of fruit reminds us that we have heard less exaggeration and wild anticipations of the profits to be derived from an extension of fruit-culture than in preceding years. A more practical and reasonable spirit now prevails. The action of the Fruiterers' Company, the influence of the late LORD MAYOR, and other causes, among which we must not overlook the publication of the Reports of the Apple and Pear Conferences at Chiswick, and of Mr. WRIGHT's book on the subject, will ensure more reasonable consideration of the subject in the future.

The collection and diffusion, by responsible and competent men, of authentic information, will, no doubt, effect much in developing fruit culture on a large scale as a profitable occupation in this country, and on a smaller scale as a useful adjunct to agriculture. Many an orchard will, in consequence, be rescued from the neglected condition into which it has been allowed to fall; many worthless sorts will be grubbed up, and much more care will be expended in packing and marketing. Before leaving this subject, we may call attention to the application by means of a spray-pump of solutions of copper-sulphate, of various arsenites, or of petroleum emulsions, which, varying in kind and in strength, according to circumstances, are so largely used in the United States, for the various insects and fungous pests of of fruit trees, and of other crops, but which our cultivators seem strangely loath to adopt. We do not believe our "'cute cousins" would employ these methods so largely as they do were they not of proved practical utility. But we Britishers are slow to adopt new procedures, which is not altogether unreasonable, but we are also wanting in the zeal and interest required for making preliminary trials and inquiries, which is a much more reprehensible thing. This, by the way, is a subject which might be taken up in the experimental garden at Chiswick.

Passing to trade matters, the horticulturists have, we believe, shared in the increasing prosperity of the country, and have been much exercised, like other commercial men, in the question of Railway Rates. The elaborate table which we gave in our issue on April 20, 1889, must have opened the eyes of many to the anomalies and injustice of the present system.

Of the "new" plants, or improved varieties introduced during the year, we propose to speak in detail in subsequent issues; but the flowering of the gigantic Arum, known as Amorphophallus titanum, under the care of Mr. WATSON, at Kew, is too remarkable an event to be passed over without a special note in a general summary of the events of the year. For the history of the plant, together with illustrations of foliage and flower, we may refer to our number for June 15, 1889, p. 755.

While referring to new plants, we cannot but look forward with eager expectancy to the treasures which the mountains of equatorial Africa and of New Guinea will almost certainly yield. Of even more importance, so far as this country is concerned, are the explorations of the mountains of central China by Dr. HENRY among our own countrymen, and by various French and Russian explorers. The botanical results hitherto obtained, as published by Mr. HEMSLEY, M. FRANCHET, and Dr. MAXIMOWICZ, are most interesting botanically, and full of promise from a horticultural point of view. Kamtschatka also is a field to which our collectors should turn their attention. We have in former years commended Dr. GUILLEMARD's volume, *The Cruize of the Marchesa*, to the careful perusal of our readers, but we do not think anyone who reads of the marvels of Kamtschatka in it pages will blame us for again calling attention to it as a hunting ground for the horticulturist.

Apart from the ever-increasing accumulation of "new" plants and their consequent study and registration, the chief original work of the year, from the point of view of horticulture, has taken place in the departments of vegetable physiology and pathology. Experiments in hybridisation have been very numerous, and we have yet to see the results of countless experiments in this direction. If there are many to equal, whether for interest or beauty, the "Lælio-Brassavolo×Cattleya Mossiæ," or whatever it should be called, the horticulturists and botanists of the future have indeed their work cut out for them; while the appetite for novelty and beauty on the part of the public, bids fair to be amply satisfied. The fungus diseases of Snowdrops, Humeas, Lilies, Chrysanthemums, &c., have been studied and illustrated in these columns by PROF. MARSHALL WARD, Mr. WORTHINGTON SMITH, and Dr. COOKE. The literature pertaining to the chemistry of horticulture, especially as regards the nitrogen of vegetation and its source, has received many notable additions from the pen of Sir JOHN LAWES, Dr. GILBERT, and others.

The important, but uninviting, subject of the nomenclature of plants for garden purposes, has attracted much attention this year, and is still under the consideration of a committee appointed for the purpose by the Royal Horticultural Society.

As a gratifying evidence of the estimation in which scientific horticulture is held, and of the deepening conviction of the importance of co-operation between botany and horticulture, we may point to the fact that no fewer than three of the leading botanical societies of Europe have this year horticulturists for their presidents. Comte de KERCHOVE, the genial and eloquent President of the famous Horticultural Society of Ghent, so well known to many of our readers, presides also over the destinies of the Royal Botanical Society of Belgium. M. HENRY DE VILMORIN, one almost as well known and as highly esteemed on this side of the Channel as on his own, is the President of the Botanical Society of France; while we have just lately had an opportunity of congratulating Mr. LINDSAY, the Curator of the Royal Botanic Garden, Edinburgh, on his election to the Presidency of the Botanical Society of that city. The conferring of the degree of Master of Arts on Mr. BURBIDGE by the University of Dublin is also an event on which horticulturists of this country may well be congratulated in this connection.

Exhibitions have been countless and ceaseless, from the time of the midwinter exhibition of Chrysanthemums in January last, which meant chiefly Chinese Primroses, to the last which took place on December 11. The Chrysanthemum Society may thus claim to have well-nigh filled up the year with its periodic shows and meetings. This is perhaps the more appropriate, as it was ordained that this year should be taken for the centenary celebration of the introduction of the Chrysanthemum into our gardens. Chiswick and Ghent, Berlin and Paris, Edinburgh and Hull responded to the call, and the Chrysanthemum—its history having been cleared up by Mr. HEMSLEY and Mr. HARMAN PAYNE—begins its second centenary amid enthusiasm which has few parallels.

It is astonishing what a number of centenary anniversaries may be unearthed by the curious. Their value in enabling us to clear up the history and take stock of our possessions is obvious. The most important of all, though clearly not the one of most general interest, is the centenary of the publication of A. L. DE JUSSIEU's *Genera Plantarum*, which supplanted the system of LINNÆUS and which still remains the foundation of all our modern systems.

The genus Eucalyptus was founded in 1788, and E. resinifera is stated to have been introduced from New South Wales in that year, though it appears not to have been described till 1790. It is clear, however, that this is about the time of the Eucalyptus Centenary. When we consider the great benefits to mankind that have already accrued from this discovery, its claims to a centenary celebration will be seen to be much higher in a material sense than any the Chrysanthemum can boast of.

The Dahlia Centenary has been celebrated this year in due form, and with less uncertainty as to date; and Mr. LINDSAY in his recent Presidential address to the Botanical Society of Edinburgh, has reminded us that this year is the hundredth anniversary of the introduction into our gardens of the Pitcher Plant, Nepenthes distillatoria.

Exhibitions and shows of the ordinary character have followed in bewildering profusion, their number, we fear, bearing but a feeble relation to their supposed objects. Amongst the exceptions must be classed the meetings and shows of the Royal Horticultural Society. The

Tuesday meetings have been generally interesting; the large show at the Temple Gardens was a very fine one, and excites our hopes for that which is to come in May next. The conferences and exhibitions at Chiswick have been of singular interest and importance. We have already commented on the lately issued report of this very remarkable Rose Show and Conference, and we hope shortly to be able to announce the publication of the report of the Vegetable Show and Conference, the results of which will be of such great interest to gardeners and lovers of garden-produce, as well as to seedsmen. Such shows as these, from their educational character, are more beneficial to horticulture and to the public in general than are the ordinary competitive shows, in which amusement and recreation only are sought by the general public, and where the benefits to be derived, though, of course, not wholly so, are more particularly of a personal and individual character. In addition to these conferences, very great activity has prevailed in the Society; and, at the risk of being invidious, where all have worked with a will, we cannot refuse the tribute of recognition and gratitude for the exertions of the Honorary Secretary. In the gardens at Chiswick various alterations have been carried out, experimental trials of flowers, fruit, and vegetables have been continued, and much more might be done in this way were the number of Fellows increased, and the income correspondingly enlarged. Gardeners and amateurs do not fully realise the advantages they might derive from Chiswick, and the great importance there is, not only of adequately maintaining, but largely developing, an experimental garden devoted to the impartial testing of useful plants, the methods of cultivation, and the means of combating injurious agencies.



Fig. 108.--Garden view at Falmouth, taken in December, 1888. (see p. 747.)

Horticulture played an attractive part at the great Paris Exhibition, but where the interests are so numerous and so diversified, it is not a

matter of surprise if the results in particular departments are less than could have been wished. The arrangements for facilitating the work of reporters in Paris need to be improved when another exhibition of the kind takes place.

Passing from exhibitions in which we have to deal with the activity of the present, we may devote a few lines to the provisions made for future contingencies on the part of those who have done their share of work, and who have, from one cause or another, won the sympathy of their colleagues. The Gardeners' Royal Benevolent Institution, which combines the advantages of a provident and of a charitable fund, has been extraordinarily active this year. Mr. CUTLER, the ever-energetic Secretary, discovered that it was the Jubilee year of the Institution, or if it was not, that it ought to be, and the result was that a special fund was raised which proved adequate, without at all straining the resources of the Institution to place on the list of beneficiaries all the seventeen candidates that had been unsuccessful at the previous election. That was a triumph indeed, but it furnishes no reason for halting, for we regret to see that this year the number of candidates is again very largely in excess of the number that can be elected.

The Gardeners' Orphan Fund was from the first taken up with spirit by the gardeners, and it is progressing in a degree that is satisfactory to the promoters, though here, again, by no means proportionately to the demands made upon it.

The Gardeners' Mutual Benefit Society, which is of the nature of an insurance fund, shows a favourable record during the year, and will, we trust, continue to receive the support of the gardeners thoughtful for the future.

The literature of gardening has kept pace with the general progress, and some books deserve special mention as being of more than ephemeral value. Among them we may note the completion of the *Dictionary of Gardening*, edited by Mr. NICHOLSON, the PHILIP MILLER of our times. The book has been received with general commendation, so that we may hope shortly to see a revised edition, made even more complete than the present one by the insertion of names at present omitted.

Dr. SCHLICH'S work on Forestry is, without doubt, the book of the year as regards subjects coming within our scope. Amid the flood of common-place or ill-digested publications relating to the cultural art, this stands among the few that will be looked up to in the future as standard works, and it will create some surprise among those who look upon forestry and gardening as matters of empirical routine.

Mr. KIRK'S *Forest Flora of New Zealand* has, for readers in this country, more of a botanical than of a strictly practical significance. It has been so recently noticed in these columns, that we need do no more now than repeat our opinion, that this forms one of the most interesting and valuable volumes with which cultural literature is enriched.

From the antipodes also comes MAIDEN'S useful *Native Plants of Australia*, for a notice of which we must refer to a previous page, but which we may say takes a foremost rank among publications devoted to economic botany.

To the publications of the Royal Horticultural Society we have already alluded, and specially in our last issue. We cannot, however, forbear from mentioning in this place the important communication of Mr. H. J. VEITCH on the cultivation of Orchids, and which is destined to be "well thumbed" by the orchidists. Messrs. VEITCH'S *Manual of Orchidaceous Plants* as it progresses, also bears testimony to the conscientious care with which it is prepared. All that we have heard to its detriment is an Oliver Twist like demand for more! Messrs. SUTTON'S *Culture of Vegetables and Flowers from Seeds and Roots* has reached a fourth edition, which is a sufficient sign of the esteem in which it is held. Dr. WALLACE'S work on Darwinism is a book that thoughtful gardeners should read when they get a chance; while the reprint of Dr. ASA GRAY'S papers, lately alluded to in these columns, will be found to contain a summary of the botanical history of the past half century, such as the general reader interested in such matters will be glad to possess.

PROFESSOR MARSHALL WARD' two little books on the *Diseases of Plants* and on the *Diseases of Timber* should be carefully studied. We may hope in future to see new editions of these books of a more comprehensive character, and with a more justly balanced sense of proportion between the subjects treated of.

MR. PLOWRIGHT'S *British Uredineæ*, comprising a history of the Rust fungi and their allies, is an original work of the highest merit, and of great interest to cultivators.

It is sad to have to pass from the record of so much real progress and the anticipation of so much more in the future, to the obituary list of the year. The enumeration is not only a long one, but it will be seen that the losses among representative men have been specially heavy. These are the men who have contributed so valiantly to the progress we have spoken of, whose memory will be cherished accordingly, and whose example will stimulate those still in harness or "coming on" to do their best in the work which it may fall to their share to accomplish. Among the amateurs, a class to whom Horticulture has always owed so much, we may mention the venerable Lord EVERSLEY, the Hon. and Rev. J. TOWNSEND BOSCAWEN, a landscape gardener of repute, and who possessed a wide knowledge of plants and their culture; Mr. J. T. PEACOCK, whose collections of succulent plants, and latterly of Orchids, were so remarkable; and Dr. SANKEY, who was one who brought his scientific training to the study of plant-life and the practice of hybridisation.

Among the botanists, we have had to record the loss of that mighty magnate, M. J. BERKELEY, whose encyclopædic knowledge was, up to the last few years, always at the disposal of the horticulturists. Almost from its foundation to the present time, BERKELEY was a contributor to the *Gardeners' Chronicle*, and a trusted referee to whom successive editors never turned in vain. It is easy to indicate what he did know, but it is difficult to point out a subject of which Mr. BERKELEY did not know something. Verily, of him it may be said, with little exaggeration, that while he knew everything of some things, he also knew something of everything. He was active with his pen till within the last two or three years, when age cramped his hand rather than disabled his brain. He was really a noble man, and his works form his best record.

The initials, H. G. RCHB. f., were for many years as constantly to be met with as the "M. J. B.," indicative of the contributions of BERKELEY; indeed, since the death of LINDLEY, the study of Orchids, from a systematic point of view, was mainly in his hands. He had made that order so much the study of his life, his accumulations of material of all kinds were so large, that no botanist cared to trench upon what was felt to be peculiarly the province of the Hamburgh Professor. As a consequence, almost everything of interest connected with Orchids from all parts of the world passed into his hands, and the results (so far as horticulture was concerned) were published in these columns. As the lineal successor to LINDLEY in the historianship of Orchids this was appropriate. But it is a source of grief to his friends, and of deep pain to ourselves, whom he served so loyally, to have to record that, by the provisions of his will, he has left a stain on his reputation as a man of science, which cannot be effaced. Fortunately, the impediments and mischief caused by the enforced inability to consult his collections and notes for the next quarter of a century, will be very materially neutralised by the action of the Director of the Royal Gardens, Kew, who at once took steps to make known to the Orchid public the existence at Kew of large and varied resources for the study of Orchids. Among other collections, LINDLEY'S specimens are preserved at Kew, and the collection of living species has of late been greatly extended and improved. All these collections, so far as possible, are at the free disposal of the Orchidists and students.

We may here repeat the suggestion that has been made, and, we believe, already partially acted on, that possessors of plants actually named by REICHENBACH should, as opportunity offers, send flowers of them to Kew for preservation. These would have almost the same degree of authority as the original flowers.

The decease of the botanist-traveller, JOHN BALL, and that of Dr. MCNAB, the Professor of Botany at the College of Science, Dublin, are of too recent occurrence to need more than passing mention.

Among professional gardeners who have been taken from us, ROBERT MARNOCK stands out conspicuously. He was not only a gardener, but the first landscape gardener of his time—a man as much beloved for his personal worth as admired for his art and taste. His death is too recent to need further comment. JOHN LANE, of Berkhamstead, who died at an advanced age, was also too conspicuous a figure to be soon forgotten among his associates. J. S. TYERMAN was not only a good gardener, but had a botanist's knowledge of plants. Among the rank and file, the losses have, as usual, been numerous. Among them, as names which will long be held in honour by their fellows are those of GEORGE SAGE, G. B. TILLYEARD., and G. D. VALLANCE.

With this passing tribute to those that have gone before, we close this partial record of the year's work and events, and look forward hopefully to that which is to come. As far as "the *Chronicle*" is concerned, we are confident that the well-tried support and aid of our contributors and friends, to whom its continued success and prosperity are due, will no more fail us in the futnre than does our gratitude for the help they have afforded in the past.

Railway Rates: Small Parcels and Empties.

THE Board of Trade inquiry still continues to produce results satisfactory to horticulturists. Not the least of the objections lodged by the Nursery and Seed Trade Association was that relating to what is known in railway parlance as "smalls." The limit originally fixed by the railway companies to "smalls" was 560 lb., but it was objected by the Association that this limit was too high for the horticultural trade. It was pointed out that many ordinary parcels sent by the trade do not exceed that weight, and that this provision would enable the railway company to charge double the maximum rates for the highest class, instead of the rate fixed for the class in which the particular goods in

question were placed. The limit might be a very fair one for some trades, but to the horticultural trade it would have worked a great injustice. Hence, it was considered desirable to press this objection with great force, and the result is, that the railway companies have agreed to a modification which will fully meet the objection, and to which we will presently refer.

A concession has also been granted by the railway companies in the creation of what is called a "perishable merchandise class," and which comprises of the articles mentioned in the supplement to our issue of April 20 last, the following:—Apricots, hothouse fruit, Grapes, Nectarines, and Peaches, all of which were originally placed in the highest class. These will now be carried (if in quantities of less than 560 lb.) at passenger train rates for small parcels, as follows:—

For the first	10 miles, at	1*d.*	per mile per cwt.	
,, next	20 ,,	0½*d.*	,,	,,
,, ,,	20 ,,	0½*d.*	,,	,,
For remainder of journey		0½*d.*	,,	,,

The minimum weight will, however, be 560 lb.; but by way of compensation for this, the rates will include terminal charges.

As regards the conveyance of "smalls" by goods train, the following has been agreed upon with reference to the articles placed in Classes 1 to 5.

Parcel, not exceeding in weight	28 lb.	will be charged as for	1	cwt.
,, over 28 lb., and not exceeding in weight	56 lb.	,, ,, ,,	1½	cwt.
,, over 56 lb., and not exceeding in weight	1 cwt.	,, ,, ,,	2	cwt.
,, over 1 cwt., and not exceeding in weight	2 cwt.	,, ,, ,,	3	cwt.
,, over 2 cwt., and not exceeding in weight	3 cwt.	,, ,, ,,	4	cwt.
,, over 3 cwt., and not exceeding in weight	4 cwt.	,, ,, ,,	4½	cwt.
,, over 4 cwt.		,, ,, ,,	5	cwt.

One advantage thus gained is, that instead of the rate for conveyance being "double the maximum rates and charges in Class 5," the rates and charges will be applicable according to the class in which the goods are placed; thus the charges in Class 5 are (we are taking the schedule of the London and North-Western Ry. Company), for the first 20 miles, 5*d.*; for the next 20, 4½*d.*; for the next 20, 4*d.*; and for the remainder of the distance, 3½*d.* Hitherto these charges would be doubled in the case of smalls; but now, if a small parcel of goods placed in Class 1 be sent by goods train, the charges will as follows:—

For the first 20 miles,	instead of	10*d.*	per mile	3*d.*
,, next 20 ,,	,,	9*d.*	,,	2½*d.*
,, ,, ,,	,,	8*d.*	,,	2*d.*
For remainder of distance	,,	7*d.*	,,	1½*d.*

Another advantage gained is, that the trade gets the benefit of the averages of the above weight. Hitherto the minimum weight charged for smalls was as for 28 lb.; now they will be charged for as mentioned before. This must be set off as against the reduction in the rate, and it will be found, on a careful comparison of the two, that whereas up to 1 cwt. the trader may or may not (according to the class in which the goods are placed) have the advantage, yet above 1 cwt. up to the quarter of a ton he has all the advantage even if the goods are in the highest class.

The rates for carriage of "smalls" by passenger trains (other than for perishable merchandise before mentioned) at present remains untouched.

"Empties" enter very largely into the consideration of the trade, and an arrangement has been come to which is also eminently satisfactory to the trader. Originally empties were placed in the highest class, and the reason assigned for this was that they occupied as much room in returning as in going; but the answer to this was that the weight was not the same. By the arrangement come to, returned empties, if from the same station and consignee to which and to whom they were carried full, to the same station and consignor from which they were carried full, shall be deemed to be included in the same class as comprises the goods which were carried in them when full.

"Kew Bulletin."—The principal articles this month relate to cases of poisoning in Persia from Turnsole, an Euphorbiaceous plant furnishing a purple dye. It is, of course, not at all surprising to botanists that people eating the leaves of such a plant should suffer in consequence. Mussaenda Coffee, the produce of Gærtnera vaginata, is shown to possess no Caffein, and to be useless as a substitute for Coffee. Professor Church continues his researches as to the food grains of India. A large part of the present issue is occupied with an article on the cool cultivation of tropical and sub-tropical plants, beginning with a sentence that is very discouraging to those who believe that practical horticulture has a right to look to vegetable physiology and anatomy for guidance and profitable suggestion, and, moreover, that it will not look in vain. That, contrary to expectation, some plants from the tropics will thrive under cool treatment, only shows that the plants in question possess greater power of adaptation than was before suspected. True, we cannot at present always say by simple inspection what plants possess this power of adaptation, but as the explorers and the botanists trace more and more accurately the geographical distribution of the plants, and the varying conditions under which the plants grow, and as the anatomists make themselves more and more fully acquainted with their structure and mode of growth, and with the relations of structure to function and to external conditions, so may we expect that they will accumulate knowledge which the routine practitioner with all his experience would be a long time gaining, if ever he succeeded in doing so. The phrase in question is introductory to an interesting account of the vegetation of the Riviera and of several of the principal gardens visited by Mr. Watson between Hyères and Mentone. The details given as to the climatal conditions of the district and their relation, are in contrast to the too absolute statements in the introduction. Horticulture no doubt is like the practice of medicine to a large extent, an empirical art, but it is surely our duty to do what we can to place it on a surer and more productive foundation than that of mere individual experience.

Orange Culture in Florida.—A correspondent sends us a warning that the statements of unknown agents should not be implicitly relied on, and that every care should be taken before taking any decided step, or disappointment may ensue. This is a piece of advice which it seems cannot be too often repeated.

Agricultural Returns.—We take the following extracts from the returns made to the Government for the year 1889:—"The area under arable land is less altogether by 70,700 acres, 16,867,500 acres being returned, as compared with 16,938,200 acres in 1888. The relative proportions of the whole area of cultivated land in Great Britain is this year 48·5 per cent. in permanent pasture, 24·7 per cent. under corn crops, and 10·1 per cent. under green crops; the remainder being under Clover, Flax, Hops, small fruit, and fallow land. Orchards in Great Britain show an enlarged area, covering 199,897 acres, as compared with 199,178 acres in the previous year; but, nevertheless, the quantity of fruit grown in this country is very far below the demand. Importations of raw apples and other raw fruit unenumerated increased very considerably in 1888 as compared with those of the preceding year; and in the first eight months of 1889, as compared with 1888, largely augmented quantities in these descriptions of fruit, taken together, appear in the Customs Returns. The imports under these two heads amounted in 1888 to £2,417,445 in value. The acreage under market gardens is this year 69,620 acres in Great Britain, as against 67,383 acres in 1888. In land used by nurserymen for the growth of trees, shrubs, &c., the Returns for 1889 show a slight increase of 384 acres over the acreage of last year. For small fruit, such as Currants, Gooseberries, &c., there is an increased acreage shown in Great Britain of 5200 acres. The extent of land returned under its culture, whether in orchards or market gardens, amounts this year to 41,900 acres, and the collecting officers again report instances of the further disposition towards increasing production in this direction, as having been encouraged by the satisfactory character of the recent experiments made in some districts to meet the growing demands of large neighbouring towns."

The Sacred Lily of China.—The Polyanthus Narcissus grown in China as an emblem of good luck, has already been described and figured in our columns, see p. 668, and April 13. Messrs. Barr & Son, who have received a consignment, tell us that any shallow bowl may be used, and should be filled up to within an inch from the top with small pebbles or sand, in which the base of the bulb is to be immersed, leaving the greater portion of the bulb exposed. The water should just cover the pebbles. A draughty situation, and the proximity of fire or gas should be avoided. When the growth has advanced, as much light as possible should be given the plant. Messrs. Barr describe the rapidity of growth as magical.

The Winter Moth.—Mr. Beach the well-known fruit-grower, at Brentford, has devised a trap for these insects, in the shape of a shade fixed over a lamp. The inner side of the shade is smeared with a greasy composition so that the insects attracted by the light are captured in large numbers by the shade. Mr. Beach suggests that the local authorities in the vicinity of the fruit gardens near London and other towns might permit the shades to be affixed to the lamps of the district. If the growers would combine to use these traps in the plantations, they might well-nigh extirpate the pest.

Amateur Gardening.—The Christmas number of this useful and well-edited periodical, contains a good article on garden foes, some sensible directions for suburban gardens, a coloured plate of Pernettya, here not inappropriately called the Prickly Heath, as well as numerous "seasonable" articles.

Weights and Measures.—Each finger breadth among the Egyptians was supposed to be equal to four grains of Barley placed breadthwise (H. Spencer). The inch is divided into three Barley corns. "Thus, one of the earliest measurements of a degree comes down to us in Barley grains. . . . . Measures of weight, again, had a like derivation. Seeds seem commonly to have supplied the unit. The original of the carat used for weighing in India is a small Bean (Abrus precatorius). Our own systems, both troy and avoirdupois, are derived primarily from Wheat corns. Our smallest weight—the grain—is a grain of Wheat. . . . . Henry III. enacted that the ounce should be of the weight of 640 dry grains from the middle of the ear."

Orchids at the Victoria and Paradise Nurseries.—At these nurseries, Messrs. B. S. Williams & Son have a large and beautiful lot of Cypripediums in bloom, including calophyllum, calurum, cardinale, chloroneuron, Dautherii marmoratum, many varieties of insigne, meirax, nutans, &c. Of Odontoglossums, mention may be made of Alexandræ, gloriosum, purum, Harryanum. Amongst Oncidiums, there were Forbesii, macranthum, and tigrinum; several Dendrobes, including Linauianum; Limatodes rosea, some varieties of Lycaste Skinneri, and other species, and nearly all the known early flowering species and varieties of Calanthes. One

Cattleya, viz., C. Walkeriana, is in flower. In Lælia, Masdevallia, Miltonia, Vanda, and other representatives of the great Orchid family, and for whose enumeration our space is too limited, much will be also found of interest to the visitor to these nurseries.

CORDYLINE AUSTRALIS, which is hardy in parts of Cornwall and Devonshire, as shown in our crowded districts of a great city, and has induced the City to purchase areas for the purpose, of which the Weccacoe Park is the first.

when the huge many-branched panicles of fragrant whitish flowers are fully expanded, and is scarcely less attractive when the panicles have become compact and drooping from the weight of myriads of milk-white spherical berries. It is one of the most gigantic plants of the order to which it belongs



FIG. 109.—CORDYLINE AUSTRALIS AT ENYS, CORNWALL. (SEE P. 741.)

illustrations of Cornish gardens, is almost the only plant in the New Zealand flora, says Mr. KIRK in his most valuable *Forest Flora of New Zealand*, that gives a distinctive character to the scenery; when growing on river-banks, or on the margins of boggy woods, or on islands in large lakes, it gives a peculiar palmy feature to the landscape, which is unique and attractive, and affords different effects at different seasons of the year. It is most light and graceful (Liliaceæ); specimens from 30 feet to 40 feet high are common, but in the King-country I observed several specimens 60 feet high, with trunks upwards of 5 feet in diameter at the base. In an account of Mr. COLENSO's early botanical journeys in the central portion of the North Island, he mentions a large specimen in the trunk of which a Patea Maori had constructed a small room in which to keep his baskets and tools. It was fitted with a door, and sufficiently

PHILADELPHIA.—Thanks to the initiative of Mr. Councillor MEEHAN, the State of Pennsylvania has allotted 50,000 dols. to the building fund of the Academy of Sciences. The museum and library will scarcely be rivalled by any similar institution in the States. Mr. MEEHAN has recently presented several valuable books to the library. Mr. MEEHAN has also recognised the great value for sanitary purposes of small parks sprinkled throughout the

high to allow a man to stand upright within it. The tree was living, and was 20 feet 2 inches in girth at the base. Young plants up to 10 feet high have a simple erect stem, with entire leaves 2 feet long or more, and from half-inch to 1 inch in width. The stem remains simple until the first panicle of flowers is developed at the apex, when one or more branches are given off, which are ultimately terminated by panicles, and again give rise to new branches; this is repeated until a compact round-headed tree is formed, with a naked trunk; or long branches may be given off irregularly from a few feet above the ground. At first these branches carry a large head of spreading green leaves, each leaf being 1½ foot to 2 feet or more in length, and from 1½ inch to 2 inches broad, contracted just above the broad base by which it is attached. The leaf is flat, with numerous fine parallel veins, but no distinct midrib, and is narrowed into a sharp point; ultimately the lower part of the stem is sheathed by the pendulous dead leaves, which in sheltered places are persistent for seven or eight years or more.

National Chrysanthemum Society.—The annual dinner of this flourishing society took place at Anderton's Hotel, Fleet Street, on the 19th inst. Lord Brooke, M.P., the President of the Society, presiding, supported by Sir Guyer Hunter, M.P., Sir Edwin Saunders, the Rev. W. Wilks, Captain Molesworth, and others. About 170 persons were present. The Hon. Secretary, Mr. W. Holmes, announced that the sum of £280 had been paid as prize money taken at the recent November show at the Royal Aquarium, and in addition, Lord Brooke handed to their several recipients the medals awarded by the society, of which notice was given in a former number. During the evening a considerabe sum was subscribed towards a special prize fund, including £20 from Lord Brooke, and the same amount from Captain Molesworth. The after dinner speaking was good throughout, and an excellent musical entertainment was arranged by Dr. Haskins. The challenge trophy, in the form of a handsome silver shield, competed for by societies affiliated to the National Chrysanthemum Society, was handed to Mr. C. Gibson, Morden Park Gardens, as representing the Wimbledon Society, the winners for the past year.

The Late H. G. Reichenbach's Heritage.—We learn from *Möller's Deutsche-Gärtner-Zeitung* that on November 20, 1889, the Herbarium, Scientific Works, &c., which Reichenbach left by testamentary disposition to the Imperial Hof Museum at Vienna, were dispatched from Hamburgh. The packing, carting to the railway station, and loading of four railway waggons, required three whole days to complete. There were 26 cabinets of plants, 134 large chests, 23 cabinets of books, and 1149 packets of dried specimens in books.

"Het Nederlandsch Tuinbouwblad."—Dr. J. Th. Cattie will retire from the editorship of this periodical at the end of the year. Dr. H. Van Hall will be his successor on the new year.

The Sandhills of Delaware and Massachusetts.—The Pitch Pine, Pinus rigida, is called on to perform for the shifting sands of the coast the same good office that the Pinaster does in western Europe.

Manure for Vines.—M. Ville gives the following as the composition of an artificial manure for Vines:—

Superphosphate of lime	400	parts
Carbonate of potash	200	,,
Sulphate of lime	400	,,
	1000	

The Field Club.—The first number of a new magazine for "lovers of nature," entitled *The Field Club*, and edited by Theodore Wood, is announced for publication on December 20, by Mr. Elliot Stock.

Burglary at Haarlem.—Who that has ever visited that delightful and decorous city, could imagine that it was there sort of thieves? So it is, alas! and Messrs. Krelage found themselves mulcted recently of some 500 medals which they had won in various exhibitions during many years. Fortunately, the repute of Messrs. Krelage does not depend on medals, however numerous, and though they have been mulcted of their metal, their merit is inalienable!

Orchid Notes and Gleanings.

MILTONIA VEXILLARIA SUPERBA.

A variety with smaller flowers than the type, and highly coloured. The plant grows at an elevation of 1,600—1,800 metres, in a climate, according to Lehmann, which at one season is extremely dry, at another extremity moist; the range of temperature being slight, the range being from 12° C. to 25° C. in the sun. *Lindenia*, t. 201.

Oncidium Marshallianum.

The bulbs and foliage of this plant are indistinguishable from those of O. crispum, with which it was imported; but the flowers are totally different, the segments being yellow barred with brown. *Lindenia*, t. 202.

Miltonia Blunti *var.* Lubbersiana.

A fine variety, with yellow segments, heavily blotched with chesnut brown, the lip rosy-violet at the base, whitish in front. The spike lately shown at Brussels had five flowers. *Lindenia*, t. 203.

Cattleya guttata Leopoldi.

The sepals and petals of this variety are reddish brown, suffused with a coppery tint, and heavily spotted with crimson, while the front lobe of the lip is of a very deep rich crimson-purple. Messrs. Sander advise that the plants be grown in pots in a compost of fibrous peat and sphagnum, and well drained. Abundance of moisture is given in the growing season, full exposure to light, with shading from the direct rays of the sun. The temperature should never be allowed to go below 60°. During the resting period they require but little water. *Reichenbachia*, t. 77.

Oncidium splendidum.

A Guatemalan species, flowering in winter, with recurved, not spreading, sepals and petals, a slightly emarginate lip without a shank. In colour the segments are greenish-yellow, heavily marked with transverse blotches of rich purple-brown, the lip is yellow. Messrs. Sander noting that the pseudobulbs have a tendency to rot, recommend for this species a tolerably warm and dry atmosphere, as much light as possible, and a moderate supply of water during the growing season. *Reichenbachia*, t. 78.

Lythe Hill, Haslemere.

The following Orchids are in flower at the present time in Mr. Hodgson's garden at the above place:—Angræcum sesquipedale, Calanthe densiflora, C. Veitchii, C. vestita luteo-oculata, C. v. rubro-oculata, Cœlogyne Lemoniana, Cypripedium bellatulum, C. B. superbum, C. Harrisianum, C. insigne, C. i. Maulei, C. Lawrenceanum, C. Sedeni, C. venustum, C. barbatum, Dendrobium speciosum, D. Hilli, D. chrysanthum, Disa grandiflora, Epidendrum fragrans, E. ciliare, Lælia albida, L. autumnalis, L. Dayana, Masdevallia amabilis, M. Davisi, M. Lindeni, M. tovarensis (one with 350 expanded blooms), M. Veitchii, M. melanopus, M. polysticta, Maxillaria grandiflora, M. venusta, Lycaste Skinneri, Odontoglossum Alexandræ, O. Andersoni, O. crispum, O. grande, O. hystrix, O. pulchellum majus, O. Roezlii album, O. Rossii, O. Rossii majus, O. Uro-Skinneri, Phalænopsis amabilis, P. grandiflora, P. Schilleriana, P. Stuartii, P. violacea, Sophronitis grandiflora, S. coccinea, Trichopilia suavis, T. tortilis, Vanda Amesiana, V. insignis, V. suavis, V. tricolor, Zygopetalum Mackayi, Cymbidium eburneum, and C. Lowianum.

The Flower Garden.

Hedges and Screens.—The cheap r ate at which Cupressus Lawsoniana, Thuiopsis borealis, and Thuia Lobbi may be bought, should encourage their use in preference to planting so much Laurel, Privet, and Thorn, for all of them grow rapidly into a dense hedge, with a small amount of labour as regards clipping or cultivation, other than mulching, during the whole of the first two years. We have a great deal of Lawson's Cypress and Thuiopsis borealis in hedges, and the only labour entailed is that of clipping them into form once a year, and that is work that is being done now. With severe weather in prospect, it might be better to defer the work. As we have done this kind of work in mid-winter without injury to the plants, we always now get it done when the necessary time is at command. Besides their elegant appearance, these small-growing Conifers bear root-pruning with impunity, which is more than can be said for either Thorns, Laurel, or Privet; hence their adaptability for planting as a background to flower borders. The ground for the flowers necessarily requires to be deeply tilled annually within a foot of the main stem of the plants, and this has no detrimental effect on the hedge plants, so long as the roots at the other side have freedom to ramble; and the well-doing of flowers immediately in front of the hedge is secured.

Pruning Shrubs.—Excepting when the frost is very severe, shrubs may be trimmed at any time during the winter. Some species and varieties form regularly well-balanced head naturally, and withou assistance, but others need to have a few inches cut off any boughs that have outrun their weaker neighbours. As a rule amongst evergreens, all the Cypresses, Junipers, Cryptomerias, and Thuias do not need this kind of trimming, whilst Pines and Spruces do sometimes require to have their shoots cut in. *W. Wildsmith, Heckfield Place, Hants.*

The Hardy Fruit Garden.

Root Pruning and Lifting may still be performed in mild weather. But from this time forward it is not prudent to do the operation too severely, and in the case of large trees to operate on one-half of the mass of roots only, leaving the other half till next autumn; see that all the roots injured by the fork in digging out the soil have those parts cut over with a sharp knife, and a suitable compost placed about the roots and firmly trampled in. Planting operations of all kinds may be pushed on with vigour whilst the weather is mild and the ground in suitable condition, but in heavy, wettish soils planting is sometimes better when deferred till the month of March; but where there remains much to be done it should be taken in hand, using dry compost from the potting shed, or stacked loam and leaf mould about the roots. All trees which may arrive from the nurseryman with dry roots should be soaked in water for some hours before being planted.

Wall Trees.—The pruning and dressing of wall trees (with the exception of Peaches, Nectarines, and Figs, the pruning of which should be left until the last), should be pushed on. Apricots, if infested with scale, may be dressed with Gishurst soap, at the rate of 4 oz. to the gallon of water, and these being the first to bloom, care must be taken not to use this or any other insecticide of too great strength. Apricot trees should have their shoots pinched in the summer, so that in the winter there is little cutting out required, and this will consist chiefly in removing old snags, and preventing crowding of the branches. Young wood should be left in quantity for filling up gaps caused by branches dying off. Recently planted young trees should be left for the present. After the pruning and nailing of fruiting trees are finished, means should be taken to protect the flower buds from the sun's rays, and for this purpose spruce fir branches nailed lightly to the wall are efficacious. In early localities, Apricots as well as Peaches and Nectarines, are safest when the wood is unfastened and allowed to hang loosely away from the wall, as by doing so the blooming is retarded considerably, and as a consequence there is less loss of fruit from frost. *H. Markham, Mereworth Castle, Maidstone.*

SOCIETIES.

ROYAL HORTICULTURAL.

CHISWICK TRIALS OF ANNUALS, ETC.—The following list contains the names of the various annual plants sown for trial purposes during the past season at the Royal Horticultural Society's Garden at Chiswick, and which met with the commendation of the visiting members of the Floral Committee. The plants, as will be seen, are not novelties, the list consisting of those things which, as seen growing at Chiswick during the summer, were considered most worthy of being grown for garden decoration. The same may be stated concerning the varieties of Ivy, mentioned on p. 693 in our issue for December 14:—

Asperula azurea setosa.
Aster Crown Pompon.
,, Double German.
,, Dwarf Bouquet.
,, Dwarf Chrysanthemum.
,, Dwarf Crown.
,, Dwarf Queen.
,, Dwarf pyramidal.
,, Extra double German Victoria.
,, Hedgehog.
,, Imbricated Pompon.
,, Improved Bettridge's.
,, Improved Rose.
,, Liliput.
,, New Victoria.
,, Victoria.
,, Victoria Needle.
Bartonia aurea.
Cacalia aurea.
Calendula officinalis superba.
,, pluvialis.
Calliopsis bicolor coronata.
Campanula macrostyla.
Centaurea cyanus, light blue.
,, Sweet Sultan, yellow.
,, ,, rose.
Coreopsis, yellow.
Dahlia, Amos Perry.
,, Cetewayo.
,, Chilwell Beauty.
,, Duchess of Westminster.
,, Edith.
,, Empress of India.
,, Fashion.
,, Florrie Fisher.
,, Guardsman.
,, Hugo.
,, Kate.
,, Lady Monckton.
,, Magpie.
,, Mr. G. Harris.
,, Mr. Kennett.
,, Miss Gordon.
,, Miss Linaker.
,, Miss L. Pryor.
,, Mrs. Kendal.
,, Mrs. Langtry.
,, Negro.
,, Paragon.
,, Professor Baldwin.
,, Queen of Singles.
,, Royal Queen.
,, Silver King.
,, Thomas White.
,, Victory.
,, W. H. Williams.
Dianthus sinensis Eastern Queen.
Erysimum arkansanum.
,, Peroffskianum.
Eschscholtzia crocea alba.
,, tenuifolia.
,, Mandarin.
Eutoca viscida.
Gilia liniflora.
Gypsophila elegans.
Heliotrope Capus.
,, Fleur d'Été.
,, Victor Duruy.
Iberis (Candytuft) Dunnetti.
,, ,, New Carmine.
Iberis (Candytuft) New Hybrid (mixed).
,, ,, New White Spiral.
Kaulfussia amelloides atro-violacea.
Lavatera trimestris.
,, ,, alba.
Layia elegans.
,, glandulosa.
Leptosiphon roseus.
Limnanthes Douglasi grandiflora.
Linaria reticulata aureo purpurea.
Linum grandiflorum rubrum.
Lupinus hybridus atro-coccineus.
,, luteus.
,, nanus.
,, ,, albus.
Marigold Dwarf New Golden.
,, ,, Orange.
,, Electric Light.
,, Lemon Queen.
,, Prince of Orange.
,, Selected French.
Mignonette Covent Garden Favourite
Nolana atriplicifolia alba.
,, ,, (blue, violet, and white).
Papaver Danebrog.
,, Hooker's Double.
,, Mephisto.
,, Shirley's variety.
,, Snowdrift. [Steinforth
,, somniferum French
,, ,, Rawson's fringed.
,, umbrosum (double).
,, Pæony double, various.
Pea (sweet) Apple Blossom.
,, ,, Splendour.
Pelargonium Copernic.
,, Mons. Poirier.
,, Opal.
,, Souvenir de Mirande.
Platystemon californicum
Scabiosa, dwarf double (mixed).
,, half dwarf double (blood red).
Schizanthus pyramidalis compactus.
Silene pendula, double pink.
,, armeria.
Stock, dwarf German ten week.
,, extra double dwarf.
,, extra double large flowering.
,, large flowering pyramidal ten week.
,, large flowering ten week.
,, Victoria Bouquet.
,, wall flowered leaved ten week.
Viscaria cardinalis.
,, cœrulea.
Zinnia elegans (Strain).

Brussels Sprouts Paris Market.
,, Northern Prize.
,, Paris Market.
Pea Consummate.
Raspberry the Hornet.

HOME CORRESPONDENCE.

A NEW CHRYSANTHEMUM CATALOGUE.—Under this heading, a short paragraph appeared in last week's issue of the *Gardeners' Chronicle*. As it was inserted without my knowledge or authority, I should like to add one or two observations to prevent misunderstanding. It is probable that a new catalogue will be issued next year, but as yet the general committee of the National Chrysanthemum Society has not sanctioned its publication. There has been no meeting of the catalogue committee to consider what form the new work shall take, nor the names of the persons, if any, who are to be asked to assist. The paragraph as it stands, therefore, appears to me to be premature and slightly misleading. But apart from these facts, and assuming the new catalogue will be prepared in the same way, and take the same form as the last one, it occurs to me that the work is certainly likely to be aided much more than is already proposed by the writer of the paragraph above referred to, if catalogues containing novelties and other information likely to be of service, be sent also to me for incorporation in the alphabetical list, a division I make bold to say, of equal importance to the select lists. *C. Harman Payne, Secretary National Chrysanthemum Society Catalogue Committee.*

PHŒNIX RŒBELENI. — The above plant described by Mr. James O'Brien, and illustrated in the *Gardeners' Chronicle* of October 26 last, is a native of the Laos States, Siam. It grows in great abundance along the rocky banks of the majestic river Mekong, as far north as the 22° latitude, and where the thermometer descends to 5° Celsius (41° Fahr.), in the months of December and January. Although I looked very eagerly for seeds and flowers, I could discover none, but was told by the natives that monkeys and wild cats are very fond of the small berries, and carry them to their hiding-places, where I really could discover thousands of seedlings. The stems of this exceedingly graceful pigmy Palm never attain to more than about 2 feet in height, and the plant generally grows in large clumps. In the Singapore Botanic Garden, there exists a small example of a Palm without a stem, and resembling my Palm very much in colour and shape of the leaves, labelled Phœnix farinosa and of unknown origin; but whether it is the same or a nearly allied species, I cannot say, but doubt it very much, as P. Rœbelenii was unknown to the natives, but was much admired by those Laos living farther south of the town of Luang Phrabang. *C. Roebelen, Orchid Collector, Singapore.*

ENGLISH PLANT-NAMES. — May I warn your readers against accepting implicitly the derivations of certain names given by "W. T." on pp. 717, 718. He appears to follow Dr. Prior almost entirely, and he could accept no better lead; but it would be well if he would also consult the English Dialect Society's Dictionary of English Plant-Names, in which some of the derivations he gives are shown to be at least debateable, *e.g.*, the connection of London Pride with George London, who died in 1713, is at best very doubtful, and there is no evidence for saying that he introduced it from Ireland; the name was in common use in 1697, applied to *Saxifraga umbrosa*, which now bears it; while Johnson (1633) calls a variety of Sweet William which was called Pride of London by Sutherland in 1613, by the same name. In spite of the authority cited by Dr. Prior, the Irish Shamrock is certainly very seldom interpreted as Medicago lupulina. *James Britten.*

LADY DOWNES' HOUSE AT CLOVENFORDS.—With reference to your notes on a photograph of above house, in your last issue, it may be interesting to some of your readers to know that the house is 200 feet long, 24 feet wide, and 16 feet high. It contains forty-four Vines, and 160 rods. The crop this season consists of 2600 fine large bunches. *J. T.*

THE ROYAL HORTICULTURAL SOCIETY'S FLORAL COMMITTEE.—I think Mr. C. Noble's letter in the issue of December 21 is rather calculated to do harm among the supporters of the Royal Horticultural Society than otherwise. It would appear that the Committee is divided against itself, as Mr. Noble himself is one of that body. Outside members of the gardening fraternity like myself are apt to over-estimate the letters written by insiders, and read more than the writer means (of course that is *our* fault, the writer at once says), and be rather prejudiced than not. Mr. Noble's seeming grievance appears to be that the Floral Committee was "emaciated" on December 10. If he will read the names of those members who were present, in the *Gardeners' Chronicle* of December 14, he will see there were twelve members present on the Floral, and ten on the Orchid Committee. If Mr. Noble counts by size of the member, of course I am not in a position to contest the matter, as I am not personally acquainted with all the members. To my mind (and it may be called that of a specialist and so open to greater errors) and that of many others, I think the Orchid as a family is so totally distinct to all others, that those who are thoroughly able to adjudge on all other outside and inside plants are often not competent to assess the merits or demerits of the Orchid, and sometimes *vice versâ* also. I think that the separation of the Orchid Committee was the result of this idea being largely felt to be true at the time of its separation. I am quite sure that the man who can grow a Rose ought to be able to do the same with all other garden flowers; but it does not follow that he can as easily and well manage a collection of Orchids whose vagaries and wants have to be found out by time and the death or weakening of many a plant. Separate Committees for Apples, Pears, and Melons are purely imaginary, for who of any knowledge cannot grow them all if he can grow any one of them. *D. B. Crawshay.*

SCHOOLS OF HORTICULTURE.—I notice in your issue of the 14th inst., an article on "Schools of Horticulture." There is no denying that such institutions are a great boon to young gardeners, insomuch that they produce that refinement we so often see in continental gardeners, and a knowledge, however limited, of the sciences connected with gardening makes it doubly interesting. It is rather remarkable that while most of the continental governments recognise this by supporting and otherwise promoting horticultural schools, our government practically ignores it. There is, I admit, an apology for a school of horticulture at Kew, but to gardeners intimately acquainted with it, it is almost a fallacy to dub it such. There is no denying that to intending planters and Curators of botanical establishments it is very beneficial, but for horticulturists in general it proffers only the rudiments. I remember, some months ago now, that the Editor and one of our leading gardeners called attention to the fact that lectures on sciences bearing on horticulture were given at Kew. It may be of interest to gardeners to be informed what subjects are treated in those lectures: they embrace chemistry, physics, geographical, systematic, and economic botany. It is true, we have in them a mass of information that can be turned to great practical benefit to horticulture, but that knowledge by which these can be turned into account is conspicuous by its absence. I refer to vegetable physiology. The gardener has grown, and does grow, plants without the knowledge of the above mentioned sciences, but he never has, and never will do so, without some idea, however crude and unsystematised, of vegetable physiology. Chemistry, physics, geographical, systematic and economic botany, are but sources from which the gardener may draw his deductions; but the science essential to a gardener in his daily work, I mean applied physiology, is what Kew practically ignores. I trust that those who have the arranging of these lectures at the Royal Gardens will introduce a course on the subject to which I refer, as I feel sure it would prove highly beneficial to present and future gardeners at Kew. *A. K. W.*

CHRYSANTHEMUM SPORTS.—Mr. Molyneux is correct in what he stated recently in these pages concerning the incurved Chrysanthemum Lady Dorothy. It did sport with me in the year 1886, and became fixed, and was shown by me, for the first time, at the Wimbledon Chrysanthemum Show, and was awarded a First-class Certificate in the year 1887. The plant was sent out by Messrs. Cannell & Sons, for the first time in 1888, and I may add that the colour does not seem to be properly described—it is a pretty tint of fawn flushed with pink. When grown for late flowering, and with all its flower-buds left on, it comes more of a yellow colour than fawn. *J. Buss, West Hill, Epsom.*

CYPHOMANDRA BETACEA.—I have a plant of the above grown from seed sown in the month of March last, and which is 3 feet high, and the foliage 20 inches long by 12 inches wide; and it is much admired for the foliage. I am anxious to fruit it if possible, and I am told that it has been fruited at Kew Gardens. *W. L.* [The plant will grow in a greenhouse from which frost is excluded, the culture being similar to that of the Tomato; and fruits are produced late in the autumn. ED.]

EUCHARIS MITE.—I notice in your reply to "S. G.," p. 703, respecting the Eucharis mite, that you have doubts as to there being any cure known for this pest. To try and convince you that it is possible to eradicate them, I will relate my experiences. About three years since there came under my charge several pots of bulbs of Eucharis amazonica, which were infested with thousands of mites, that had almost spoiled them, for there was scarcely a leaf left, although a dozen bulbs were in each pot. From good large bulbs the mites had reduced them very much in size by eating out the base, the outsides decaying away in consequence. In the first place I allowed the soil in the pots to become

dry, then shook out the bulbs, washed them in a solution of tobacco-water and soft soap, and a small quantity of washing soda. I then sprinkled a little fresh slacked lime all over them, and allowed them to remain in this state for two days, and then washed them again with the same solution as before, but to which a little petroleum was added. They were then potted in good loam, in a rough state, peat, with coarse sand, and half-inch bones, and a small quantity of soot, the latter substance being put round the bulbs as they were potted. After all was done, the bulbs were plunged in bottom heat in a stove, and in about eight weeks' time they began to push up young leaves. After they had made a good growth they were occasionally watered with a little weak liquid manure. I forward by this post two blooms and a leaf from a 12-inch pot of these same bulbs. This is the second time of their flowering since going under the treatment, and this potful has now fourteen spikes, each carrying six blooms. *A. Bishop, Westley Hall Gardens.*

PLANTING PERENNIALS.—On p. 685, "J.," in discussing this subject, would seem to do away altogether with borders of perennials; but this cannot be done in all cases. I, for one, am now making a border 130 yards long and 6 feet wide, with a path 4 feet wide running in front of it. The border has been raised 1 foot higher at the back than in the front. There will be an alley behind the border, and next to this comes rustic wood-work, 5 feet high, and the border has a gradual bend in its whole length. The idea was to plant tall things at the back of the border, and in front groups of different shapes, but nothing in front which grows higher than 2 feet, and no plant to be repeated more than twice, unless it stand in the back row. We have another border under the shade of trees (the other is in the open), which is raised 2 feet 6 inches above the path, and it is 30 yards long by 10 yards wide; the back is faced by Portugal Laurels; in front there are bulbs, but I am at a loss to arrange the rest of the border, it is so wide and so high. I have finished one border, and planted it with Rhododendrons and Liliums between these, most of the varieties of Narcissus in groups in front, and the margin being dotted with Crocuses. *J. Paddock.*

DAMPING OF CHRYSANTHEMUM BLOOMS.—Mr. Cundy, in his note on the above subject, does not mention in what way or with what manure he supplies his plants, and which I consider is the whole secret of success. The most harmful of all manures, if applied injudiciously, is sulphate of ammonia. It should never be used after the first florets unfold, and at no time during dull weather. I have seen rows of plants actually flagging in the sunshine from the effects of an application of this substance. I would not advocate its use at all where the soil is heavy and retentive, or where the plants stand on a damp bottom. With some varieties of Chrysanthemums, I would not advise the use of manures in the potting soil, and to this class Edouard Audiguier belongs, and is an example, for it is a rarity to see a good specimen of it, and the usual reply to inquiries concerning this variety, is "that it damped off before it was fully open." Surely this plague of damping-off may be averted in some way. Ed. Audiguier is one of the best of its class, unique in colour, and of good size and substance, but something is wrong with the constitution of the plant, notwithstanding the growth being all that could be desired. I think a fuller knowledge of the vagaries of each variety is needed to enable the grower to combat unfavourable weather and position, and an intimate knowledge of the manures that we use, and their effects on certain varieties. It is, I believe a species of mould-fungus, and some varieties, like Ed. Audiguier, are more liable to attacks than others, and therefore, as soon as it appears, I would advocate the isolation of the affected plants to prevent it spreading. *H. Brown, Roydon.* [Better destroy the affected blooms. ED.]

RED-BERRIED ELDER.—The two articles upon fruiting this shrub, which appeared in the *Gardeners' Chronicle*, p. 699, attracted my observation, and especially that written by Professor C. Babington, and describing its growing successfully at so great an altitude on the Grampians. Sambucus racemosa being, as I supposed, a native of Italy and the South of Europe, it does seem somewhat remarkable that it should be so much distributed over this northern part of the kingdom [and Asia]. It is common about here, and is to be seen growing as a fence-plant round two small gardens situated between this place and the town of Keith. They have been there for many years, and in favourable seasons I have remarked the plants covered with ripe fruits at about the beginning of August. The birds do not seem to carry off the berries so fast in these open places, but here the berries are seldom left to ripen. My interest in this shrub may be readily conceived when I explain that during the time that I lived—now many years ago—as gardener to a lady in the South of England, I had seed of this Elder sent to me by her from Rome, and some also of the yellow-berried Ivy, Hedera chrysocarpa, the latter being brought to her in a bouquet of flowers one winter from Hadrian's Villa. Both kinds of seed germinated, and the Elders were planted singly on the turf near a carriage-drive, being well sheltered by shrubs and trees. The soil resting on the chalk was light and shallow. The first year that they fruited the berries did not get fairly coloured, but the second year they were covered over with thin gauze, and ripened perfectly. I find that they fruit best here in a rather shaded corner away from the midday sun. The Hedera fruited, but the Ivy came black. *John Webster, Gordon Castle Gardens.*

—— Some of your correspondents seem to doubt about the hardiness of the red-berried Elder (S. racemosa), and as to its fruiting in England. Perhaps it might be worth while to repeat what I said a few weeks ago, that it has been perfectly wild in the woods here for as long a time as I can remember, and that it is as hardy and fruits as freely as does the common Elder, and has come up from seed in the woods like the common Elder for many years. *C. W. Strickland, Hildenley, Malton.*

MARKETS.

COVENT GARDEN, December 24.

[We cannot accept any editorial responsibility for the subjoined reports, which, however, are furnished to us regularly every Thursday, by the kindness of several of the principal salesmen, who revise the list, and who are responsible for the quotations. It must be remembered that these quotations represent averages for the week preceding the date of our report. The prices depend upon the quality of the samples, the supply in the market, and they fluctuate, not only from day to day, but often several times in one day, and therefore the prices quoted as averages for the past week must not be taken as indicating the particular prices at any particular date, and still less can they be taken as guides to the prices in the coming week. ED.]

OUR market has been well supplied with all classes of goods for Christmas. Business has not been over brisk, and prices have remained unaltered. *James Webber, Wholesale Apple Market.*

FRUIT.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Apples, ½-sieve	1 6	7 0	Lemons, per case	12 0	25 0
— Nova Scotia, brl.	12 0	25 0	Pine-apples, Eng., lb.	1 0	1 6
Cobs, per 100 lb.	140 0	...	— St. Michael, each	2 0	6 0
Grapes, per lb.	1 0	3 0			

VEGETABLES.—AVERAGE RETAIL PRICES.

	s. d.	s. d.		s. d.	s. d.
Beans, French, lb.	0 9	...	Mushrooms, punnet	1 6	...
Beet, red, per dozen	1 0	2 0	Onions, per bunch	0 5	...
Carrots, per bunch	0 6	...	Parsley, per bunch	0 4	...
Cauliflowers, each	0 3	...	Rhubarb, per bundle	0 6	...
Celery, per bundle	1 6	2 0	Seakale, punnet	2 6	...
Cucumbers, each	1 0	1 6	Shallots, per lb.	0 6	...
Endive, per dozen	1 6	...	Spinach, per bushel	3 6	...
Herbs, per bunch	0 4	...	Sprue, per bundle	1 6	...
Leeks, per bunch	0 3	...	Brussel Sprouts, pr lb.	0 3	...
Lettuces, per dozen	1 6	...	Tomatos, per lb.	1 0	...
Mustard and Cress, punnet	0 4	...	Turnips, per bunch, new	0 5	...

POTATOS: — Market firm. For best samples, 90*s.* to 100*s.*; medium, 60*s.* to 70*s.*; and ordinary to inferior, 40*s.* to 50*s.* per ton.

CUT FLOWERS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Abutilons, 12 bun.	2 0	4 0	Narciss., paper-white, French, doz. bun.	4 0	8 0
Azaleas, doz. sprays	0 9	1 6	— Eng., doz. sprays	1 0	1 6
Bouvardias, per bun.	0 8	1 0	Pelargoniums, 12 spr.	0 9	1 6
Calla æthiopica, 12 bl.	4 0	8 0	— scarlet, 12 spr.	0 9	1 3
Camellias, white, doz.	2 0	4 0	Primulas, double, 12 sprays	1 0	1 6
— various, per doz.	1 0	2 0	Roman Hyacinths, Eng., doz. sprays	0 9	1 6
Carnations, 12 blms.	1 0	2 0	Roses, Tea, per doz.	1 0	3 0
Chrysanth., 12 bun.	4 0	12 0	— coloured, dozen	2 0	4 0
Chrysanth., 12 blms.	0 6	3 0	— French, dozen	1 0	2 0
Cyclamens, 12 blms.	0 4	0 9	— red, per dozen	1 0	2 0
Eucharis, per dozen	3 0	4 0	— Safrano, dozen	1 0	1 6
Gardenias, 12 blooms	6 0	12 0	Spirea, doz. sprays	1 0	1 6
Heliotropes, 12 spr.	0 6	1 0	Stephanotis, 12 spr.	9 0	12 0
Lilac, white, Fr., bun.	6 0	8 0	Tuberoses, 12 blms.	1 6	2 0
Lilium, var., 12 bl.	2 0	6 0	Tulips, doz. blooms	1 0	2 0
Lily of the Valley, doz. sprays	6 0	9 0	Violets, 12 bun	1 0	2 0
Maiden Hair Fern, 12 bun.	4 0	9 0	— French, bunch	1 6	2 6
Mignonette, 12 bun.	2 0	4 0	— Parma, bunch	4 0	6 0
— French, per bun.	1 6	2 0			
Marguerites, 12 bun.	3 0	6 0			

ORCHID-BLOOM in variety.

PLANTS IN POTS.—AVERAGE WHOLESALE PRICES.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi, doz.	6 0	18 0	Ericas, various, doz.	8 0	24 0
Aspidistria, doz.	18 0	42 0	Evergreens, in var., per dozen	6 0	24 0
— specimen plants, each	7 6	10 6	Ferns, in var., per dozen	4 0	18 0
Azaleas, various, each	2 6	3 6	Ficus elastica, each	1 6	7 0
Begonias, dozen	4 0	12 0	Foliage plants, various, each	2 0	10 0
Christmas trees, doz.	4 0	24 0	Hyacinths, p. doz	9 0	12 0
— — extra size, each	5 0	21 0	Lily of the Valley, p. doz. pots	24 0	42 0
Chrysanth., dozen	6 0	15 0	Marguerites, doz.	6 0	12 0
— extra large, each	2 0	5 0	Palms in var., each	2 6	21 0
Cyclamen, dozen	15 0	24 0	Pelargoniums, scarlet, per dozen	6 0	8 0
Cyperus, per dozen	4 0	12 0	Roman Hyacinths, per dozen pots	9 0	12 0
Dracæna terminalis, per dozen	30 0	60 0	Solanums, per dozen	6 0	12 0
— viridis, per doz.	12 0	24 0	Tulips, doz. pots	8 0	10 0
Epiphyllum, per doz.	12 0	18 0			
Euonymus, in var., per dozen	6 0	18 0			

SEEDS.

LONDON: *Dec.* 23.—Messrs. John Shaw & Sons, seed merchants, of 37, Mark Lane, London, report to-day's market quite of a holiday character, business in seeds being postponed until the new year. Quotations for Alsike red and white Clover are consequently unaltered. Rye-grasses are also neglected. Winter Tares keep firm. Blue Peas steady. Haricots are good and cheap. More money is asked for Rape seed. Millet is slightly dearer. Linseed continues slow.

CORN.

Averages.—Official statement of the prices of British corn, imperial measure (quarter) for the week ended December 21:—Wheat, 30*s.* 1*d.*; Barley, 30*s.* 4*d.*; Oats, 18*s.* 2*d.* For the corresponding period in 1888:—Wheat, 30*s.* 8*d.*; Barley, 26*s.* 11*d.*; Oats, 16*s.* 3*d.*

FRUITS AND VEGETABLES.

COVENT GARDEN: *Dec.* 23.—Trade dull for the period. Grapes (hothouse), 1*s.* to 2*s.* 6*d.*; Tomatos, 6*d.* to 8*d.* per lb.; Apples (cooking), 3*s.* 6*d.* to 7*s.*; ditto (Blenheims), 6*s.* to 7*s.*; ditto (dessert), 5*s.* to 8*s.* per bushel; Cob-nuts, 140*s.* to 145*s.* per 100 lb.; Coleworts, 1*s.* 6*d.* to 2*s.*; Savoys, 1*s.* to 2*s.* 6*d.*; Cauliflowers, 5*s.* to 10*s.* per tally; Beetroot, 3*d.* to 4*d.*; Cucumbers, 6*s.* to 9*s.* per dozen; Spinach, 1*s.* 6*d.* to 2*s.* per bushel; Onions, 140*s.* to 160*s.* per ton; Brussels Sprouts, 9*d.* to 1*s.* per half-sieve; Mushrooms, 10*s.* to 12*s.* per dozen punnets; Celery, 6*s.* to 15*s.* per dozen rolls.

POTATOS.

LONDON: *Dec.* 23.—Good supplies at market, and trade fairly active for best qualities. Inferior, however, still meet a dull sale. Hebrons, 50*s.* to 100*s.*; Regents, 40*s.* to 85*s.*; Magnum Bonums, 45*s.* to 90*s.*; Imperators, 45*s.* to 70*s.* per ton.

HAY.

Averages.—The following are the latest to hand for the present week:—Clover, prime 78*s.* to 96*s.*; inferior, 40*s.* to 75*s.*; best hay, 60*s.* to 82*s.*; inferior, 26*s.* to 50*s.*; and straw, 26*s.* to 40*s.* per load.

NOTICES TO CORRESPONDENTS.

☞ CORRESPONDENTS sending plants or fruits to be named, or asking questions demanding time and research for their solution, must not expect to obtain an answer to their enquiries in the current week.

All communications intended for publication, as well as specimens and plants for naming, should be addressed to the EDITOR. Such communications should be *written on one side only of the paper*, and sent as early in the week as possible.

Letters relating to ADVERTISEMENTS, *or to the supply of the Paper, should be addressed to the* PUBLISHER, and not to the Editor.

Newspapers. — Correspondents sending newspapers should be careful to mark the paragraphs they wish the Editor to see.

CLIMBING COMPOSITES, *M.*, are, with the exception of the Mutisias, of rare occurrence. Among the exceptions is Coreopis incisa, figured in one of the earliest numbers of the *Botanical Register*.

CORRECTION.—In the Royal Horticultural Society

report, p. 701, in our issue of the 14th inst., for "Lælia bella" read "Cœlia bella."

CUCUMBERS: *H. R. G.* Roots are apparently infested with some kind of weevil. Clear out the plants and soil, and start anew with soil and manure from new sources.

HYACINTH BULBS FAILING: *De Candolle.* Probably the bulbs were over-watered soon after planting, or they may not have been properly matured.

MOSS ON LAWN: *M. B. M.* With an iron-toothed rake scratch up as much as possible without destroying the grasses existing in the lawn, and dress with loam one-half, wood-ashes one-quarter, road-grit or burnt earth one-quarter. Put all of these materials through a half-inch screen or sieve before scattering them over the lawn, and put on as much as will cover mossy places without quite hiding the blades of grass. Wood-ashes finely sifted may be used in small quantities at any season, and preferably before rain, which very soon washes them into the turf.

NAMES OF PLANTS: *H. M.* 2, Perhaps Cupressus Goveniana, but we cannot be sure from the morsel sent. Are there any cones? 3, Juniperus sinensis; 6, Cupressus Lawsoniana var. The others were named last week.—*R. T.* Odontoglossum tripudians.

INSECTS: *J. R.* We believe the very minute shining black objects occurring on the young Apple shoots sent, are the eggs of the bark-mite, described in the *Gardeners' Chronicle*, 1843, p. 356. (See fig. 110). Your wash of paraffin and soap-suds cannot fail to do good. *I. O. W.*

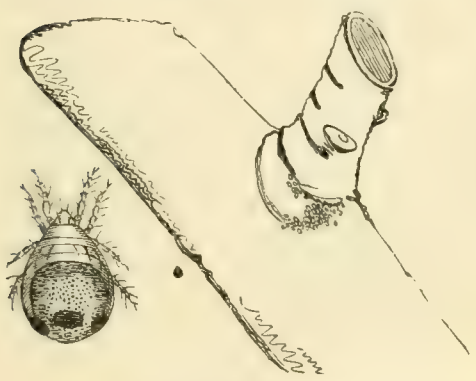


FIG. 110.—THE BARK MITE.

NAMES OF FRUITS: *J. Middleton.* 1, Claygate Pearmain; 2, not recognised.—*E. L.* 1, French Crab; 2, Golden Noble; 3, Golden Pearmain; 4, Adam's Pearmain.—*J. P. M.* Not recognised. A very beautiful fruit which we will endeavour to make out.—*T. R. J. C.* General Todtleben.

ORCHID LEAF: *S. H., Halifax.* We find the rusty spots on your leaf to contain minute eel-worms, after the style of the eel-worms in Cucumber roots, and we believe these minute creatures to be the cause of the mischief. The eel-worms reach the leaves from the soil, or from water. There is no fungus of any kind.

CATALOGUES RECEIVED.

J. CHEAL & SONS, Lowfield Nurseries, Crawley—Vegetable and Flower Seeds.
ARCHIBALD FINDLAY, Markinch—New Potatos.
JOHN WATERER & SONS, Bagshot, Surrey—Rhododendrons, Trees, Shrubs, &c.
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W. K. WOODCOCK, Syston, near Leicester—Chrysanthemums.
JAMES VEITCH & SONS, Royal Exotic Nursery, Chelsea, S.W.—Seeds, &c.

COMMUNICATIONS RECEIVED.—P. E. N.—R. A. R.—W. T.—Bee.—C. W. D.—J. A.—H. B.—A. D.—J. D.—S.—Ch. D. B.—M. T.—W. A.—G. W.—J. C. C.—T. V.—M. R.—E. C—A. Smets.—W. Christian.—J. R. J.—E. W.—E. G.—G. M. H.—S. Cooke.—A. W.—F. F.

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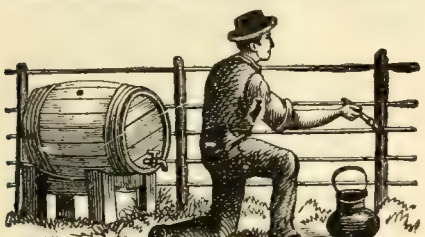
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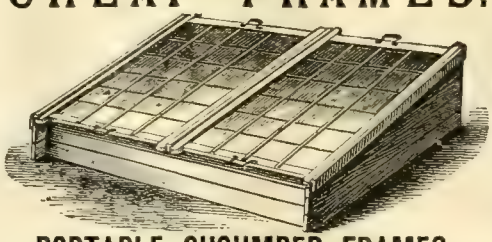
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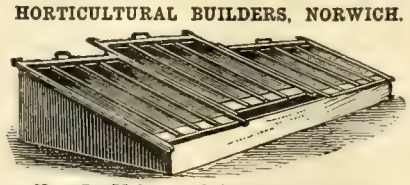
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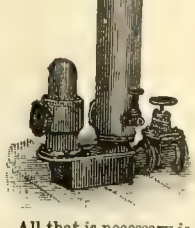


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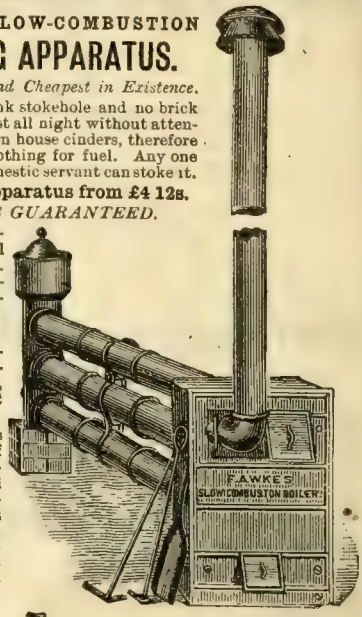
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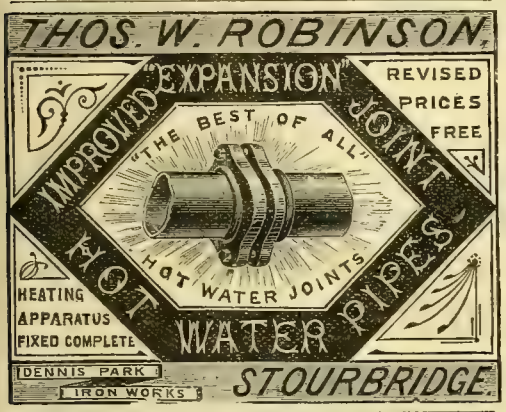
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R. B. LAIRD AND SONS can recommend with every confidence Scotchmen thoroughly qualified as GARDENERS, FORESTERS, or LAND STEWARDS, either for large or small establishments, and will be pleased to furnish full particulars on application.—17, Frederick Street, Edinburgh.

To Noblemen and Gentlemen requiring Land Agents, STEWARDS, BAILIFFS, or GARDENERS.

JAMES CARTER AND CO. have at all times upon their Register reliable and competent MEN, several of whom are personally well known to Messrs. Carter. Enquiries should be made to 237 and 239, High Holborn, W.C.

SCOTCH GARDENERS.—I have at present several very superior MEN on my Register, whose character and ability will bear the strictest investigation.—JOHN DOWNIE, Seedsman, 144, Princes Street, Edinburgh.

RICHARD SMITH AND CO. beg to announce that they are constantly receiving applications from Gardeners seeking situations, and that they will be able to supply any Lady or Gentleman with particulars, &c.—St. John's Nurseries, Worcester.

Gardeners, Foresters, and Farm Bailiffs.

LITTLE AND BALLANTYNE, The Queen's Nurserymen and Seedsmen, Carlisle, invite correspondence with Landed Proprietors, Agents, and others requiring the services of GARDENERS, FORESTERS, and FARM BAILIFFS. Their extensive business relations throughout the Kingdom enable them to distinguish men of good character and ability, such as they would be glad to recommend.

GARDENER (HEAD), where two or more are kept.—Age 28, married, no family; leaving to better himself. Good references.—C., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

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GARDENER (HEAD), with good staff; age 31, married, one child.—A GENTLEMAN will have great pleasure in recommending his late Head Gardener to any Nobleman or Gentleman requiring the services of a thoroughly practical man. Excels in Early and Late Forcing, Fruit, Vegetables, and Plant Growing. Twenty years' experience; thirteen years as Foreman in first-class establishments. Good references.—G. A. BISHOP, Teddington.

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GARDENER (HEAD WORKING, or SINGLE-HANDED).—Thoroughly competent to take charge of first-class place. Present six years.—HENRY LAWRENCE, Hirle, Lewes.

GARDENER, or GARDENER and BAILIFF.—The LIVERPOOL HORTICULTURAL CO (John Cowan), Limited, The Vineyard and Nurseries, Garston, near Liverpool, wish to recommend a first-class man in the above capacity. Unexceptional references. Full particulars on application to the Company.

GARDENER (UNDER), or otherwise. — Age 20; six years' experience, both Glass and Kitchen Garden. Six years' character.—A. W., Station Terrace, Upper Walmer, near Deal, Kent.

Trade.

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JOURNEYMAN (FIRST).—Age 23; practical. —For reference, apply to J. SMITH, 1, Cravells Road, Harpenden, Herts.

JOURNEYMAN (FIRST).—W. PETERS, The Gardens, Givon's Grove, Leatherhead, Surrey, will be pleased to recommend Advertiser, as above. Eight years' experience.—H. STOWE, Heybridge, Maldon, Essex.

JOURNEYMAN, in good establishment, or SECOND, where four or five are kept.—Age 28; good testimonials.—JOHN JOHNSON, Penny Bridge, Ulverston, Lancashire.

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Nurserymen, Seedsmen, and Florists.

SHOPMAN.—Age 25; good knowledge of Cut Flowers, Seeds, and Bulbs, Fruit, and Plants in general. Eight years' experience. Best of characters.—A. B., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, W.C.

HOLLOWAY'S OINTMENT AND PILLS. — Counsel for the delicate.— Those to whom the changeable temperature is a protracted period of trial should seek the earliest opportunity of removing all obstacles to good health. This cooling Ointment, perseveringly rubbed upon the skin, is the most reliable remedy for overcoming all diseases of the throat and chest. Quinsey, relaxed tonsils, sore throat, swollen glands, ordinary catarrh, and bronchitis, usually prevailing at this season, may be arrested as soon as discovered, and every symptom banished by Holloway's simple and effective treatment. This Ointment and Pills are highly commended for the facility with which they successfully contend with influenza; they allay in an incredibly short time the distressing fever and teasing cough.

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STOCK — Inches.	SIZES — Inches.
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16 × 12	20 × 16
18 × 12	22 × 16
20 × 12	24 × 16
16 × 14	20 × 18
18 × 14	22 × 18
20 × 14	24 × 18

21-oz. and **15-oz. Foreign,** of above sizes, in boxes of 100 feet and 200 feet super.

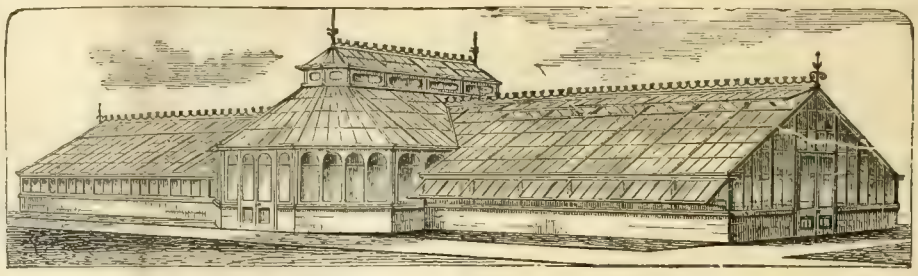
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SMITHFIELD IRONWORKS, LEEDS, AND SURREY WORKS, BLACKFRIARS ROAD, LONDON, S.E.,

HORTICULTURAL ENGINEERS to HER MAJESTY THE QUEEN, call Special Attention to their Patent Wrought-Iron Municipal or Angular Chambered and Tubular

HOT-WATER BOILERS,

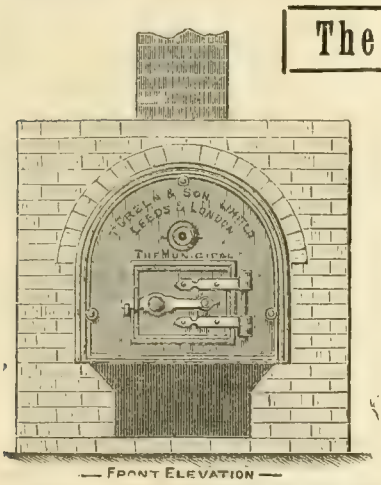
And others with SHELVES, and Hollow or Ordinary Cast-iron GRATE BARS.

SADDLE BOILERS, With WATERWAY BACKS and WELDED BOILERS, any of which are specially adapted for Heating Greenhouses, Conservatories, Churches, Chapels, Schools, Public Buildings, Entrance Halls, Warehouses, Workshops, &c. They are the neatest, cheapest, most effective, and durable of any extant.

The MUNICIPAL and TUBULAR ones are remarkable for their great heating power, slow combustion, and the length of time the fire will burn without requiring attention.

These Patterns secured the FIRST and HIGHEST PRIZE—a SILVER MEDAL—at the Royal Horticultural Society's Exhibition, South Kensington, London, June 1, 1881.

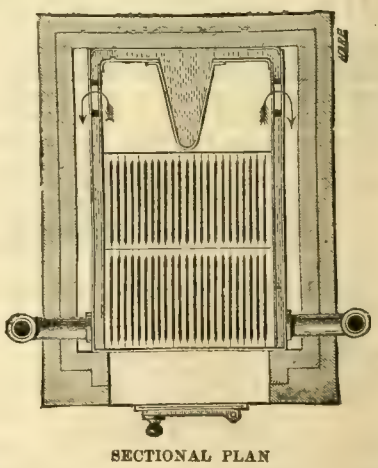
The Best Boiler Extant.



— FRONT ELEVATION —



— LONGITUDINAL SECTION —



SECTIONAL PLAN

The longitudinal section gives a view of the fire-box, water space, flues, &c. The cross section gives a view of the fire-box, water space and V-shaped back.
The front elevation shows it set in *brickwork, which is necessary for this class of boiler.*

SIZES AND PRICES.

MB 1	3 ft.	2 in.	long	by	2 ft.	0 in.	wide	by	2 ft.	0 in.	deep		1000 ft.	Price	£15	0	0
MB 2	4	0	,,	by	2	0	,,	by	2	0	,,	Calculated to heat 4-in. piping as follows :—	1280	,,	21	0	0
MB 3	5	0	,,	by	2	3	,,	by	2	6	,,		2200	,,	32	0	0
MB 4	6	6	,,	by	3	0	,,	by	3	0	,,		4000	,,	60	0	0
MB 5	8	6	,,	by	4	0	,,	by	3	9	,,		7000	,,	85	0	0

TESTIMONIALS.

MESSRS. THOS. GREEN AND SON, LTD., NORTH STREET, LEEDS. **Re HEATING APPARATUS.** Borough Engineer's Office, Municipal Buildings, Leeds. *January* 9, 1886.

GENTLEMEN,—I have great pleasure in bearing testimony to the efficiency and satisfactory working of the Hot-water Heating Apparatus you erected in these public buildings.

The buildings are four storeys high, and we have a total length of about 28,000 feet of piping in them, varying in size from 1½ in. to 6 in. diameter, with their connections, &c. The several offices and rooms can all be in operation at one time or separately, and the heat regulated by means of the valves to the temperature required, even in the coldest weather.

Two of your Patent Municipal Pattern Boilers, No. 4, work the whole of this piping easily, although we have three of them fixed. They are very powerful and economical in the consumption of fuel, and I am pleased to be able to report of them and the apparatus so favourably.

I am, Gentlemen, yours truly, THOS. HEWSON, Borough Engineer.

Morley House, Bagot, St. Saviour's, Jersey, *November 10th*, 1886.

GENTLEMEN,—The large Municipal Boiler which you sent me last year is doing its work satisfactorily; it is heating 5,000 feet of 4-inch pipe in one of my vineries, and I am quite sure that it has power to work a much greater length, while in cost of fuel it compares favourably with my other Boilers.

I have now five of your Boilers in use, and I cannot speak too well of their heating powers, or their comparatively small consumption of fuel.

MESSRS. THOS. GREEN AND SON, LTD., LEEDS.

Yours faithfully, (Signed) G. W. BASHFORD.

AND HUNDREDS OF OTHER REFERENCES CAN BE GIVEN IF REQUIRED.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM RICHARDS, at the Office of Messrs. BRADBURY, AGNEW, & Co., Lombard Street, Precinct of Whitefriars, City of London, in the County of Middlesex, and published by the said WILLIAM RICHARDS, at the Office, 41, Wellington Street, Parish of St. Paul's, Covent Garden, in the said County.—SATURDAY, December 28, 1889. Agent for Manchester—JOHN HEYWOOD.



